



Panduan Penyusunan Proposal

**PROGRAM PEMBINAAN
PERGURUAN TINGGI SWASTA (PP-PTS)
SKEMA B**

Tahun Anggaran 2019



**DIREKTORAT JENDERAL KELEMBAGAAN ILMU PENGETAHUAN,
TEKNOLOGI DAN PENDIDIKAN TINGGI
KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI**

KATA PENGANTAR

Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi (Ditjen Kelembagaan IPTEK dan DIKTI) Kementerian Riset, Teknologi dan Pendidikan Tinggi dalam mendukung upaya meningkatkan daya saing bangsa melalui peningkatan kualitas pendidikan tinggi telah mengupayakan berbagai inisiatif dan program. Inisiatif dan program dimaksud tidak hanya ditujukan bagi Perguruan Tinggi Negeri (PTN), tetapi juga bagi Perguruan Tinggi Swasta (PTS). Keberadaan PTS salah satunya adalah membantu upaya peningkatan akses serta menaikkan Angka Partisipasi Kasar (APK) pendidikan tinggi. Kontribusi PTS tersebut masih perlu ditingkatkan menuju perbaikan kualitas yang lebih baik. Salah satu program yang khusus ditargetkan bagi PTS adalah Program Pembinaan Perguruan Tinggi Swasta (PP-PTS). PP-PTS berupa program bantuan pengembangan institusi yang bertujuan untuk meningkatkan kinerja Perguruan Tinggi Swasta (PTS).

Sejak tahun 2016 Ditjen Kelembagaan IPTEK dan DIKTI merupakan pelaksana pengadaan dan penyerahan barang kepada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi (Yayasan/Perserikatan/Perkumpulan) untuk dimanfaatkan oleh PTS dalam rangka meningkatkan kualitas pembelajaran. Dalam jangka panjang, PP-PTS diharapkan akan membantu pengembangan kualitas PTS dan akan mendorong setiap institusi untuk menyusun rencana program pengembangan untuk peningkatan kualitas PTS berdasarkan pada analisis kebutuhan yang didukung informasi yang akurat, mengacu ke masa depan, dengan memberdayakan setiap jurusan/program studi beserta sumberdayanya sebagai upaya menuju PTS yang lebih sehat.

Pada tahun 2019, PP-PTS dikelompokkan menjadi 3 (tiga) skema, yaitu Skema A, B dan C. PP-PTS Skema B khusus ditujukan untuk peningkatan produktivitas dan relevansi lulusan melalui bantuan sarana untuk penguatan proses pembelajaran dan mutu lulusan. Dengan demikian melalui skema ini PTS diharapkan dapat meningkatkan kualitas dan daya saing lulusannya.

Kami mengharapkan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi untuk berpartisipasi aktif dalam PP-PTS ini. Kami juga menyampaikan terima kasih dan penghargaan kepada tim yang telah menyusun dan merumuskan panduan penyusunan proposal ini dengan memperhatikan dan mempertimbangkan kendala-kendala dan temuan-temuan pada implementasi tahun-tahun sebelumnya serta masukan dari pemangku kebijakan terkait.

Jakarta, Februari 2019
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I. LATAR BELAKANG

Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional, pada Pasal 11 menyatakan bahwa pemerintah dan pemerintah daerah wajib memberikan pelayanan dan kemudahan serta menjamin terselenggaranya pendidikan yang bermutu bagi setiap warga tanpa diskriminasi. Undang-Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi pada pasal 6 butir j menyatakan bahwa pendidikan tinggi diselenggarakan dengan prinsip pemberdayaan semua komponen masyarakat melalui peran serta dalam penyelenggaraan dan pengendalian mutu layanan Pendidikan Tinggi. Direktorat Jenderal Kelembagaan Iptek dan Dikti Kementerian Riset, Teknologi dan Pendidikan Tinggi (Kemenristekdikti) sesuai Peraturan Menteri Riset Teknologi dan Pendidikan Tinggi No. 15 Tahun 2015 tentang Organisasi dan Tata Kelola Kemenristekdikti, mempunyai tugas melakukan pembinaan Kelembagaan Perguruan Tinggi. Pada data PD-Dikti per-Agustus 2018, terdapat 3.256 institusi pendidikan tinggi di bawah Kemenristekdikti yang berbentuk Universitas, Institut, Sekolah Tinggi, Politeknik, dan Akademi, baik yang diselenggarakan oleh Pemerintah maupun oleh masyarakat. Dalam rangka peningkatan kapasitas institusi, pada tahun 2016 Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi (Ditjen Kelembagaan IPTEK dan DIKTI) memberikan bantuan Program Pembinaan Perguruan Tinggi Swasta (PP-PTS) yang diberikan kepada PTS di seluruh Indonesia. PP-PTS berupa program bantuan pengembangan institusi yang bertujuan untuk meningkatkan kinerja Perguruan Tinggi Swasta (PTS).

Pada pelaksanaan program di tahun 2019, PP-PTS dikelompokkan menjadi 3 (tiga) skema, yaitu Skema A, B dan C. PP-PTS Skema B bertujuan untuk meningkatkan produktivitas dan relevansi lulusan melalui bantuan sarana untuk penguatan proses pembelajaran dan kualitas lulusan. PP-PTS Skema B dan C merupakan skema baru yang mulai diluncurkan pada tahun 2019 ini.

Panduan ini disusun untuk menjelaskan lebih lanjut tentang PP-PTS Skema B yang ditujukan untuk PTS yang berada di kluster 3 dan memenuhi persyaratan untuk mengajukan proposal pengembangan. Program pembinaan ini diberikan berdasarkan pada evaluasi proposal atas rencana dan kebutuhan masing-masing PTS. Proposal diusulkan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi untuk penguatan proses pembelajaran dan kualitas lulusan berdasarkan pada analisis kebutuhan dari proses pendidikan yang berlangsung di perguruan tinggi. Analisis kebutuhan tersebut disusun berdasarkan informasi yang akurat, mengacu ke masa depan, dengan memberdayakan setiap jurusan/program studi beserta sumberdayanya sebagai upaya menuju PTS yang lebih sehat dan berkualitas.

Ditjen Kelembagaan IPTEK dan DIKTI berperan sebagai penanggung jawab dan pelaksana PP-PTS. Ditjen Kelembagaan IPTEK dan Dikti melakukan seleksi proposal untuk memberikan bantuan kepada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi berupa barang untuk dimanfaatkan oleh PTS penerima.

II. TUJUAN UMUM DAN DESKRIPSI PROGRAM

A. Tujuan Umum Program

PP-PTS Skema B Tahun 2019 merupakan program bantuan sarana untuk pengembangan institusi yang ditujukan untuk peningkatan produktivitas dan relevansi lulusan melalui penguatan proses pembelajaran dan kualitas lulusan, sehingga dapat meningkatkan kinerja perguruan tinggi swasta.

B. Sasaran

Perguruan Tinggi Swasta di bawah pembinaan Kementerian Riset, Teknologi dan Pendidikan Tinggi yang memenuhi persyaratan yang ditentukan oleh Kementerian Riset, Teknologi dan Pendidikan Tinggi. Perguruan tinggi swasta yang dapat menerima bantuan ini adalah PTS yang berada pada **kluster 3** sesuai Surat Keputusan Direktur Jenderal Kelembagaan, Ilmu Pengetahuan, Teknologi dan Pendidikan Tinggi, Kementerian Riset, Teknologi dan Pendidikan Tinggi **No. 2217/C/KEP/VIII/2018** untuk PT yang berbentuk Universitas, Institut, atau Sekolah Tinggi dan **No. 2189/C/KEP/VIII/2017** untuk PT yang berbentuk Politeknik atau Akademi.

C. Deskripsi Program

Program Pembinaan PTS (PP-PTS) 2019 bersifat bantuan dan merupakan salah satu program pada Ditjen Kelembagaan IPTEK dan DIKTI Kementerian Riset, Teknologi dan Pendidikan Tinggi. Program PP-PTS mencakup semua PTS yang memenuhi persyaratan yang ditentukan oleh Kementerian Riset, Teknologi dan Pendidikan Tinggi. Pada PP-PTS Skema B 2019, pengusul proposal adalah Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Seleksi dan pelaksanaan kegiatan PP-PTS dilakukan oleh Ditjen Kelembagaan IPTEK dan DIKTI.

Ditjen Kelembagaan IPTEK dan DIKTI merupakan pelaksana pengadaan dan penyerahan barang kepada Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi untuk dimanfaatkan oleh PTS yang diusulkan dalam proposalnya. Pemantauan dan evaluasi akan dilakukan oleh Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi dengan melibatkan pihak Inspektorat Jenderal Kementerian Riset, Teknologi dan Pendidikan Tinggi. Pengalokasian anggaran untuk setiap PTS akan dilakukan oleh Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi.

Program ini bertujuan memfasilitasi dan mendorong perguruan tinggi swasta untuk penguatan proses pembelajaran dan peningkatan kualitas lulusan. Secara khusus PP-PTS Skema B ditujukan untuk peningkatan produktivitas dan relevansi lulusan melalui penguatan proses pembelajaran dan kualitas lulusan melalui pemanfaatan sumber daya secara hemat dan bertanggung-jawab. Beberapa perbaikan yang diharapkan antara lain ditandai dengan peningkatan jumlah lulusan, penurunan waktu penyelesaian tugas akhir, penurunan rata-rata masa studi lulusan, penurunan waktu tunggu lulusan untuk mendapat pekerjaan, melalui optimalisasi pemanfaatan sumberdaya, baik yang menyangkut sumberdaya manusia, sumberdaya fisik (tingkat utilisasi ruangan dan peralatan), sumberdaya uang (penekanan unit cost), dan sebagainya.

III. BESARAN DANA PP-PTS

Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi mengajukan proposal sesuai dengan **kebutuhan**, **kapasitas** dan **kondisi** PTS yang **didasarkan pada rencana pengembangan PTS**. Untuk PP-PTS ini, **satu proposal hanya berisi usulan untuk satu PTS**. Anggaran yang diajukan dalam proposal harus didasari pertimbangan yang kuat serta mencerminkan **kebutuhan** dan **kemampuan** institusi untuk mengelolanya dengan penuh tanggung jawab.

A. Pagu Dana

Besarnya pagu dana maksimum PP-PTS Skema B adalah **Rp 1,5 Miliar**.

B. Penggunaan Dana

Bantuan PP-PTS Skema B 2019 diberikan dalam bentuk barang yang berupa peralatan laboratorium dan peralatan pendidikan yang terkait dengan peningkatan produktivitas dan relevansi lulusan. Anggaran yang diajukan dalam proposal **harus** didasari pertimbangan yang kuat serta mencerminkan **kebutuhan** dan **kemampuan** institusi untuk mengelola dengan penuh tanggung jawab.

1. Bantuan PP-PTS dalam bentuk barang

Usulan belanja barang harus memenuhi ketentuan sebagai berikut:

- a. Barang yang diusulkan hanya barang yang tersedia dalam daftar barang yang disajikan dalam **Lampiran C** pada Panduan Penyusunan Proposal ini;
- b. Usulan pengadaan barang harus dilengkapi dengan rincian barang, jumlah unit, Rencana Anggaran Biaya (RAB), dan spesifikasi teknis;
- c. RAB harus disusun berdasarkan harga pasar yang dapat dipertanggungjawabkan, dilengkapi data dukung dan brosur;
- d. Usulan disusun sesuai dengan paket masing-masing.
- e. PTS yang diusulkan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi harus memiliki fasilitas pendukung yang memadai dan layak untuk pemanfaatan barang yang akan diterima, diantaranya ruang, daya listrik dan lainnya;
- f. Barang yang diusulkan harus sesuai dengan rencana program pengembangan yang disampaikan pada proposal.
- g. Barang yang dapat diusulkan terdiri dari:
 - I. **Peralatan laboratorium:** dapat mencakup peralatan untuk Laboratorium instrumentasi dan Analisis, Laboratorium OSCE, Laboratorium Teknik, Laboratorium Microteaching, dan Laboratorium Bahasa. Usulan barang harus relevan dengan capaian pembelajaran program pada pendidikan akademik/vokasi/profesi dan/atau penelitian mahasiswa pada prodi yang akan ditingkatkan mutunya;
 - II. **Peralatan Teknologi Informasi, Desain dan Komunikasi:** relevan dengan peningkatan produktivitas dan relevansi lulusan.

IV. PERSYARATAN INSTITUSI PENGUSUL

Penerima bantuan ini adalah Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Persyaratan kelayakan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi yang dapat mengajukan proposal adalah sebagai berikut:

- i. Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi yang telah disahkan oleh kementerian Hukum dan Hak Asasi Manusia;
- ii. Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi mengusulkan PTS/Program Studi yang memenuhi persyaratan:
 - a. Merupakan PT yang berada pada **Kluster 3** sesuai dengan Surat Keputusan Direktur Jenderal Kelembagaan, Ilmu Pengetahuan, Teknologi dan Pendidikan Tinggi, Kementerian Riset, Teknologi dan Pendidikan Tinggi **No. 2217/C/KEP/VIII/2018** untuk PT yang berbentuk Universitas, Institut, atau Sekolah Tinggi dan **No. 2189/C/KEP/VIII/2017** untuk PT yang berbentuk Politeknik atau Akademi;
 - b. Akreditasi program studi yang diusulkan **minimal B** dan masih berlaku;
 - c. Akreditasi PT **minimal B/Baik Sekali** pertanggal 1 Januari 2019 dan masih berlaku minimal sampai 1 Juli 2019;
 - d. PT telah melakukan pelaporan data kegiatan belajar mengajar melalui Pangkalan Data Pendidikan Tinggi dengan persentase 100% untuk TA 2017-1 dan 2017-2;
 - e. Tidak sedang dikenakan sanksi oleh Direktorat Jenderal Kelembagaan Ilmu Pengetahuan dan Pendidikan Tinggi berdasarkan Permenristekdikti No. 51 tahun 2018 tentang Pendirian, Perubahan, Pembubaran Perguruan Tinggi Negeri, Dan Pendirian, Perubahan, Pencabutan Izin Perguruan Tinggi Swasta;
 - f. Tidak sedang dalam proses pengajuan perubahan bentuk perguruan tinggi dan perubahan badan hukum;
- iii. Tidak sedang memiliki masalah internal dan tidak dalam sengketa hukum.

V. PENGAJUAN, SELEKSI DAN KRITERIA SELEKSI PROPOSAL

A. Pengajuan Proposal

- i. Proposal diusulkan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Setiap proposal berisi usulan untuk 1 (satu) PTS yang berada di bawah Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. PTS melakukan pendaftaran akun melalui website <http://pppts.ristekdikti.go.id>.
- ii. Direktorat Pembinaan Kelembagaan melakukan verifikasi eligibilitas (pemenuhan syarat) PTS yang diusulkan dan keabsahan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi. Apabila PTS dan Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi dinyatakan sah, maka PTS diberikan akun untuk menyampaikan proposal PP-PTS dalam bentuk elektronik melalui website.
- iii. Proposal disampaikan dalam bentuk elektronik oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi melalui website <http://pppts.ristekdikti.go.id>.

B. Seleksi Proposal

Proses seleksi akan dilakukan dalam tahapan: (1) Seleksi Administratif dilakukan oleh Direktorat Pembinaan Kelembagaan Perguruan Tinggi, (2) Seleksi Substantif dilakukan oleh *reviewer* independen, dan (3) Presentasi oleh PTS calon penerima bantuan untuk evaluasi kelayakan program, finalisasi program dan anggaran. Mekanisme seleksi proposal dilakukan secara akuntabel, objektif, dan transparan.

Evaluasi proposal dititikberatkan pada persyaratan administrasi dan **kemampuan pengusul dalam mengaitkan antara program pengembangan yang direncanakan dengan hasil evaluasi diri yang komprehensif dan kebutuhan sumberdaya.**

C. Proses Seleksi Proposal

Seleksi proposal dilakukan dalam tahapan berikut:

1. Evaluasi administratif terhadap pemenuhan persyaratan, kesesuaian format proposal dengan Panduan Penyusunan Proposal PP-PTS Tahun 2019 dilakukan oleh Direktorat Pembinaan Kelembagaan Perguruan Tinggi, dan verifikasi oleh LLDIKTI ;
2. Evaluasi substantif dilakukan oleh *reviewer* independen. Satu proposal dinilai oleh sekurang-kurangnya dua orang *reviewer* yang ditunjuk. *Reviewer* juga akan menelaah proposal pada aspek program, kesesuaian jenis barang dengan kebutuhan pembelajaran pada program studi yang diusulkan. Evaluasi juga memperhatikan kapasitas PTS dalam rencana pengelolaan dan pemanfaatan bantuan yang diterima berdasarkan uraian yang diberikan dalam proposal dan data-data lain terkait dengan PTS/Program Studi yang diusulkan;
3. Presentasi: Pengusul yang lolos tahap evaluasi substantif akan diminta untuk mempresentasikan usulannya. Pada tahap ini akan dilakukan juga evaluasi kelayakan program, finalisasi usulan kebutuhan dan anggaran.

D. Kriteria Seleksi Proposal

Proposal yang memenuhi persyaratan administrasi sesuai dengan persyaratan umum institusi pengusul, akan diseleksi berdasarkan kriteria berikut:

RENCANA PENGEMBANGAN STRATEGIS PERGURUAN TINGGI (20%)

Penilaian dilakukan terhadap kelengkapan dan kejelasan arah pengembangan institusi yang dinyatakan dalam pernyataan visi, misi, tujuan institusi, dan program strategis serta indikator yang akan dicapai.

LAPORAN EVALUASI DIRI (30%)

Penilaian dilakukan terhadap kemampuan melakukan evaluasi diri yang didukung dengan data yang lengkap, relevan dan akurat untuk mengidentifikasi permasalahan dan kebutuhan institusi dalam peningkatan mutu pembelajaran dan kualitas lulusan dalam upaya untuk meningkatkan produktivitas dan relevansi lulusan berdasarkan rencana pengembangan PTS. Kelengkapan data profil perguruan tinggi mencakup antara lain profil mahasiswa, kinerja penyelenggaraan pendidikan, profil lulusan, profil SDM, profil sarana dan prasarana. Selain itu juga dilakukan penilaian terhadap uraian dalam proposal terkait dengan analisis

penetapan program studi yang diusulkan dari perspektif badan hukum nirlaba penyelenggara perguruan tinggi.

PROGRAM PENINGKATAN PRODUKTIVITAS DAN RELEVANSI LULUSAN (50%)

Penilaian dilakukan terhadap program pengembangan yang diusulkan untuk menyelesaikan masalah yang teridentifikasi dari hasil evaluasi diri dan sejalan dengan program strategis untuk mendukung peningkatan mutu program studi yang dipilih. Penilaian juga mencakup kesesuaian program pengembangan dengan target indikator yang akan dicapai, dan usulan pengadaan, ketepatan memilih jenis dan spesifikasi usulan pengadaan barang yang tercantum pada Panduan Penyusunan Proposal PP-PTS Skema B Tahun 2019.

VI. FORMAT PROPOSAL

Setiap proposal yang disampaikan oleh badan hukum nirlaba penyelenggara perguruan tinggi berisi usulan untuk satu PTS. Proposal ditulis dalam **Bahasa Indonesia yang baik dan benar**, menggunakan *font Times New Roman* 12 point, dan spasi tunggal. Penulisan Proposal harus mengikuti struktur dan format berikut:

1. Halaman judul/cover

Memuat informasi tentang nama institusi, seperti contoh pada **Lampiran A**.

2. Halaman identifikasi dan pengesahan

Halaman ini berisi informasi ringkas tentang nama dan alamat lengkap badan hukum nirlaba penyelenggara perguruan tinggi dan PTS, nama dan alamat e-mail Ketua Pelaksana program di tingkat institusi, seperti contoh pada **Lampiran A**.

3. Daftar isi

4. Ringkasan eksekutif (maksimum 1 halaman)

Memuat intisari Proposal, khususnya program peningkatan kualitas pendidikan dan keterkaitannya dengan usulan pengadaan yang disampaikan.

5. Bab 1: Rencana Strategis Pengembangan Perguruan Tinggi

Bagian ini memuat informasi ringkas tentang rencana strategis pengembangan institusi yang saat ini dijalankan dan dijadikan landasan untuk penyusunan rencana program pengembangan. Informasi dimaksud paling tidak memuat jangka waktu renstra, visi dan misi institusi, strategi utama dan program pengembangan yang telah ditetapkan serta indikator kinerja untuk mengukur ketercapaian renstra paling tidak memuat indikator kinerja seperti disajikan pada Tabel 1 berikut ini. Indikator kinerja dilengkapi dengan nilai baseline (pada tahun Renstra mulai berlaku) dan target kinerja selama masa berlaku Renstra.

Tabel 1. Nilai baseline indikator kinerja PT dan targetnya

Indikator Kinerja	Baseline	Target Tahun ...	Target Tahun ...	Target Tahun ...	Target Tahun ...	Target Tahun ...
Status Akreditasi institusi						
Prodi dengan akreditasi A per total prodi						
Prodi dengan akreditasi B per total prodi						
Rata-rata Lama Studi Lulusan						

Indikator Kinerja	Baseline	Target Tahun ...	Target Tahun ...	Target Tahun ...	Target Tahun ...	Target Tahun ...
Tingkat PT Prodi A Prodi B Dst						
Rasio jumlah lulusan terhadap input Tingkat PT Prodi A Prodi B Dst						
Rata-rata IPK Lulusan Tingkat PT Prodi A Prodi B Dst						
Rata-rata lama penyelesaian tugas akhir Tingkat PT Prodi A Prodi B Dst						
Rata-rata masa tunggu pekerjaan pertama Lulusan Tingkat PT Prodi A Prodi B Dst						
Persentase jumlah mahasiswa yang terlibat dalam penelitian dosen Tingkat PT Prodi A Prodi B Dst						
Jumlah publikasi pada jurnal nasional Tingkat PT Prodi A Prodi B Dst						
Jumlah publikasi pada jurnal internasional Tingkat PT Prodi A Prodi B Dst						
Indikator lainnya sesuai dengan Renstra masing-masing PT						

6. BAB 2: Evaluasi Diri Institusi

Bagian ini memuat evaluasi diri institusi yang didukung dengan data yang lengkap, relevan dan akurat untuk mengidentifikasi permasalahan dan kebutuhan institusi dalam peningkatan mutu pembelajaran dan kualitas lulusan dalam upaya untuk meningkatkan produktivitas dan relevansi lulusan berdasarkan rencana pengembangan PTS. Kelengkapan data profil perguruan tinggi mencakup antara lain profil mahasiswa, kinerja penyelenggaraan

pendidikan, profil lulusan, profil SDM, kinerja penelitian, profil sarana dan prasarana. Pada bagian ini juga harus disampaikan hasil pemanfaatan sumber daya yang diperoleh dari program bantuan PP-PTS/PHP-PTS yang pernah diterima. Berdasarkan hasil evaluasi diri tersebut, uraikan justifikasi dan perspektif badan hukum nirlaba penyelenggara perguruan tinggi dalam penetapan program studi yang diusulkan untuk ditingkatkan mutunya. Untuk melakukan evaluasi diri sekurang-kurangnya dapat digunakan data pendukung dengan menggunakan format pada **Lampiran B**.

Setelah Badan Hukum Nirlaba menetapkan prodi yang diusulkan untuk ditingkatkan kualitasnya, maka perlu disampaikan evaluasi diri lebih mendalam untuk prodi yang diusulkan tersebut pada aspek kinerja pendidikan yang **belum** disampaikan pada evaluasi diri institusi **sekurang-kurangnya** dalam hal masa penyelesaian tugas akhir, masa tunggu lulusan, kinerja laboratorium yang mempunyai relevansi dengan pembelajaran.

7. Bab 3: Gambaran Umum Strategi Peningkatan Produktivitas dan Relevansi Lulusan

Bagian ini memuat 2 (dua) aspek, yakni: 1) gambaran umum program-program strategis institusi serta kendala-kendala yang dihadapi untuk meningkatkan produktivitas dan relevansi lulusannya; dan 2) uraian tentang permasalahan yang dihadapi oleh program studi yang diusulkan dalam meningkatkan produktivitas dan relevansi lulusan serta program yang direncanakan untuk mengatasinya.

Gunakan **Table-2** berikut untuk merangkum permasalahan yang dihadapi program studi dan rencana penyelesaiannya.

Tabel 2. Gejala/fenomena masalah, akar permasalahan dan penyelesaian alternatif

Gejala/Fenomena Masalah			Akar Permasalahan	Penyelesaian Alternatif	
No.	Uraian Masalah	Hal.		No.	Uraian Penyelesaian
1	2	3	4	5	6
1.				1.1	
2.				1.2	
...				1...	
N				1.n	
1.				2.1	
2.				2.2	
....				2...	
N				2.n	
1.				3.1	
...				3....	
N				3.n	

Keterangan :

- Kolom 2, diisi dengan gejala/fenomena masalah yang berhasil diidentifikasi
- Kolom 3, diisi dengan nomor halaman dimana gejala/fenomena masalah tersebut dijelaskan/diuraikan, atau nomor halaman dimana data pendukung (tabel) dari masalah tersebut berada.
- Kolom 4, diisi dengan akar permasalahan yang berhasil diidentifikasi berdasarkan masalah-masalah yg ada di kolom 2
- Kolom 6, diisi dengan penyelesaian-penyelesaian alternatif yang diperkirakan dapat menyelesaikan akar masalah

8. Bab 4: Program Pengembangan Peningkatan Produktivitas dan Relevansi Lulusan

Bagian ini berisi program pengembangan yang paling efisien dan efektif untuk dijalankan diantara penyelesaian alternatif yang disampaikan pada **Tabel 2** Bab 3. Program studi yang menjadi sasaran peningkatan kualitas pendidikan harus disampaikan secara jelas. Program pengembangan ini dapat terdiri dari beberapa aktivitas. Setiap aktivitas disusun sesuai struktur berikut:

- Judul program pengembangan/aktivitas:
- Latar belakang:

Jelaskan masalah yang ingin diatasi dengan mengacu pada hasil evaluasi diri institusi pada Bab 2 dan rancangan program pengembangan pada Bab 3.

- Tujuan:

Jelaskan tujuan yang ingin dicapai dengan program pengembangan/aktivitas yang diusulkan. Tujuan harus dapat dijabarkan menjadi indikator kinerja yang terukur.

- Mekanisme/tahapan pelaksanaan:

Jelaskan tahapan yang akan dilaksanakan untuk menyelesaikan masalah dan mencapai tujuan dengan memanfaatkan sumber daya yang diusulkan.

- Kebutuhan sumber daya:

Jelaskan sumberdaya yang dibutuhkan untuk pelaksanaan program pengembangan/aktivitas. Kebutuhan sumberdaya disusun dengan menggunakan **Tabel 3** berikut:

Tabel 3. Sumberdaya yang diperlukan untuk pelaksanaan Program Pengembangan/aktivitas

Jenis Sumberdaya*)	Perkiraan Biaya	Peruntukan/Pemanfaatan
Peralatan Lab.....		
Peralatan Teknologi Informasi, Desain dan Komunikasi		
Total		

*)Diisi jenis paket, bukan rincian jenis peralatan.

- Indikator Kinerja:

Sajikan indikator kinerja yang akan dicapai dengan program ini. Indikator kinerja merupakan alat ukur pencapaian tujuan.

Tabel 4. Indikator kinerja program pengembangan yang diusulkan

Indikator Kinerja	Baseline (per September 2018)	Target September 2019	Target September 2020	Cara Pengukuran Indikator

- Program studi sasaran:
Sebutkan program studi yang menjadi sasaran program pengembangan.
- Penanggung jawab program/kegiatan:

8. Bab 4: Usulan Belanja Barang dan Rencana Anggaran Biaya

Bab ini berisi usulan belanja barang dan Rencana Anggaran Biaya (RAB). RAB yang disajikan dalam format pada **Tabel 5** merupakan usulan anggaran total institusi yang didasarkan atas usulan anggaran untuk belanja barang-

Usulan belanja barang harus disusun sesuai dengan format seperti tertera pada **Tabel 6-7** di bawah ini. Barang yang dapat diusulkan pada proposal ini hanya barang yang disajikan pada **Lampiran C** pada panduan ini.

Tabel 5. Rencana Anggaran Belanja PP-PTS Tahun Anggaran 2019

No.	Komponen Biaya	Perhitungan Biaya Tahun 2019		
		Volume	Harga Satuan Paket (Rp.)*	Jumlah Biaya (Rp.)
A.	Pengadaan Alat Laboratorium Instrumentasi dan Analisis	1	Paket	
B.	Pengadaan Alat Laboratorium Teknik	1	Paket	
C.	Pengadaan Alat Laboratorium OSCE	1	Paket	
D.	Pengadaan Alat Laboratorium Microteaching	1	Paket	
E.	Pengadaan Alat Laboratorium Bahasa	1	Paket	
F.	Pengadaan Peralatan Teknologi Informasi, Desain dan Komunikasi	1	Paket	
TOTAL DANA PP-PTS YANG DIUSULKAN				

*)Harga paket pengadaan dihitung berdasarkan spesifikasi rinci pada Tabel 6-7.

Tabel 6. Spesifikasi Rinci untuk Peralatan Laboratorium Instrumentasi dan Analisis/Teknik/ OSCE /Microteaching/ Bahasa Tahun 2019

Nama Peralatan Laboratorium *)	Spesifikasi Teknis	Jumlah	Harga Satuan	Perkiraan Biaya (ribuan rupiah)	Rencana Penempatan	Rencana Pemanfaatan
1. ...						
2. ...						
n. ...						
Total						

***) Gunakan format terpisah untuk setiap usulan kelompok peralatan laboratorium**

Tabel 7. Spesifikasi Rinci untuk Peralatan Teknologi Informasi, Desain dan Komunikasi Tahun 2019

Nama Peralatan	Spesifikasi Teknis	Jumlah	Harga Satuan (ribuan rupiah)	Perkiraan Biaya (ribuan rupiah)	Rencana Penempatan	Rencana Pemanfaatan
1. ...						
2. ...						
n. ...						
Total						

9. Lampiran-lampiran

Lampiran berisi kelengkapan proposal yaitu:

1. Fotokopi Akta Notaris Pendirian Badan Penyelenggara dari PTS beserta semua perubahan yang telah dilakukan
2. Fotokopi SK Pendirian Awal PT dan perubahannya dari Kementerian urusan pendidikan tinggi
3. Fotokopi Akta Pengesahan badan hukum nirlaba penyelenggara perguruan tinggi yang telah dilegalisir oleh Kemenkumham,
4. Bukti pelaporan PDDIKTI 2017-1 dan 2017-2,
5. Fotokopi sertifikat akreditasi program studi yang masih berlaku.
6. Fotokopi sertifikat akreditasi institusi yang masih berlaku.
7. Surat pernyataan Rektor/Direktur/Ketua bahwa PTS tidak menyelenggarakan program yang bertentangan dengan kebijakan Kemenristekdikti seperti "kelas jauh", ijazah palsu, dan menyelenggarakan program tanpa izin, dll.
8. Surat pernyataan Rektor/Direktur/Ketua bahwa **PTS tidak sedang dalam proses pengajuan perubahan bentuk perguruan tinggi dan perubahan badan hukum nirlaba/yayasan.**
9. Surat pernyataan Rektor/Direktur/Ketua bahwa PTS tidak sedang memiliki masalah internal dengan yayasan dan tidak dalam sengketa hukum.

10. Surat Pernyataan bersedia menerima hibah yang ditandatangani oleh Pimpinan Badan Hukum Penyelenggara.

VII. ADMINISTRASI PROPOSAL

Proposal ditulis dengan ukuran A4 dengan font *Times New Roman* ukuran 12pt, 1 spasi dengan format sampul depan seperti pada **Lampiran A**. Proposal dalam bentuk dokumen elektronik disampaikan oleh Badan Hukum Nirlaba Penyelenggara Perguruan Tinggi melalui <http://pppts.ristekdikti.go.id>. Tatacara pemasukan proposal dapat diunduh pada <http://pppts.ristekdikti.go.id>. Jadwal pemasukan dan proses seleksi proposal sebagai berikut:

No	Kegiatan	Jadwal
1	Pengumuman dan Registrasi	18 Maret 2019
2	Batas akhir unggah proposal	26 April 2019
3	Evaluasi administrasi	5 Mei 2019
4	Evaluasi dokumen	6-15 Mei 2019
5	Presentasi	22-25 Mei 2019
6	Penetapan penerima hibah	27 Mei 2019
8	Pelaksanaan PP-PTS	Juni s.d Nopember 2019
9	Monev PP-PTS	Oktober s.d. Nopember 2019
10	Laporan Akhir PP-PTS	Nopember 2019



LAMPIRAN A

ADMINISTRASI

PROPOSAL

Format Sampul Depan



**PROPOSAL
PROGRAM PEMBINAAN PTS
Skema B
Tahun Anggaran 2019**



Perguruan Tinggi:
Badan Hukum Nirlaba Penyelenggara PT

**Direktorat Jenderal Kelembagaan Ilmu Pengetahuan, Teknologi, dan Pendidikan Tinggi
Kementerian Riset dan Pendidikan Tinggi
2019**

Halaman Identifikasi Dan Pengesahaan

1. Nama Badan Hukum Nirlaba Penyelenggara PT : _____
2. Alamat Badan Hukum Nirlaba Penyelenggara PT : _____

3. Penanggung Jawab¹ : _____
5. Ketua Pelaksana²
 N a m a : _____
 Alamat : _____
 Telepon Kantor : _____
 Telepon *Cellular*(WA) : _____
 Fax : _____
 e-mail : _____
6. Nama Perguruan Tinggi : _____
 Apakah PT pernah berubah bentuk: ya/tidak
 (diisi jika PT pernah berubah bentuk)
 Bentuk PT Sebelumnya : _____
 Tahun Perubahan : _____
7. Alamat Perguruan Tinggi : _____

8. Program Studi yang diusulkan untuk ditingkatkan mutunya : 1. _____
 2. _____
 3. _____

Mengetahui,
 <Rektor/Direktur/Ketua>

< Tempat, tanggal.....>
 Penanggung Jawab,
 <Ketua Badan Hukum Nirlaba
 Penyelenggara PT>

(.....)

(.....)

¹Penanggung jawab adalah Ketua Badan Hukum Nirlaba Penyelenggara PT.

²Ketua Pelaksana adalah ketua gugus tugas untuk implementasi hibah yang ditunjuk oleh Pemimpin Badan Hukum Nirlaba Penyelenggara PT.



LAMPIRAN B

FORMAT PROFIL PERGURUAN TINGGI

LAMPIRAN B

TABEL-TABEL INI UNTUK DIMASUKKAN PADA BAB 2 PROPOSAL

A. MAHASISWA

Tabel 1. Profil Penerimaan Mahasiswa Baru 3 Tahun Terakhir

No	Program Studi	Program Pendidikan*	Tahun Akademik	Pendaftar	Diterima	Keketatan	Rerata Keketatan 3 Tahun
				1	2	3=1/2	4
1			2015/2016				
			2016/2017				
			2017/2018				
2			2015/2016				
			2016/2017				
			2017/2018				
dst							

- Program pendidikan meliputi Diploma tiga, Sarjana Terapan, Magister terapan, Sarjana, Magister, Profesi

Tabel 2. Profil Mahasiswa Aktif Tahun 2017/2018

No	Program Studi	Program Pendidikan*	Jumlah Mahasiswa Aktif	Rerata IPK Mahasiswa Aktif
Vokasi				
1				
2				
3				
n				
Akademik				
1				
2				
3				
n				
Profesi				
1				
2				
3				
n				

- Program pendidikan meliputi Diploma tiga, Sarjana Terapan, Magister terapan, Sarjana, Magister, Doktor, Profesi

Tabel 3. Data Akreditasi Program Studi

No	Program Studi	Program Pendidikan	Peringkat Akreditasi	SK Akreditasi	Masa berlaku Akreditasi
1					
2					
3					
dst					

- Program pendidikan meliputi Diploma tiga, Sarjana Terapan, Magister terapan, Sarjana, Magister, Doktor, Profesi

B. LULUSAN

Tabel 4. Jumlah Lulusan tiga tahun terakhir

Tahun Lulus	Vokasi			Akademik			Profesi	TOTAL
	Diploma tiga	Sarjana Terapan	Magister Terapan	Sarjana	Magister	Doktor		
2015/2016								
2016/2017								
2017/2018								
TOTAL								

Tabel 5. Profil Lulusan Berdasarkan IPK dan Tahun Lulus

No	Program Studi	Program Pendidikan*	Tahun	IPK						Jumlah Lulusan	Rerata IPK
				IPK <3		3≤IPK<3,5		IPK ≥ 3,5			
				Jml	%	Jml	%	Jml	%		
1	2	3	4	5	6=5/11	7	8=7/11	9	10=9/11	11=5+7+9	12
1			2015/2016								
			2016/2017								
			2017/2018								
			Total								
2			2015/2016								
			2016/2017								
			2017/2018								
			Total								
n			2015/2016								
			2016/2017								
			2017/2018								
			Total								

- Program pendidikan meliputi Diploma tiga, Sarjana Terapan, Magister terapan, Sarjana, Magister, Doktor, Profesi

Tabel 6. Rerata masa studi lulusan tiga tahun terakhir.

No	Program Studi	Program Pendidikan*	Rerata masa studi lulusan (tahun)			Rerata Lama Studi (tahun)	Jumlah Lulusan
			2015/2016	2016/2017	2017/2018		
1							
2							
3							
Dst							
Total Lulusan							

- Program pendidikan meliputi Diploma tiga, Sarjana Terapan, Magister terapan, Sarjana, Magister, Doktor, Profesi

Tabel 7. Profil produktivitas program studi selama 3 tahun terakhir

No	Program Studi	Program Pendidikan	2015/2016			2016/2017			2017/2018		
			Jumlah Mhs baru	Total lulusan	Produktivitas(%)	Jumlah Mhs baru	Total lulusan	Produktivitas(%)	Jumlah Mhs baru	Total lulusan	Produktivitas(%)
			1	2	3=2/1	4	5	6=5/4	7	8	9=8/7
1											
2											
3											
dst											
PERGURUAN TINGGI											

C. SUMBERDAYA MANUSIA

Tabel 8. Profil Dosen Tetap berdasarkan Program pendidikan, usia dan jabatan fungsional

Program Studi	Jabatan	Kelompok Umur (tahun)															Jumlah
		< 31			31 – 40			41 - 50			51 - 60			> 60			
		S	M	D	S	M	D	S	M	D	S	M	D	S	M	D	
Prodi 1	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 2	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 3	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Dst	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
TOTAL																	

*S= Sarjana, M= Magister, D= Doktor

Tabel 9. Profil Dosen Tidak Tetap berdasarkan Program Pendidikan, usia dan jabatan fungsional

Program Studi	Jabatan	Kelompok Umur (tahun)															Jumlah
		< 31			31 – 40			41 - 50			51 - 60			> 60			
		S	M	D	S	M	D	S	M	D	S	M	D	S	M	D	
Prodi 1	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 2	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
Prodi 3	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
dst	Belum punya jabatan																
	Ass. Ahli																
	Lektor																
	L. Kepala																
	Guru Besar																
TOTAL																	

D. FASILITAS

Tabel 10. Profil Sarana Ruang Kelas

No	Jenis Ruang Kelas	Jumlah Ruang Kelas	Total Luas Ruang kelas	Kepemilikan		Jumlah penggunaan		Fasilitas Pengajaran yang terdapat pada ruang tersebut			
				Sendiri	sewa	Shift/hari	hari/minggu	Nama/Jenis Fasilitas	Jumlah	Kondisi	
										Baik	Rusak
1	2	3	4	5	6	7	8	9	10	11	12
1	kapasitas mahasiswa <= 40										
2	kapasitas mahasiswa > 40										

Tabel 11. Profil Sarana Ruang Laboratorium

No	Nama Laboratorium	Total Luas Ruang Laboratorium (m ²)	Kepemilikan (beri tanda √)		Jumlah Penggunaan		Program Studi Pengguna
			sendiri	sewa	Shift/ hari	hari/minggu	
1	2	3	4	5	6	7	8
1							
2							
3							
dst							

A. PENYELENGGARAAN KINERJA PENDIDIKAN **PROGRAM STUDI** YANG DIUSULKAN

Tabel 12. Laboratorium yang digunakan oleh Prodi yang diusulkan

No	Nama Laboratorium	Fasilitas Praktikum yang terdapat pada ruang tersebut		Nama Praktikum	Program Studi	Program Pendidikan (DIII/ DIV/ S1/ Profesi/ S2/ S3)
		Nama/Jenis Fasilitas	Jumlah			
1	2	3	4	5	6	7
1						
2						
3						
dst						

Tabel 13. Pelaksanaan Praktikum Tahun Akademik 2017/2018

No	Program Studi	Mata Praktikum	Petunjuk Praktikum (Ada/Tidak Ada)	Jumlah Topik		Judul Topik yang belum terlaksana
				Yang direncanakan	Terlaksana	
1	2	3	4	5	6	7
1						
2						
3						
Dst						

Tabel 14. Profil Penyelenggaran Proses Pendidikan Untuk Tahun Akademik 2017/2018

No	Nama Program Studi	Tahun Akademik	% Kehadiran Dosen di kelas		% Kehadiran Mahasiswa		% Distribusi Nilai Mata Kuliah/Praktikum				
			Ganjil	Genap	Ganjil	Genap	A	B	C	D	E
1	2	3	4	5	6	7	8	9	10	11	12
1		2015/2016									
		2016/2017									
		2017/2018									
		Rata rata 3 tahun									
2		2015/2016									
		2016/2017									
		2017/2018									
		Rata rata 3 tahun									
Dst.											

Keterangan

- Total isian kolom 6, 7, 8, 9 dan 10 harus sama dengan 100%

Tabel 15. Profil Lulusan berdasarkan Tahun Lulus dan Lama Penyelesaian Tugas Akhir atau Tesis 3 Tahun Terakhir.

No	Program Studi	Tahun Lulus	Lama Penyelesaian Tugas Akhir/ Tesis						Total Lulusan	Lama Tugas Akhir rata-rata (bulan)	
			≤ 1 semester		1- 2 semester		> 2 semester				
			Jumlah Lulusan	%	Jumlah Lulusan	%	Jumlah Lulusan	%			
1	2	3	4	5	6	7	8	9	10	11	
1		2015/2016									
		2016/2017									
		2017/2018									
		Total									
2		2015/2016									
		2016/2017									
		2017/2018									
		Total									
Dst											

Keterangan :

- Lulusan yg penyelesaian tugas akhir > 1 semester masuk dalam kelompok 1 – 2 semester
- Kolom 10 adalah jumlah dari kolom 4, kolom 6, kolom 8
- Kolom 5 diisi prosentase antara kolom 4 dengan kolom 10
- Kolom 7 diisi prosentase antara kolom 6 dengan kolom 10
- Kolom 9 diisi prosentase antara kolom 8 dengan kolom 10
- Kolom 10 dalam satuan bulan

Tabel 16. Profil Lulusan Berdasarkan Tahun Lulus Dan Waktu Tunggu Untuk Mendapatkan Pekerjaan Pertama

No	Program Studi	Tahun Lulus	Waktu Tunggu untuk mendapatkan pekerjaan						Total Lulusan	Waktu Tunggu rata-rata (bulan)	Keterangan
			≤ 6 bulan		6 - 12 bulan		> 12 bulan				
			Jumlah	%	Jumlah	%	Jumlah	%			
1	2	3	4	5	6	7	8	9	10	11	Cantumkan Laman yang memuat informasi hasil trecare Study
1		2015/2016									
		2016/2017									
		2017/2018									
		Total									
2		2015/2016									
		2016/2017									
		2017/2018									
		Total									
Dst											

Keterangan :

- Lulusan yang waktu tunggu lebih dari 6 bulan masuk dalam kelompok 6 – 12 bulan
- Kolom 8 adalah jumlah dari kolom 2, kolom 4, kolom 6
- Kolom 3 diisi prosentase antara kolom 2 dengan kolom 8
- Kolom 5 diisi prosentase antara kolom 4 dengan kolom 8
- Kolom 7 diisi prosentase antara kolom 6 dengan kolom 8
- Kolom 9 diisi dengan satuan bulan



LAMPIRAN C

DAFTAR PERALATAN YANG DAPAT DIUSULKAN

LAMPIRAN C

SPESIFIKASI RINCI BARANG

A. PERALATAN LABORATORIUM INSTRUMENTASI DAN ANALISIS

No.	Nama Barang	Spesifikasi	Gambar
1.	Autoclave	a Electromechanical lock system, Dual-sensing interlock mechanism, Pulse exhaust system, Memory Function, Process status display Outer Dimensions WDH (mm) : approx. 547 X 532 X 1046 Chamber Size (Volume) : min. 300f x 710H (min. 54.2 Liter) Effective capacity : min. 50 Liter Power source : 220V, 50/ 60 Hz Power consumption: min. 2.0 kW Net Weight (Approx.) : 57 Kg Chamber Material : Stainless Steel (SUS304) Sterilization temperature range : approx. 105_C to 135_C Maximum allowable pressure (Gauge pressure) : approx. 0.255 Mpa Temperature display range : approx. 5_C to 137_C Warming temperature range : approx. 45_C to 80_C Sterilization timer : approx. 1 to 250 minutes Pressure gauge : approx. 0 to 0.4 Mpa Selective mode (cycle) : Agar sterilization (with Warming) : Preparation -- Heating -- Sterilization -- Exhaust (P0, P1, or P2) -- Warming - Completion; Liquid sterilization : Preparation -- Heating -- Sterilization -- Exhaust (P0, P1, or P2) - Completion; Sterilization of solid/ medical equipment : Preparation -- Heating -- Sterilization -- Exhaust (Forced) - Completion Safety devices/ warning alarm : Double sensing interlock mechanism, Over-pressure power cut-offm, Over-temperature power cut-off, Heater malfunction checker, Temperature sensor wire breakage detector, Securely closed lid check function, Excess cooling check function, Exhaust bottle ready-to-use check system, Lack-of-water prevention device, Power failure check function, Electric leakage breaker and over current detector Pressure safety valve, Product are manufactured by the company with ISO 9001/ 13485 and ISO 14001 b Type : Vertical; Dimensions : 600 mm x 1090 mm x 450 mm; Net weight: 72 kg; Electrical: 2900 watt, 13 A, 230 V; Chamber size: 300 mm x 710 mm; Chamber capacity: 50 liter; Water consumption / cycle: 1000 - 1200 cc; Fill water system: Manual; Heater: 2300 watt; Dry heater: 600 watt; Control system: Mechanical Engineering; Sterilization temperature: 118 - 134 °C; Sterilization time: 0 - 60 minutes; Dry time: 0 - 60 minutes; Display : Pressure and Temperature Gauge; Indicator: Progress, Power, Temperature, Pressure; Protection: Overheat, Pressure Overload, Emergency Button	 

No.	Nama Barang	Spesifikasi	Gambar
		c Fast, 35 minute sterilizing cycle Complete and Effective Sterilization at an Affordable Price Heavy Cast Aluminum Cover and Bottom Construction Aluminum Alloy Seamless Inset Container Cast Aluminum Rack Flexible Metal Exhaust Tube 3 Wire Grounded Plug for Safety Calibrated Gauge that shows when sterilization cycle begins Safety locking mechanism that prevents opening while the sterilizer is under pressure Easy Steam Release Switch Excess Pressure Relief Valve for Safety Light, compact, portable and robust, top loading sterilizer Cover alignment arrows Lubricated Metal-to-Metal Seal which means NO GASKETS TO REPLACE OR WEAR OUT 240 Volts, 50/60 Hz, 1050 Watts / 4.38 Amps Gross Capacity: 25 qt / 24 liters Overall Height: 16_ inches / 42.5 cm Bottom Height: 12_ inches / 31.2 cm Inside Diameter: 12_ inches / 32.1cm Unit Weight: 26 lbs / 11.8 kg Inner container: Height: 8_ inches / 21.6 cm, Diameter: 11 inches / 28.3 cm, Capacity: min 14.5 qt / 13.7 liters, Volume: 835 in_ / 13 688 cm_	
		d Kapasitas 16 Liter; Ukuran ruang kerja Æ 30 X 23 cm (12" X 9"); Ukuran Dresing; Drum Æ 27 x 22 cm (11"x9"); Daya Heater 1.8 kW; Tekanan Operasi 16 Psi/110.3kPA; Tugas Siklus; Empat siklus dalam shift delapan jam dengan periode; pendinginan 30 menit; Ukuran Luar 370mm x 385mm x 475mm; Kisarana Suhu dan waktu Preset 121°C selama 20 menit; Voltase 230 VAC, 50 Hz, single phase	
2.	Biosafety cabinet	a Exterior dimension W x H x D approx. 1300 x 1568 x 798 mm; Interior dimention W x H x D approx. 1200 x 780 x 630 mm; Shipping dimension W x H x D approx. 1410 x 1730 x 925 mm; Working height of front window approx. 250 mm; Maximum opening height of front window approx. 535 mm; Net weight 200 Kg; Shipping weight 225 kg; Voltage 230 V; Frequency 50/60 Hz; Filter Specification H14 HEPA EN 1822, 99.995% MPPS; Certification NSF/ANSI 49, UL, CE; Lighting power >120 fc; Sound preesure level <63 dB (A); Energy consumption operating set point 200 W; Energy consumption,Night Set-Back mode 70 W; Heat output,operating mode (non-vented) 683 BTU/hr (200 W); Heat output,Night Set-Back mode (light off, 239 BTU/hr (70 W)Non vented); Exhaust.inflow air volume 344 cfm (585 m3/h); Exhaust volume, timbble ducted 448 cfm (761 m3/hr); included: Support stand, UV Lamp, Arm Rest	

No.	Nama Barang	Spesifikasi	Gambar
		b Microbiological Safety Cabinets - designed and built to performance requirements of the EN-12469:2000 European Standard, with 70% of the air re-circulated via the main Class H14 HEPA filter within the cabinet, whilst the remaining 30% is discharged through an exhaust Class H14 HEPA filter. APPLICATIONS use for product in a wide range of disciplines in applications such as: Microbiology, Virology, Haematology, Cell culture, Genetics, Handling of hazardous agents to human beings or animals. The standard sash-height opening during work is set to 250 mm. Alternative sash-height settings by the factory are possible upon request. Silent Operation. High Level Lighting. Easy handling and maintenance. SPECIFICATIONS: External structure in epoxy powder coated cold-rolled steel for excellent corrosion resistance to the attack by aggressive common chemicals. Rear wall in stainless steel AISI 304 L, designed to conform to requirements and pass the "cleanability test" according to EN12469:2000. Work surface in stainless steel AISI 316L consisting of sections which are easily removable for carrying out routine cleaning and/or autoclaving sterilization procedures; closed or perforated on request. Front window: electrically operated vertically sliding safety glass sash window Re-circulating and extractor fans: supplied with single centrifugal fan. Filtration: H14 HEPA/ULPA filters with an efficiency better than 99,995 % MPPS (EN-1822). Operation Condition: Air cleanliness in Class ISO 3 as per ISO:EN 14644-1. The user-friendly practical keyboard and the rear-lit LCD will continuously display all required data keeping the user constantly informed of the cabinet conditions in operation, and in particular: • display of laminar airflow velocity and frontal air barrier velocity • display of inside and outside temperature • display of residual lifetime of HEPA/ULPA filters, UV Lamp and activated carbon filter (if fitted) • display of total number of hours of operation • display of saturation level of HEPA/ULPA filters. Audio-visual alarms provided for: • out of range or incorrect laminar airflow velocity and frontal air barrier velocity • incorrect position of front sash-window • clogging of HEPA/ULPA filters • end of life-cycle of UV lamp and saturation of activated carbon filter (if fitted) • blockage in the exhaust duct (if fitted); fan-motor malfunction; power failure Lighting: fluorescent tubes in built-in housing, placed outside the contaminated area D.O.P.-DEHS inlet port for testing the HEPA/ULPA filters Technical sheet : Useful dimension (mm):: WxDxH: approx. 1192x580x740 ; Overall dimension [mm]: WxDxH: approx. 1350x855x1545 ; Noise level (dbA): <54 Working Aperture (mm): 200 Exhaust flow rate (m3/h): 390 Lighting level (lux): >1200 Electrical data : 230 V - 50 Hz ; Current consumption (A): 2,1; Heat emission (W): 240 Complete with: UV Lamp for Microbiological Safety Cabinets; Customized work surfaces; Epoxy powder painted modular stand with castor for Microbiological Safety Cabinets; Ducting System; Installation; Training; Certificate of Origin.	

No.	Nama Barang	Spesifikasi	Gambar
		c Class II, A2 Thimble Exhaust Volume; BSC CFM : 358; Thimble Exhaust CFM : 465; NSF/ANSI 49; Each cabinet is factory tested to NSF/ANSI 49, Section 6.15; Full Color Monitor provides real time performance data; Double wall construction surrounds containment area with negative pressure; Angular front grill design improves containment; Multiple Audible/Visual Alarm features: Sash position alarm, Programmable filter load warning, Maximum filter load alarm, UV lamp "ON" indicator, UV lamp programmable timer, UV lamp life expectancy monitor, UL 601010-A-1 listed, Low pressure Airflow Sensor (Thimble connection), 10° angled easy lift sash utilizes a reinforced nylon sash belt and sprocket, Easy access, Touch Screen Control Panel, Removable one piece stainless steel worksurface, Coved Corner, three wall stainless steel interior for ease of cleaning, Forward positioned service fittings, Tilting sash for easy cleaning, Telescopic Base Stand options include manual or electrically operated adjustable height, Ergonomic Armrest, Quiet Operation $\leq 62\text{dBA}^*$; Touch screen monitor; DEC Star variable speed ECM technology; Variable speed/Constant airflow; Energy efficient: save 15%-35% watts as compared to standard technology blowers with traditional ECM's; Superstructure – Exterior Dimensions WDH: approx. 1400 x 815 x 1610 mm; Base Stand; Manual adjustment. Size and range of motion : 711mm – 838mm (28" – 35') range of motion. INCLUDE : Base Stand (Manual adjustment), UV Lamp.	
		d Overall dimension (W x D x H) mm : approx. 1350 x 800 x 1970; Working zone (W x D x H) mm : approx. 1250 x 750 x 550; Ulpasafe Biological Safety Cabinet Class II A: Power (W) : 315W; Voltage : 220V 50Hz; Vibration : < 3 μm; Noise level : $\geq 58\text{ dBA}$; Control system : Touch screen; Fluorescent light : Intensity >850 Lux; Weight : 180 kg; Touch Screen Operating Panel : Security : User Password, Self diagnosis : Auto, Pre-UV Timer : Selectable timer, Air status : Air save, ULPA Filter 6,000 Hours : Count Down Hour, UV Light 2,000 Hours : Count Down Hour, Over sash (>200mm) : Warning screen & alarm, Filter fail or break : Warning screen, Real time and date : Yes, Working time : Yes, Safety shut down : Yes; Filter : Main filter : ULPA, Filter efficiency : 99.9995% (0.1μm - 0.2 μm), Exhaust filter : ULPA, Filter efficiency : 99.9995% (0.1μm - 0.2μm); Air Flow System : Downflow velocity : $0.45 \pm 0.015\text{ m/s}$, Inflow velocity : $0.65 \pm 0.015\text{ m/s}$, Inside volume of working space : 0.508 m^3, Volume of treated air per hour : 1125 m^3/hour; Contruction: Top hood : Powder Coated E.G Steel, Hood wall : UV Safe Polycarbonate, Work base : Stainless Steel AISI 304, include calibration. INCLUDE QUALIFICATON IQ ,OQ, PQ	

No.	Nama Barang	Spesifikasi	Gambar
3.	Centrifuge	a Maximum speed : 15,000 rpm (in 100 rpm increments); Maximum g-force : 20,627x g; Maximum capacity : 36 x 1.5/2 ml; Run Time : 99 min, 59 sec, continuous run, short run; User defined programs : 10; Noise level Max Speed : < 58 dBA; Accel/ Decel Profiles : Fast, soft; Temperature Range : -10°C to +40°C; Temperature Control : ±2.5°C; Ambient Temperature Range : 5 ° C to 35 ° C; Maximum Heat Dissipation into Room : 1433 Btu/h (420 W); Dimension (cm) : approx. 31 W x 66 D x 29 W; Weight : 32 kg (70.5 lb); INCLUDE: 24 x 1.5/2.0 mL fixed-angle rotor	
		b Refrigerated: Variable -9°C to +40°C with stand by cooling, CFC free R404A gas, Valve control of gas, PID control; Speed max 500-15,000 Rpm (1 Rpm steps); Rcf max 22,000 G; Timer 0-9999 Mins & Hold (1 sec steps); Power 690 Watts; Memory 108 programs; Accel rates 10 programs; Decel rates 10 programs; Temperature range -9°C to + 40°C PID Controlled to + / - 1°C; Dimensions approx. 315 H x 450 W x 635 Dmm; Weight approx. 62.2 Kg (without rotor); Large LCD display with touch screen control, Pulse short run, Run in speed (rpm) or rcf (G) in 1 rpm increments, Sound <60db (rotor dependent), Orientation acceleration rate; Safety features: Multipoint lid locking Lid safety, Emergency lid release Power failure release, Lid Spring Strut Lid dropping safety, Lid lock detection To run, lid must be shut, Imbalance detection Eradicates user loading errors. INCLUDE: Microtube Rotors 15,000 Rpm : Rotor type - 24 x 2ml	 Display illustrative only
		c Maximum speed : min. 15,000 rpm (in 100 rpm increments); Maximum g-force : min. 20,627x g; Maximum capacity : min. 36 x 1.5/2 ml; Run Time : 99 min, 59 sec, continuous run, short run; User defined programs : 10; Noise level Max Speed : < 59 dBA; Accel/ Decel Profiles : Fast, soft; Ambient Temperature Range : 5 ° C to 40 ° C; Maximum Heat Dissipation into Room : 580 Btu/h (170 W); Dimension (cm) : approx. 31 W x 42 D x 27 W; Weight : 13 kg (28.6 lb). INCLUDE: 24 x 1.5/2.0 mL fixed-angle rotor	
		d Speed range 500-15,000 Rpm (1 Rpm steps); Rcf Max 22,000 G; Timer 0-9999 Mins & Hold (1 sec steps); Power 140 Watts; Memory 108 programs; Accel rates 10 programs; Decel rates 10 programs; Dimensions approx. 235 H x 235 W x 350 D mm; Weight approx. 12.8 Kg (without rotor); Large LCD display with touch screen control, Pulse short run, Run in speed (rpm) or rcf (G) in 1 rpm increments, Sound <60db (rotor dependent), Orientation acceleration rate; Safety features : Multi point lid locking Lid safety, Emergency lid release Power failure release, Imbalance detection Eradicates user loading errors. INCLUDE: Microtube Rotors 15,000 Rpm : Rotor type - 24 x 2ml	 Display indicative only

No.	Nama Barang	Spesifikasi	Gambar
4.	Chlorophyll Meter	a Measuring area 2mm x 2mm; Measuring mode 2-wavelength concentration difference of optical methods; Sensors Silicon semiconductor photodiode; Display mode Measuring value: 3 digits liquid crystal display; Measuring times: 2 digits liquid crystal display; Min measuring Interval < 3s; Measuring Range 0.0-99.9 SPAD, -10~99.9°C; Accuracy ± 1.0 SPAD, $\pm 0.5^\circ\text{C}$; Repeat ± 0.3 SPAD, $\pm 0.2^\circ\text{C}$; Operating temp. 0-50°C; Storage temp. -20-55°C; Power 4.2V-2000Mah rechargeable Li battery; Dimensions approx. 155mm * 70mm * 42mm (L x W x H); Battery life Can maintain more than 20000 operations; Memory capacity 30KB, automatically calculate and show the average; Button 4 buttons; Weight 200grams (excluding batteries)	
		b Measured Parameters: Optical absorbance in two different wavebands: 653 nm (Chlorophyll) & 931 nm (Near Infra-Red); Measurement Area: 9.52 mm (3/8") diameter circle (71 mm ²); Resolution: 0.1 CCI unit; Repeatability: +/- 1%; Source: Custom 2 wavelength LED module; Detector: Silicon photodiode with integral amplifier for absorbance measurement, power monitoring, and temperature compensation; Storage Capacity: 8 Mbyte of memory for up to 160,000 data measurements, or 94,000 with added GPS data entries; Data Modes: (3) Single point, user selectable from 1-30 point averaging, and a statistical 10-30 point protocol that asks to replace data points beyond a 2 sigma standard deviation; User Interface: 128 x 32 pixel graphic display, beep signals, keys for: setup, measurement protocols, diagnostics, data control and user input of alphanumeric comment lines; I/O: USB 1.1 & RS-232; multi-point file output, single point out on demand, NMEA 0183 compliant for GPS data input; Temperature Range: 0-50°C; Temperature Drift: Temperature compensated source and detector circuitry for minimum drift over full range; Power Source: 9V Alkaline battery; Auto Off Interval: 4 minutes (no key press or data download); Size: approx. 152(L) x 82(W) x 25(D) mm; Weight with battery: approx. 162 g	
5.	Conductivitymeter	a Range 0.0 to 20.00, 200, 2,000.0 μS ; Oto 2000, 200.0 ms; Resolution 0.01, 0.1, 1 μS , 0.01, 0.1 ms; Accuracy ± 1 % full scale or ± 1 digit; Calibration: up to 5 points (1 per range) for multi-point calibration, or 1 point for single point for entire range; Temperature Compensation: Automatic Temperature Compensation (ATC) fixed 2% per $^\circ\text{C}$ factor, adjustable 73%; Power: Four AA alkaline batteries (supplied), >100 hours continuous use, Display Single Custom LCD; Auto shut-off After 17 minutes; Operating Temperature 32 to 122 $^\circ\text{F}$; 0 to 50 $^\circ\text{C}$; Microprocessors have enabled meter manufacturers to combine many features into smaller designs with better accuracy: Push button operation, Up to five point calibration, Temperature readout, Automatic Temperature Compensation, Auto-off after 17 minutes; Hold function, Adjustable conductivity to TDS factor; Ideal for the following applications: Water and Wastewater, Industrial Water Boiling and Cooling, Drinking Water, Laundry and Sanitation, Food and Beverage; include case.	

No.	Nama Barang	Spesifikasi	Gambar
		b EC Range 0.0 to 199.9 μ S/cm; 0 to 1999 μ S/cm; 0.00 to 19.99 mS/cm; 0.0 to 199.9 mS/cm; EC Resolution 0.1 μ S/cm; 1 μ S/cm; 0.01 mS/cm; 0.1 mS/cm; EC Accuracy $\pm 1\%$ FS (excluding probe error); EC Calibration manual, one point; Temperature Compensation automatic, 10 to 50°C (50 to 122°F) with $\alpha = 2\%/^{\circ}\text{C}$; Electrode/Probe conductivity probe with internal temperature sensor, DIN connector and 1 m (3.3') cable (included); Battery Type/Life 9V / approximately 100 hours of continuous use; Environment 0 to 50°C; RH max 95%; Dimensions approx. 196 x 80 x 60 mm; Weight approx. 425 g; Features: Four-ring Probe, Four Measurement Ranges, Automatic Temperature Compensation, One-point Calibration, Battery Error Prevention System (BEPS).	
		c Different parameters : series meters can be used to measure conductivity; Housing : The protective armor does not guarantee a secure grip but also protection against falls. The stand attached to the back of the housing can also be used as a hanger or belt clip; Hold function included : Data gained is virtually "frozen" on the display by this function; This not only makes it easier to read the results, it also improves reproducibility; Automatic battery check; Power Supply : 9 V-block; Auto – OFF : Yes; Measuring Range : 0,001 - 1,999 mS/cm, 0,01 - 19,99 mS/cm; Portability : Portable; Compliance : CE; Protection Class : IP 30; Dimensions : approx. 110 x 34 x 208 mm; Weight : 380 g; INCLUDED: Instrument in a sturdy plastic case, Battery, Conductivity sensor, Instruction manual	
		d Conductivity range 0 to 199,999 μ S/cm; Resolution 0.01 / 0.1; Relative accuracy $\pm 0.5\%$; TDS range 0 to 1999 mg/L; Resolution 1 mg/L; Relative accuracy $\pm 0.2\%$; Salinity range 0.0 to 80.0 ppt; Resolution 0.1; Relative accuracy ± 0.1 ; Temperature range -10 to 110°C; Resolution 0.1°C; Relative accuracy $\pm 0.1^{\circ}$; Temperature compensation Auto; Calibration Auto; Datalog 100 points; Display Backlight LCD; Inputs BNC, 8PIN (ATC), 7.5V adaptor; Outputs RS232C; Power Rechargeable battery / DC Power adaptor	
6.	Digital Oscilloscope	a Bandwidth : 50MHz; Channels : 4; Maximum Sample Rate: 1GSa/s (1 channel active), 500MSa/s (2 channels active), 250MSa/s (3 or 4 channels active); Maximum Memory Depth : 12Mpts standard, 24Mpts optional - See licence MEM-DS1000Z; Maximum Waveform Capture Rate : 30,000wfms/s; Time-Base Accuracy : $\leq \pm 25\text{ppm}$; Time-Base Drift : $\leq \pm 5\text{ppm/year}$; Time-Base Scale : 5ns/div to 50s/div; Input Impedance : $1\text{M}\Omega \pm 2\%$ // $13\text{pF} \pm 3\text{pF}$; Vertical Scale : 1mV/div to 10V/div; DC Gain Accuracy : $\pm 2\%$ Full Scale (Channel 1); $\pm 3\%$ Full Scale (Channels 2, 3 & 4); Bandwidth Limit : 20MHz; Real Time Waveform Record & Replay Function (Optional) : Up to 60,000 Frames; Standard Trigger Functions : Edge, Pulse Width, Slope, Video, Pattern, Duration	

No.	Nama Barang	Spesifikasi	Gambar
		b Channels: 2; Bandwith: 40MHz; sampling rate: 1Gsa/s; Equivalent: 50 Gsa/s; memory: single channel: 2Mpts, Double Channel: 1 Mpts; Rise time: <8.8ns; Input impedance: 1M ohm 17Pf; sec/div range 10ns/div-50s/div; scan: 100ms-50s/div; display 7" Wide screen LCD Color; USB Host/Device: Support USB Printer and USB Flash Drive; PictBridge Function; Easy scope Software; 12 Languages; Industrial Power Design, Troubleshooting, Installation, and Maintenance; Electronics Design, Troubleshooting, Installation, and Maintenance; Circuit Design & Debug; Educational Lab & Training Institutions; Repair & Service; Production Test & Quality Inspection	
		c Vertical Bandwidth : DC to 100 MHz (-3dB); Channels : 2; Rise time : <3.5 ns Approx; Sensitivity : 2 mV/div to 10 V/div (1-2-5 increments); Accuracy : (3% x IReadoutI + 0.1 div + 1mV; Input Coupling : AC, DC & Ground; Input Impedence : 1 MΩ 2%; Polarity : Normal & Invert; Maximum Input : 300V (DC+AC peak), CATII; Waveform Signal Process : +, -, X, FFT, FFTrms; Offset Range : 2 mV/div to 50 mV/div: ±0.4V; 100 mV/div to 500 mV/div: ±4V; 1 V/div to 5 V/div ±40V; Bandwidth Limit : 20 MHz (-3dB); Trigger Sources : CH1, CH2, Line, EXT; Modes : AUTO, NORMAL, SINGLE, TV, Edge, Pulse width Coupling : AC, DC, LF rej., HF rej., Noise rej; Sensitivity : DC to 25 MHz: Approx. 0.5 div or 5 mV; 25 MHz to 60/100/150 MHz: Approx. 1.5 div or 15 mV; External Trigger Range : ±15 V; Sensitivity : DC to 25 MHz: ~ 50 mV; 25 MHz to 60/100 MHz: ~100 mV; Input Impedence : 1 MΩ ± 2%; Maximum Input : 300 V (DC, AC, peak), CATII; Horizontal Range : 1 ns/div to 50 s/div (1-2-5 increments); ROLL: 250 ms/div to 50 x/div; Modes : MAIN, WINDOW, WINDOW ZOOM, ROLL, X-Y; Accuracy : ±0.01%; Pre-Trigger : 10 div maximum; Post-Trigger : 1000 div; X-Y Mode X-Axis Input : Channel 1, Y-Axis Input : Channel 2; Phase Shift : ±3° at 100 kHz; Signal Acquisition; Real-Time Sample Rate : 1 GSa/s maximum; Equivalent Sample Rate : 25 GSa/s maximum; Vertical Resolution : 8 Bits; Record Length : 2 Mega Points maximum; Acquisition Mode : Normal, Peak Detect, Average Peak Detection : 10 ns (500 ns/div to 50 ns/div); Average : 2, 4, 8, 16, 32, 64, 128, 256; Adjustable Probe Compensation Signal; Frequency Range : 1 kHz to 100 kHz, adjustable 1 kHz/STEP; Duty Cycle Range : 5% to 95% adjustable, 5%/STEP; Display TFT LCD Type : 5.6 inch; Display Resolution : 234 (Vertically) x 320 (Horizontally) Dots; Display Graticule : 8 x 10 divisions; Interface SD Card Slot : Image (BMP) waveform data (CSV) and setup (SET); Power Source: Line Voltage Range : AC 100V to 240V, 48 Hz to 63 Hz, Auto selection; Dimensions approx. 31 cm (W) x 14 cm (H) x 14 cm (D); Mass : Approximately 2.5 kg	

No.	Nama Barang	Spesifikasi	Gambar
7.	Digital Viscometer	a Rotating springless viscometer with 7" Touch screen; Unlimited number of speeds between 0.3 and 250 rpm; Torque range Standard Version : 0.05 to 13 mNm, LR Version : 0.005 to 0.8 mNm; Accuracy +/- 1 % of the full scale; Repeatability +/- 0,2 %; Display Viscosity (cP/Poises or mPa.s / Pa.s) – Speed – Torque – Time-Shear rate - Shear stress - (Temperature in option); Compatible measuring system MS ASTM, MS BV, MS VANE, MS SV, MS ULV; Compatible temperature control EVA LR-BV, RT-1 PLUS, EVA DIN PLUS; Supply voltage 90-240 VAC 50/60 Hz; PC connections USB Port	
8.	Elektroforesis	a Gel dimensions : approx. 9x11 cm; Buffer volume : min. 600ml; Gel volume (at 0.5cm) : min. 50ml; Sample Capacity : min. 36; Comb Slots : 2; Equidistant sample runs : 1 or 2; Unit Dimensions : approx. 15x22x9.5 cm; Running condition : 90V at 5V/cm; RapidCast; Mini horizontal unit, gasketed UVT gel tray 9x11 cm, 1comb: 10 sample, 1.5mm, 1 comb: 14 sample, 1.5mm. INCLUDED: Power Supply : Voltage : 0 - 400V, Current : 0 - 500 mA; Power : 0 - 50 W, Parameter range : 1 - 100% of full scale, Timer : 0 - 99:59 h, Volt-hours : 0 - 99.99 kWh, Display : LCD, 2x16 characters, Resolution : 1 V, 1 mA, 1 W, Programs : 9x9 set of parameters, Outputs : 3 in parallel, 4 mm sockets, Data-Logging : 3600 values	
		b Gel Size (width x Length): approx. 7 x 10 cm; Sample Throughput: 8 - 30; Base Buffer Volume: min. 0.27 L; Cell Size (L x W x H): approx. 25,5x 9,2x 5,6 cm; Distance to Electrode: max. 14.5 cm; Bromphenol Blue (Dye): 4.5 cm/hour; Migration Rates: @ 75 V; INCLUDED: Power Supply with Output range: 10 - 300 V in 1 V steps (Programmable): 4 - 400 mA in 1 mA steps 75 W maximum, Type of output: Constant voltage or constant current with automatic crossover, Output terminals: 4 recessed sets in parallel, Timer: 1 - 999 minutes, Regulatory certification: IEC 1010-1,CE; Safety features: No-load detection, sudden load change detection, overload/short circuit detection, auto power-up after power failure, Display: LED, Input protection: Fuse; Operating conditions: Temperature: 0 - 40 C, Humidity: 0 - 95% relative humidity, Dimensions (LxWxH): approx. 29 x 21 x 8 cm; SUB CELL UNIT, two 1.5 mm fixed-height combs (8- & 15-well), UV-transparent gel tray (7 x 10 cm) mini gel caster and PowerPac 300 power supply.	
		c Horizontal Midi-Gel PRODUCTIVITY PACKAGE, CE, approx. 14cm(w) x 16cm(l) with external Gel Caster, extra UVT gel tray and extra comb; Productivity Package increases your productivity and efficiency by providing all the components necessary to cast a second gel while the first is running; Platinum electrode cassettes provide rapid sample velocity and clear focused bands without smiling. These cassettes are easily removed for cleaning or replacement; High quality, sturdy construction, 3 year warranty with vast array of accessory options; Gel Tray Specifications: 1) All gel trays are winged for easy handling - no more sticking finger into slippery	

No.	Nama Barang	Spesifikasi	Gambar
		buffer to extract gel tray, 2) Made from sturdy approx. 6.4mm thick UV transparent acrylic, 3) Grooves in gel tray corners create agarose anchors to prevent gel flotation during electrophoresis, 4) Gel tray configuration allows single run or multiple simultaneous short runs; 3 options for gel casting; tapered baffles, external gel casters or accessory continuously adjustable gel caster; The Midi-Horizontal runs up to a full microtitre plate (108 samples) per gel; Tapered baffles allow easy in situ gel formation with or without gel tray; Combs are printed with catalog number and thickness for easy identification. Choice of double-sided adjustable height combs gives researcher more options; APPLICATIONS: Separation and identification of DNA fragments, RNA fragments, PCR products and synthetic oligonucleotides; INCLUDED: POWER SUPPLY: Input : 96-240V, 50-60 Hz, Output voltage (V) : 10 – 300, 1 V steps, CC or CV, Output current (mA) : 4 – 500mA, 1mA steps, Maximum output power (W) : 90 W, Output jacks : 4 pairs, color coded, recessed for safety, Timer (Minutes) :1 – 1440 (24 hours), 1 minute increment, User interface : 3 digit, red LED membrane keypad, Dimension (L x W x H) : approx. 320 x 240 x 73 mm, Weight Net : ~2.4 kg (5.3 lb) ; Gross : ~3.4 kg (7.5 lb), Operating Conditions : Indoor use : 0-40° C, RH : 0% to 90% non-condensing, Altitude : < 2000m; Max. loading of chamber : 300 kg; Max. loading per internal : 30 kg; Textured stainless steel casing; Installation : on lockable castors; Dimensions : w(D) x h(E) x d(F): approx. 1224 x 1726 x 784 mm; Housing : rear zinc-plated steel; Voltage Electrical load : 400 V, 3 phases, 50 Hz approx. 700 W	
9.	Elisa Reader	a Detection modes : Absorbance; Read methods : Endpoint. Kinetic, well area scanning (under computer control); Microplate types : 6-, 12-, 24-, 48-, 96-well microplates; Maximum plate height 0.9" (22.86 cm); Shaking : Linear (except NB configurations); Software : Gen5™ Software for external computer control and data analysis (optional); Onboard software: Up to 40 user-programmable protocols; Quick menu; Create, edit or run protocols; Save results to USB thumb drive; Printer:External USB printer (optional); User interface:4.3" color LCD touchscreen display; ABSORBANC: Light source:Tungsten halogen, Detector : Photodiode, Wavelength selection:Filters, Wavelength range:400 to 750 nm, Dynamic range : 0 to 4.0 OD (normal & rapid read modes); 0 to 3.0 OD (sweep read mode), Resolution:0.001 OD (standalone mode); 0.0001 OD (via Gen5 control), Filter wheel capacity: 5; Filters supplied:405, 450, 490, 630 OD accuracy: Normal: +1.0% +0.010 OD from 0.0 to 2.0 OD @ 405 nm, Rapid: +2.0% +0.020 OD from 0.0 to 2.0 OD @ 405 nm, Sweep: +1.0% +0.020 OD from 0.0 to 1.0 OD @ 405 nm OD linearity: Normal: +1.0% +0.010 OD from 0.0 to 2.0 OD @ 405 nm, +3.0% +0.010 OD from 2.0 OD to 3.0 OD @ 450 nm, Rapid: +2.0% +0.010 OD from 0.0 to 2.0 OD @ 405 nm, Sweep: +1.0% +0.010 OD from 0.0 to 1.0 OD @ 405 nm OD repeatability; Normal: +0.5% +0.005 OD from 0.0 to 2.0 OD @ 405 nm; Rapid: +1.0% +0.010 OD from 0.0 to 2.0 OD @ 405 nm; Sweep: +2.0% +0.010 OD from 0.0 to 1.0 OD @ 405 nm; Reading speed (kinetic) 96 wells, single wavelength; Normal read mode: 30 seconds; Rapid read mode: 18 seconds; Sweep read mode: 11 seconds; 96 wells, dual wavelength; Normal read mode: 63 seconds PHYSICAL CHARACTERISTICS: Connectivity (1) USB Type B for computer control (2) USB Type A for thumb drive and printer: Power:External	

No.	Nama Barang	Spesifikasi	Gambar
		24VDC power supply compatible with 100-240VAC @50-60Hz; Power consumption: 40 Watts; Dimensions: approx. 16.5 x 15 x 7 inches (41.9 x 38.1 x 17.8 cm); Weight : approx. 18.5 lbs (8 kg) INCLUDE : Note Book, Gen-5 Data Analysis software, Multichannel Micropipet, 8 Channel; Variable volume Pipette 20 - 300 μ l	
10.	Furnace	a Max temp [°C]: 1100; Heat-up time [mins]: approx. 28; Max. continuous operating temp. [°C] : 1000; Dimensions: Internal HWD [mm] : approx. 165 x 180 x 210; Dimensions: External HWD [mm] : 580 x 410 x 420; Temperature uniformity of ± 5 °C within HWD [mm] : approx. 125 x 140 x 140; Volume [litres] : min. 6; Max power [W] : 2000; Holding power [W] : approx. 900; Thermocouple type : K; Weight [kg] : approx. 24; 301 controller with single ramp to setpoint and process timer; Drop down door with air gap to minimise external temperature; Delayed start / process timer function as standard; Vacuum formed, low thermal mass insulation; Hard ceramic hearth fitted as standard; Ventilated via top mounted ceramic chimney. Include : Crucible Qty : 10 pcs	
		b Capacity 3 liter; Temperature max. range: 1000°C to 1200°C; Dimension: External W390 x D480 x H500mm, Chamber : W130xD250xH90mm; Material Internal : Ceramic Fiber with Heating wire, External : Powder Coated Steel; Controller: Digital PID Controller with Jog-Shuttle Switch (Turn+Push); Display : Digital LCD Display; Timer : 99 hour 59 min; Thermocouple : K-type; Safety Device : Over Temp. and Over Current Protector, Sensor Error Detector; Power : 1800W, 220V, 50/60 Hz	
		c Inner dimensions (wxdxh) mm: approx. 130 x 180 x 130; Outer dimensions (wxdxh) mm: approx. 400 x 450 x 450; Max. furnace temp 1100 °C; Power : 1.0kW; Connecting voltage: 230V 1/N/PE; Capacity: 3 liter; Controller : PC442	
11.	Homogenizer	a Speed Range (Without Load): 50 - 3000 rpm; Maximum Torque : 3000rpm 0.098N·m (3000rpm 1kgf·cm); Speed Indicator: LED Indicator 4 Digits; Alarm Indication: Overload, Overheat, Excess Current (Indicated on the LED for Speed); Motor: DC Brushless Motor 40W Output, Rated Torque: 3000 rpm 0.127N·m (1.3kgf·cm); Speed Control: Speed Feedback Control; Size of Stirring Shaft : 1 - 8 mm Diameter; Safety Features: Electric Current Limiting Circuit, Thermal Protector, Chuck Cover; Overall Dimensions: (AC220V) 92W x 167D x 189H mm (355Dmm: with arbor); Power Input : AC220V 50/60Hz; Rated Power Source: 2A 200VA; Net Weight: Approx. 2.8kg. Included: Stand Base, Pole height 780mm, Stirring Propeller, standard, Shaft without screw	

No.	Nama Barang	Spesifikasi	Gambar
		b Sample size : 0,1-1,5 kg; Grinding rate/time : 20 to 60 s; Grinding speed : Impeller 1500 rpm; Particle size : depending on sample; Power Supply : 230 V, 50 Hz; Power Consumption : 500 W; net weight 15Kg; Capacity : 3,5 L bowl; Liquid 1,5 L Liquid content; Dimensions, L x D x H: 250 x 410 x 300 mm	
		c Compact digital homogenizer unit with high watt motor; 0.05ml - 3.5L volume range; Viscosity up to 50,000 mPas; Bright LED display & user-friendly controls; Homogenize, emulsify, blend and/or mix; Includes U-shape Stand Assembly; Power Rating: 576 Watts; RPM Range: 0 - 30,000 (120V) / 0 - 28,000 (220V); Speed Control: Digital; Variable Speed; Noise rating: 68 dB; Weight: approx. 18 pounds; Dim. with Stand: 14 X 12 X 24 in.included: holder, Motor Unit Adapter, Generator probe: Made from 316 Stainless Steel and PTFE, Precision crafted rotor-stator generator probe, Quick connect design for ease of use and safety, Disassemble and reassemble in seconds, Chemically compatible with all cleaning methods and most reagents, Saw-Tooth Generator Probe; 7 mm x 95 mm	
12.	Incubator	a Performance Data Temperature: Temperature range 5 °C above ambient temperature to [°C] 100, Temperature variation at 37 °C [± K] 0.4, Temperature fluctuation at 37 °C [± K] 0.2, Heating-up time to 37 °C [min] 45, Recovery time after 30 seconds door open at 37 °C [min] 16 Electrical data: Rated Voltage [V] 230, Power frequency [Hz] 50/60, Nominal power [kW] 0.3, Unit fuse [A] 6.3, Phase (Nominal voltage) [ph] 1 Measures: Interior volume [L] 57 Net weight of the unit (empty) [kg] 39, permitted load [kg] 70, Load per rack [kg] 30 Measures – Doors: Unit doors 1 Measures - Internal Dimensions (WxHxD) 360x420x380mm Measures - Outer dimensions (WxHxD) 560x625x565mm Wall clearance sidewise [mm] 100, Wall clearance back [mm] 160, Energy consumption at 37 °C 25 Wh/h Number of shelves (std./max.) 2/4 Temperature range: ambient temperature plus 5 °C to 100 °C High temperature accuracy thanks to APT.line™ technology Natural convection Controller with LCD display Electromechanical control of the exhaust air flap Inner door made of tempered safety glass 2 chrome-plated racks Class 3.1 integrated independent temperature safety device (DIN 12880) with visual alarm Ergonomic handle design	
		b Gravity convection technology for gentle air flow air & minimal drying out Rounded interior corners Microprocessor control Automatic overtemperature alarm Stackable with optional stacking kit Interior material: stainless steel 1.4016 RS232 Interface Internal glass door Easy calibration, routine check upon startup for optimum performance Large vacuum fluorescent digital display for easy reading Temperature range: ambient +5°C - 75°C Temperature uniformity: ± 0.6°C Temperature stability: ± 0.2°C Spatial temperature deviation at 37°C: ± 0.6°C Temperature deviation over time at 37°C: ± 0.2°C Footprint: 0.3 m2 Chamber volume:	

No.	Nama Barang	Spesifikasi	Gambar
		75 liter Chamber dimensions: 354 x 508 x 414 mm (WxHxD) Exterior dimensions: 530 x 720 x 565 mm (WxHxD) Number of shelves: 2 pcs supplied, max. 13 pcs Max. shelf load: 25 kg Power: 230V, 50Hz, 300W, 1.3 A Weight: 40 kg (empty)	
		c Control COCKPIT adaptive multifunctional digital PID-microprocessor controller with high-definition TFT-colour display Temperature 1 Pt100 sensor DIN class A in 4-wire-circuit Timer Digital backwards counter with target time setting, adjustable from 1 minute to 99 days temperature range in °C min. 5°C above ambient up to +80°C Door inner glass door Internals 1 stainless steel grids Scope of delivery incl. works calibration certificate for +37°C Housing rear zinc-plated steel Interior easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides Volume 53 Liter texture stainless steel casing WHD: approx. 585x784x514mm; power: approx. 1000W; max. loading of chamber: approx. 80Kg	
		d This version of the incubator is suitable for incubate processes without airflow It is choice if you are looking for a incubator that comes within a budget. This equipment is fully focused on main incubating functions aside from other functions.; Temperature range : Ambient +5°C to 70°C (Ambient +9°F to 158°F); Air circulation type : Natural.; Temp. Control : Microprocessor PID Controller.; Time range : 00.00 to 99Hr59min (MIN SEC) Selectable Digital Display.; Temp. accuracy & stability : ±0.1°C.; Temp. Uniformity : ±1.5°C.; Capacity : 54 L.; Material Internal : Stainless steel.; Material external : Steel plate with powder heating coated.; Shelves : 2 supplied (12 maximum).; Heater : 480W.; Safety Device : Automatic reset function incoming power cut, Buzzer on when set time arrived, Door open alarm, Electric leakage breaker, Over temp. Controller.; Dimension Internal : 380Wx340Dx420H mm.; Dimension External : 525Wx485D x825H mm.; Weight : 41 kg.; Electrical requirements : 230V, 50/60Hz, 1phase, 2.1A.	
13.	Laminarflow	a Vertical Laminar Air Flow; Overall dimension (W x D x H) mm approx.1350 x 800 x 1970; Working zone (W x D x H) mm approx. 1250 x 650 x 600; Touch Screen operating panel : Security : User password, Pre -UV Timer : Selectable timer, Air Select Speed : 3 steps, ULPA Filter 6000 hours : Count Down hour, UV Light 2000 hours : Count down Hour, Real Time & date; UV & filter Change remain indicator; Filter : ULPA Filter efficiency 99.9995 % (0.1 um - 0.2 um), Pre Filter : Washable , arrestance 80 - 85 %, Net weight : ±145 kg, Power : 315 W , Voltage 220 V /50 hz, Vibration : < 3 um, Noise Level : > 58 dba; Air Flow system : inside Volume of working space : 0.534 M3, volume of treated air per hour : 1071 M3 / H; Contruction : Cabinet : Elctogalvanized steel White Oven baked epoxypolyester, powder- coated Finish, Sash : UV safe Polycarbonate, INCLUDE QUALIFICATON IQ ,OQ, PQ	

No.	Nama Barang	Spesifikasi	Gambar
		b Horizontal Laminar Flow cabinets with epoxy powder coated cold-rolled steel construction or AISI 304L stainless steel on special models - stainless steel work surface or non-reflective plastic laminate panel available on special models - transparent side walls in safety glass with frontal closure shutter on demand- membrane keyboard front panel with touch sensitive buttons; Corrosion resistant epoxy powder painted steel Dupont™ ALESTA® anti-bacterial "Ag+ cations-based solution", capable to prevent microbial contamination of surfaces thereby inhibiting long term surface growth Work Surface AISI-304L stainless steel (as standard) or non reflective plastic laminate (on demand); Transparent side walls: safety glass Class H14 HEPA filter. Efficiency, higher than 99.995% MPPS -0.005% penetration -ensures performance exceeding requirements of EN1822; Class ISO 3 as per ISO:EN 14644-1 Pre-filters: G3 synthetic fibres pre-filters washable in water or with compressed air The new ECS® microprocessor employs the latest innovative methods of integrated management of all principal functions of ventilation and filtration – self regulating all the main filtration and ventilation system components - compensating for declining pressure drops and restoring power balance. Combining the use of AC motor-blowers and certified low pressure-drop filters, the new ECS® controlling system optimize power consumption, reducing CO2 emissions into the environment direct coupled motorblower fluorescent lights installed on the anterior part of the ceiling Useful Dimensions: 1190 x 734 x 600 (W x H x D) mm Overall Dimensions: 1250 x 1195 x 925 (W x H x D) mm Power: 0,9 Kw; Stand: Epoxy powder painted stand; PVC shutter fitted with UV light	
		c Vertical Airflow - Product Protection; Power requirement, 230V, 50/60 Hz; Size, (W x D x H) = approx. 1219mm x 724mm x 937mm; SS 304 work surface; UV lamp and T5 fluorescent lamp; Front loading HEPA filters; Variable speed built-in blower; Digital gauge; 10 degree angled safety glass; Light and blower switches; Steel powder coated base stand; INCLUDED: Adj.Height Base Stand	
14.	Leaf Areameter	a Measuring range Leaf area, average area, length of leaf, width of leaf, perimeter and ratio of Length and width. Display LCD; Data to PC Mini -USB interface and data can be lead in to PC; Software The recorded data can be converted to Exel and backup saved; Test unit Millimeter, square millimeter; Precision : +2%; Resolution 0.1 mm; Length ≤2000mm; Width ≤213mm; Thickness ≤3mm; Data capacity 5000 Groups; Power 3,7V Li-on battery	

No.	Nama Barang	Spesifikasi	Gambar
15.	Lemari Asam	a Useful dimension (wxdxh): approx. 823x600x660 mm, Overall dimension (wxdxh): approx. 885x760x1120 mm, Exhaust duct $\varnothing$: 200, Working aperture: 200 mm, Max front aperture: 455 mm, Weight (approx.) w/o filter: approx. 85 kg; Filter: Pre-filter (particulate), Main filter (charcoal), Hepa Filter; Electrical Supply: 220-240/50-60 V/Hz; Power: 122 W; Lighting: 2x18 Watt; Air Flow : Vol/air treated m³/h: 400, Average face speed m/sec: >0,6; Controls: Power on/off, Light on/off, Microprocessor monitoring system checking airflow, pre-filter and filter efficiency, Variable speed air regulation, Audible and visual alarms alert the operator to low/high airflow, fan failure, filter and pre-filter condition, black-out, gas detector and anemometer failure. Construction : Head section: Epoxy coated, zinc plated steel ; Base section: Anodized, aluminium; Spill tray: PVC Acid and solvents resistant; Fan Motor: Centrifugal IP54; Microprocessor controlled monitoring system, Highly effective protection from toxic vapours, High filtration efficiency, Large adsorption capacity, Filter monitoring systems, Ductless. Designed with a microprocessor controlled system for a range of data which includes type and code number of the filter being used, installation date, maximum time allowance for filter use and a warning date for its replacement. Audible and visual alarms are also available to protect the operator. These alarms cover out of range minimum and maximum air velocity, filter saturation, pre filter clogging, anemometer failure, gas detector failure and motor fan malfunctioning. Equipped with fluorescent lighting as well as optional gas/vacuum tap and power point. BUILT IN SAFETY: All electronic components, switches, lighting and motor fan have been selected and installed fully isolated from air contaminated with solvents and therefore meet the most stringent safety requirements such as EN 61010/1. Current directives of the European Community are also covered as certified by the CE mark.	

No.	Nama Barang	Spesifikasi	Gambar
		b Exterior Dimension (WDH); 4 feet : 48 x 36 x 89 inch or 121.92 x 91.44 x 226.06 cm; Working Area Dimension (WDH); 4 feet : 40 x 25 x 37 inch or 101.60 x 63.50 x 93.98 cm; Sash Opening (WH); 4 feet : 40 x 28 inch or 101.60 x 71.12 cm; Sash Opening Sq. Ft. : 8.1; Total CFM and Static Pressure : 80 FPM S.P. 100 FPM S.P. 120 FPM S.P 650 0.15" 810 0.25" 980 0.35" Static pressures shown are for the pressure drop through the hoods only. The total pressure drop through the hood and the duct system must be calculated to select the proper exhaust fan. Certification: ASHRAE 110-1995 Superstructure Frame: A free-standing rigid frame structure of steel angle shall be provided to support exterior panels and interior liner and baffle panels Interior Walls: Double wall ends, not more than 4" wide, shall be provided to maximize interior working area. Airfoil: A streamlined airfoil shall be integral at the bottom of the hood opening on bench and distillation hoods Baffles: A stable, non-adjustable baffle with three fixed horizontal slots shall be provided to aid in distributing the flow of air into and through the hood. The baffle shall be spaced out 2-1/4" from the back liner. The baffle shall be removable for cleaning Sash: A vertical rising sash of 1/4" laminated safety float glass shall be provided Worktop : 25 mm thickness Chemical Resistant Epoxy Resin Worktop (KEMRESIN) Flammable/ Solvent Base Cabinet with double panel construction Liners: Interior liner panels shall be 1/4" thick fiberglass reinforced polyester sheet. Interior liner panels shall be fastened using stainless steel screws with plastic covered heads Fitting : Laboratory grade water faucet for cold water, certified to BS EN 5412 : 1996, BS EN 248 : 2002, SS 375 : 2001, and AS/NZS 4020 : 2005 (Gas faucet is OPTIONAL, not supplied on standard configuration) Cup sink: PP material, flushed installed with the worktop Bottle Trap : PP material Exhaust System : Chemical resistant centrifugal fan RPM : 1450, Capacity : 900CMH@540Pa, 4800CMH@180Pa, Power Rating : 1.1 kW, Voltage / Phase : 415V / 3-phase, Elec Frequency : 50 Hz Housing / Casing : Single block strong high density UV treated and recyclable polypropylene (PPH) with no welded joint. Reversible and rot able to any the 8 standard discharge positions by 45° increments Wheels: Forward curved centrifugal type impeller made, of injection molded PPH Fan wheel supplied with hub cap constructed of PPH. Wheels electronically and dynamically balanced to ISO 1940 Motors : Direct drive, asynchronous, single or three phase, IP55. Single speed: three phase 230/400 V-50/60Hz, single phase 230V-50Hz. Explosion proof motors available on request. Motor is outside the airstream. Three phase motors speed adjustable by variable frequency inverter drive. Performance: Fan performance based on tests conducted in accordance with AMCA 210-85 and ISO 5801. PPH casing and wheel recommended up to 60°C. Ducting : Standard PVC pipe min. with 10 inch diameter Illumination : Standard TL fluorescent lamp Include : 4 Ft Supreme Air General Purpose Fume Hood Standard Package, Chemical Resistant Centrifugal Fan, Basic Exhaust System Installation Package, Flammable/ Solvent Base Cabinet	

No.	Nama Barang	Spesifikasi	Gambar
		c Size : approx. 1500 x 850 x 2400 (H) mm; Size outer : upper cabinet approx. 1500 x 850 x 1500 (h)mm, lower cabinet approx. 1500 x 850 x 900 (h)mm, Size inner : upper cabinet approx. 1200 x 700 x 1300 (h)mm, lower cabinet approx. 1350 x 700 x 750 (h)mm; Inside Wall & Baffle Phenolic Resin Laboratory grade 6 mm; Outside Wall Phenolic Resin Laboratory grade 16 mm; Top Table, Epoxy Resin Laboratory Grade thicknes 15 mm Heat; Resistance until 350 °C; Lower cabinet : Include Storage base cabinet (2 doors) ea; Complete with Acessories are : 1 Set Double electric socket Legrand IP 55, 1 Set Water fitting front control and valve, 1 Set PP Cup Sink Type 500 dia. 17 cm include PP trap, Flourescent lamp water tight 2x20 VA include on/off switch, 1 Set Blower Chemical resistance blower material Polypropylane, power 1 HP, 50 Hz, 3phase,380 V; Include electric motor, magnetic switch & indicator lamp, PVC ducting dia. 6" - 8" max. 6 meter: Volume of air : +/- 3300 M3/hr or 1942,3 CFM, Static Pressure : +/- 250 Pa(N/M2), Drive horse power : 1 HP, 50 hz, 3 phase, Speed of fan : 1400 Rpm, Speed of motor : 1400 Rpm, All items of work that quoted by locally production and will have technical specification as follows: Galvanized Steel Structure , finish epoxy Powder coating chemical resistance, Hing, reel and plastic handles ex Import, safety glass sash door : laminated / tempered clear glass 6 mm, Include Calibration, INCLUDE QUALIFICATON IQ ,OQ, PQ	
		d Dimensi (p x l x t) : approx. 1500 x 600 x 2400 mm Material: Mild steel min 1.2 mm finishing epoxy coat Alas Meja Kerja: Plenolic resin Black Tahan Larutan kimia dan asam Pintu: Rail Stainless, Sliding dengan Kaca transparan Lampu : TL 1 x 20 Watt Voltage : 220 VAC 1 unit Blower : Chemical resistant min 1/2 PK Include Pipa Blower : Terbuat dari PVC dia min 8" Cerobong Scrubber Instalasi Listrik : Dirancang sedemikian rupa sehingga mudah diperbaiki Pengaturan On/off listrik , blower : Terdapat disisi depan lemari asam Water Outlet : Bench berbahan Khusus tahan kimia Nozzle : Polypropylene dan tahan terhadap tumpahan larutan kimia Sink : Polypropylene dilengkapi dengan bottle trap 1 set Instalasi air : PVC Pengaturan Kran air terdapat di sisi depan lemari asam	
16.	Microskop Binocular	a CFI Infinity Optical System 40 - 1000 X Quadruple click-stop nosepiece Eyepiece tube (anti-mold): Binocular tube (inclination: 30°; 360° rotatable Siedentopf-type, Interpupillary distance: 47-75 mm) Eyepoint height can be raised 34mm by swinging the eyepiece tube front part E1-CFI 10X (F.O.V 18mm) Coarse motion: 37.7mm per rotation, Fine motion: 0.2mm per rotation with 2µm scale increments Abbe condenser (made of glass), N.A 1.25 CFI Plan Achromat 4x, 10x, 40x, 100x oil High luminescent white LED illuminator with Fly eye lens is a low power LED for 60,000 hours operation, Includes : E100 LED Main body (220-240V) Binocular Eyepiece Tube, anti-mould Eyepiece 10X with diopter adjustment on each eyepiece Abbe condenser with objective position guide Plan Achromat 4X, N.A. 0.10, W.D. 25mm (FOV18) Plan Achromat 10X, N.A. 0.25, W.D. 6.7mm (FOV18) Plan Achromat 40X, N.A. 0.65, W.D. 0.6mm (FOV18) Plan Achromat 100X oil, N.A. 1.25, W.D. 0.14mm , spring- loaded (FOV 18mm) Immersion oil A, 8cc Power Cord BE Anti-mold agent	

No.	Nama Barang	Spesifikasi	Gambar
		b Optical System UIS2(Universal Infinity System) optical system; Illumination Built-in transmitted Kohler illumination system, 2.4 W LED; System Focusing Stage height movement (coarse movement stroke: 15 mm) · Stroke per rotation for coarse adjustment knob: 36.8 mm, Focusing stopper · Torque adjustment for coarse adjustment knob · Fine focus knob (minimum adjustment gradations: 2.5 μm); Nosepiece Revolving quadruple nosepiece Inward; Stage Wire movement mechanical fixed stage, (W × D): 211 mm × 154 mm · Traveling range (X × Y): 76 mm × 52 mm ; Single specimen holder · Specimen position scale · Stage XY movement stopper; Observation tube 30° inclined binocular tube, interpupillary distance adjustment range: 48-75 mm; Eyepiece A pair (10X), Field Number (FN) : 20 (anti-fungus); Condenser Abbe type with aperture iris diaphragm, NA : 1.25; Objective lens Plan Achromatic 4X, NA: 0.10, WD: 18.5 mm (anti-fungus); Plan Achromatic 10X, NA: 0.25, WD: 10.6 mm (anti-fungus); Plan Achromatic 40X, NA: 0.65, WD: 0.6 mm (anti-fungus); Plan Achromatic 100X, NA: 1.25, WD: 0.13 mm (anti-fungus); COVER015 Dust cover No.015; UYCP Power Cord	
		c Magnification: 40X- 1600X; Optical Head: Sliding Binocular Head, Interpupillary Distance 55 - 75 mm; Nosepiece: Quadruple revolving nosepiece; Eyepiece: Pair Eyepiece WF 10X /18 mm Widefield Pair Eyepiece P 16X; Objectives: BOECO Semi-plan Achromat DIN Objective 4x/0.10 BOECO Semi-plan; Achromat DIN Objective 10x/0.25 BOECO Semi-plan Achromat DIN Objective 40x/0.65, spring loaded BOECO Semi-plan Achromat DIN Objective 100x/1.25, Oil, spring loaded; Stage: Double layer mechanical specimen stage. 140 x 140 mm Travel area 75 x 50 mm, Right hand stage handle; Focusing: Low position, coaxial coarse and calibrated fine focus control, with graduation reading 2 microns per division. Total focusing range 20 mm., Safety autofocus stop unit. Condenser: Abbè Brightfield condenser, n.A. 1.25, Integrated Iris diaphragm and filter tray. With rack & pinion height adjustment; Illumination: 6V 20W Halogen, light intensity adjustable; Body /power: Sturdy body with supportive rubber and inbuilt power supply 110-240V; Supplied with: Dust cover, blue + green filter, immersion oil, 1 spare halogen bulb and instruction manual Dimension min. 170(W) x 250(D) x 375(H) mm; Weight: min. Netweight 7,65 kgs, Grossweight 9,5 kg; Packing: Two styrofoam shelves in a cardboard box, 290(W)x330(D)x530(H) mm	

No.	Nama Barang	Spesifikasi	Gambar
17.	Microskop Fluorescence	a Optical System : UIS2 (universal infinity-corrected) optical system Illumination System : Built-in transmitted illumination system, Köhler illumination (fixed field diaphragm), LED power consumption 2.4 W (nominal value), precentered LED reflected fluorescence illuminator (peak excitation wavelength 470 nm: B excitation only), precentered, 45G-533 FILTER Focusing : Stage height movement (coarse movement stroke: 15 mm), Stroke perrotation for coarse adjustment knob: 36.8 mm, Focusing stopper, Torque adjustment for coarse adjustment knob Fine focus knob (minimum adjustment gradations: 2.5 μm) Revolving Nosepiece : Fixed quintuple nosepiece with inward tilt Stage : •Wire movement mechanical fixed stage, (W $\times$ D): 211 mm $\times$ 154 mm, Traveling range (X $\times$ Y): 76 mm $\times$ 52 mm, Single specimen holder (optional: double specimen holder, sheet holder), Specimen position scale, Stage XY movement stopper Observation Tube : (anti-fungal) Trinocular Eyepiece (anti-fungal) : 10X Field Number (FN): 20, Tube Inclination 30°, Light Path Selector None (eyepiece/camera port = 50/50 fixed), Centering telescope Interpupillary Distance : Adjusting Range 48–75 mm Condenser : Universal condenser with 7 turret positions: BF (4–100X), 2X, DF, Ph1, Ph2, Ph3, Built-in aperture iris diaphragm, AS lock pin Observation Methods : Brightfield , Darkfield, Phase Contrast & Fluorescence Plan achromat phase contrast Objectives (UIS2): anti-fungal Plan achromat objective 4X/0.1, WD 18.5; Plan achromat phase contrast objective 10X/0.25, WD 10.6; Plan achromat phase contrast objective 20X/0.4, WD 1.2; Plan achromat phase contrast objective 40X/0.65, WD 0.6; Plan achromat phase contrast objective 100X/1.25, WD 0.15 (spring, oil) Centering telescope Rated Voltage/Electric Current AC 100–240 V 50/60 Hz 0.4 A).INCLUDED: Installation, Training, Certificate of Origin b Microscope with space-saving compact design (small footprint); Optical system: CF160 Infinity Optical System, Magnification: 100 - 1000 x; Eco-Illumination: High luminescent white LED illuminator with Fly eye lens is a low power; consumption eco-friendly light source; Reducing lamp replacement with a long-life LED for 60,000 hours operation; LED illuminator offers low-heat generation & provides the same color temperature in every magnification; Eyepiece: 10 x (F.O.V : 25mm /0.9 in); Coaxial Coarse/Fine focusing: Focusing stroke: 30mm, Coarse: approx. 9.33mm/rotation, Fine: 0.1mm/rotation, Minimum reading: 1um Coarse motion torque adjustable; Eyepiece tube: Trinocular Tube "T" 3 way, Eyepiece : Port 100:0 /20:80 /0:100; Nosepiece: Sextuple nosepiece fixed on main body; Ceramic-coated Stage with specimen holder for 2 slides opens to the left, coarse motion torque adjustable; Cross travel: approx. 78x54mm (X-Y), with vernier calibrations, stage handle height and torque adjustable; Stage handle with height adjustment for smooth stage movement in a comfortable hand position; Condenser focusing stroke: approx. 27 mm; Achromat Swing-out Condenser, N.A. 0.90; Built-in Image capture button: One simple click of the button during observation enables to capture specimen; image with the Digital Sight camera; Available option for more comfortable operation are Ergonomic binocular tube (angle up to 30 degree & extention, up to 40mm are adjustable), eyelevel riser to increase multiusers flexibility, nosepiece spacer for lower stage	 

No.	Nama Barang	Spesifikasi	Gambar
		positioning, Intermediate accessories: Epi-Fluorescence illuminator with Mercury 100W (4 filter blocks mountable), Observation method: Brightfield, Fluorescence; Power Consumption: 6 Watt and 100 watt for Fluorescence system; Consisting of: Ci-L Main Body for right side stage, Capture button, fixed diffuser, field diaphragm, adjusting tools (1 piece), Dual Coarse/Fine focusing with re-focusing mechanism & torque adjustment; Built-in lamphouse for white LED illumination; Power cord, C-CSR Right Handle Ceramic Stage, C-H2L Specimen Holder 2L for Ceramic Stage; C-TT Trinocular Tube T (for F.O.V 22mm/25mm, observation/photo: 100:0, 20:80, 0:100); Eyepiece Lens CFI UW 10X (F.O.V. 25mm) 2pcs; C-N6 ESD Sextuple Nosepiece ESD; CI-FL Epi-fluorescence Attachment; C-FC Epi-FL Collector Lens; C-FC Epi-FL Centering Tool; Lamphouse HMX-3B; Mercury Lamp Socket S 100W for HMX-3B; C-LHG1 Mercury Lamp HG-100W; C-SHG1 Power Supply for Mercury Lamp HG-100W; C-FL Epi-Fi Filter Block N B-2A (EX450-490, DM505, BA 520); C-FL Epi-Fi Filter Block N G-2A (EX510-560, DM 575, BA 590); Achromat Swing-out Condenser, N.A. 0.90; CFI Plan Fluor 10X, N.A. 0.30, W.D. 16.0 mm; CFI Plan Fluor 20X, N.A. 0.50, W.D. 2.1 mm, Spring-loaded; CFI Plan Fluor 40X, N.A. 0.75, W.D. 0.66 mm, Spring-loaded; CFI Plan Fluor 100X Oil, N.A. 1.30, W.D. 0.2 mm, Spring-loaded, Stopper; Immersion Oil F2, 30cc; Anti-Mould Agent; Dust Cover H600L; C-CTC Camera Trigger Cable U3/L3	
18.	Oven	a Gravity convection technology for gentle drying & heating with low air turbulences; Perfect for working with materials that are sensitive to airflow such as powders and foils; Interior material: stainless steel 1.4301; Rounded interior corners; Microprocessor control; Automatic overtemperature alarm; Stackable with optional stacking kit; Easy calibration, routine check upon startup for optimum performance; Timer function: choice of weekly / hourly / realtime; Fresh air damper: electronically controlled; Access port for independent data monitoring; RS232 Interface; Programmable ramps and dwells; Boost function for accelerated heat-up; Dry alarm contact for connection of alarm device; Large, easy to view vacuum fluorescent digital display; Temperature range: 50-330°C; Spatial temperature deviation at 150°C: $\pm 3^{\circ}\text{C}$; Temperature deviation over time at 150°C: $\pm 0.3^{\circ}\text{C}$; Footprint: 0.36 m²; Chamber volume: 99 liter; Chamber dimensions: 438 x 580 x 389 mm (WxHxD); Exterior dimensions: 640 x 820 x 565 mm (WxHxD); Number of shelves: 2 pcs supplied, max. 16 pcs; Max. shelf load: 25 kg; Power: 230V, 50Hz, 3,100 W, 13.5A. b Textured Stainless Steel Casing: w x h x d: 745 x 867 x 584 mm, fully insulated stainless steel door with 2-point locking (compression door lock), rear zinc-plated steel; Interior - Heating Concept: w x h x d: 560 x 480 x 400 mm, 108 l, easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing with integrated and protected large-area heating on four sides: • 2 stainless steel grids, • Max. loading of chamber: 175 kg; Temperature Range: • min. 5°C above ambient up to +300°C Voltage / Power Rating, • 230 V (+/- 10%), 50/60 Hz / approx. 2.800 W, • 115 V (+/- 10%), 50/60 Hz / approx. 2.200 W	 

No.	Nama Barang	Spesifikasi	Gambar
		c It will also use a gravity-convection when drying minuscule samples such as those that come in powered form. This equipment can also be used for drying, baking, sterilizing, evaporating, heat-treating, annealing, testing, etc. Temp. Range : Ambient +10°C to 220°C (ambient +18°F to 428°F).; Air circulation type : Natural.; Time range : 00.00 to 99Hr 59min (MIN SEC) Selectable Digital Counter Timer.; Temp. & Time controller : microprocess PID membrane Touch Digital Controller.; Heater capacity : 1200 W.; Capacity : 100 L.; Material Internal : Stainless steel.; Material external : Steel Plate with powder heating coated.; Shelves : 2 supplied (15 maximum). Safety device : Automatic reset function incoming power cut, Buzzer on when set time arrived, Door open alarm, Electric leakage breaker, Over temp. Controller.; Dimension external : 630Wx540Dx930Hmm.; Weight : 50kg.; Electrical requirements : 230V, 50/60 Hz, 1phase, 5.2 A	
		d Measures: Interior volume [L] 114, Net weight of the unit (empty) [kg] 54, permitted load [kg] 150, Load per rack [kg] 30; Temperature range 6 °C above ambient temperature to [°C] 300; Temperature variation at 150 °C [± K] 2.0; Temperature fluctuation at 150 °C [± K] 0.4; Heating-up time to 150 °C [min] 45; Recovery time after 30 seconds door open at 150 °C [min] 16; Electrical data: Rated Voltage [V] 230, Power frequency [Hz] 50/60, Nominal power 1250 Watt, Unit fuse [A] 6.3, Phase (Nominal voltage) 1~; Measures – Doors: Unit doors 1; Measures - Internal Dimensions: Width [mm] 510, Height [mm] 530, Depth [mm] 425; Measures - Outer dimensions: Width net [mm] 710, Height net [mm] 735, Depth net [mm] 605, Wall clearance back [mm] 160, Wall clearance sidewise [mm] 100; Energy consumption at 150 °C 250 Wh/h; Number of shelves (std./max.) 2/5; High temperature accuracy thanks to APT.line™ technology; Natural convection; Controller with LCD display; Electromechanical control of the exhaust air flap; 2 chrome-plated racks; Units up to 115 L are stackable; Class 2 independent temperature safety device (DIN 12880) with visual temperature alarm; Ergonomic handle design; Excellent temporal and spatial temperature accuracy and high energy efficiency.	
19.	PCR	a 1 chassis with a single 96 well block; Format: Single block; Block Options: 96 well format; Maximum heating rate: 3.4°C per second; Block temperature range: 10°C to 100°C (4°C final hold); Block uniformity at 55°C: ± 0.3°C; Temperature accuracy at 55°C: ± 0.25°C; Gradient: Yes (on all formats); Maximum Gradient: 29°C; Minimum Gradient: 1°C; Maximum number of programs stored: 1000; Maximum fan noise: 50dB; Peltier element type: 8; Adjustable heated lid temperature: 35°C to 115°C or off; Heated lid pressure: Adjustable; Software platform: Android; Program interface: 7" inch HD; Data transfer: USB port; Auto re-start on power failure: Yes; Dimensions (LWH) in mm: approx. 430 x 260 x 200; Weight: approx. 11.8kg; Voltage: 100-230, 50-60Hz; Power: 450W; Electricity (standard 30 cycle program): 0.3 kWh	

No.	Nama Barang	Spesifikasi	Gambar
20.	PH-Meter	a Automatic battery check; Power Supply : 9 V-block; Auto – OFF : Yes; Measuring Range : 0 - 14 pH; Portability : Portable; Environmental Conditions : 0 - 50 °C; 0 - 80 % rel. humidity (non condensing); Compliance : CE; Protection Class : IP 30; Dimensions : approx.110 x 34 x 208 mm; Weight : approx. 380 g; series meters can be used to measure pH; The protective armor does not guarantee a secure grip but also protection against falls. The stand attached to the back of the housing can also be used as a hanger or belt clip; Data gained is virtually "frozen" on the display by this function. This not only makes it easier to read the results, it also improves reproducibility. INCLUDE: Battery; pH buffer (4.01/7.00); pH-plastics electrode-type 226	
		b pH range: -2.000 to 16.000 pH; pH resolution: 0.001pH, 0.01pH; accuracy (pH): +0.01pH, +0.002pH, pH Calibration: 5 point (standard mode) 1.68, 4.01, 6.86, 7.01, 9.18, 10.01, 12.45 and two custom buffer; pH Temperature Compensation ATC: -5.0 to 100.0°C; mV Range: ±1000.0 mV; ±2000.0 mV; mV Resolution:0.1 mV; mV Accuracy: ±0.2 mV (±999.9 mV); ±1 mV (±2000 mV); Relative mV Calibration Single point calibration; Temperature Range: -20.0 to 120.0 °C; Temperature Resolution: 0.1 °C, 0.1 °F; Temperature Accuracy ±0.5 °C, ±0.9 °F; pH Electrode Diagnostics: Glass and reference junction diagnostics (HI 11311 & HI 12301 only), out of calibration range , probe condition, response time; GLP: Yes; Logging: up to 1000 records organized in: Manual log-on-demand (Max. 200 logs), Manual log-on-stability (Max. 200 logs), Interval logging (Max. 600 samples; 100 lots); Connectivity: 1 micro USB port for charging and PC connectivity, 1 USB port for storage; Environment: 0 to 50°, RH max 95% non-condensing; Battery Type/Life: Built-in rechargeable battery with up to 8 hours of continuous use; Power Supply: 5 VDC adapter (included); Dimensions: approx. 202 x 140 x 12.7mm; Weight: approx. 250 g; include: benchtop docking station with electrode holder, wall mount cradle, USB cable, glass body refillable pH electrode with temperature sensor, 2 sachets each of pH 4, 7, 10, cleaning solution, 5 VDC power adapter and instruction manual.	
		c pH: Range: -2.00 to 19.99; Resolution: 0.1 / 0.01 / 0.001; Relative Accuracy: ±0.02; Auto-Buffer-Recognition: 4.00, 7.00, 10.00 Temperature: Range: -10 to 110?; Resolution: 0.1?; Relative Accuracy: ±0.4? Millivolts: Range: ±1999.9mV; Resolution: 0.1mV; Relative Accuracy: ±0.1mV Temperature Compensation: Auto Calibration: Auto (3 Points) / Manual (3 Points) Datalog: 100 Point Print Capability: Yes Display: Custom LCD Inputs: BNC, ATC, Power, RS232C Outputs: Recorder, RS232C (Computer / Printer) Power: AC/DC Power Adaptor Certification: ISO9001, CE mark Dimension: approx. 200(L) x 260(W) x 90(H) Weight approx. 0.95kg include: Combination pH Electrode; ATC Probe; Buffer Solution (pH 4.00, 7.00, 10.00)125ml; AC/DC Power Adaptor; Instruction Manual	

No.	Nama Barang	Spesifikasi	Gambar
21.	Power Qualitymeter	a DC Voltage Ranges 500 mV, 5 V, 50 V, 500 V, 750 V; Accuracy $\pm (0.5 \% + 5 \text{ counts})$; True-rms Voltages (V ac and V ac+dc) Ranges 500 mV, 5 V, 50 V, 500 V, 750 V; Accuracy for 5 % to 100 % of range (AC or dc coupled) 60 Hz to 20 kHz $\pm (2.5 \% + 15 \text{ counts})$; Frequency Response - DC Coupled; Without probes and test leads (with BB120) dc to 40 MHz (-3 dB) With STL120-IV 1:1 shielded test leads DC to 12.5 MHz (-3 dB) / dc to 20 MHz (-6 dB) with VP41 10:1 Probe dc to 40 MHz (-3 dB); Frequency Response - AC Coupled (If roll off) Without probes and test leads <10 Hz (-3 dB); With STL120-IV 1:1 shielded test leads <10 Hz (-3 dB); With VP41 10:1 Probe <10 Hz (-3 dB); Rise time, excluding probes, test leads <17.5 ns; Power Quality: Readings Watt, VA, var, PF, DPF, Hz; Watt, VA, var ranges (auto) 250 W to 250 MW, 625 MW, 1.56 GW; Number of Harmonics DC to 51; Bus health tester; AS-i NEN-EN50295; CAN ISO-11898; RS-232 EIA-232; RS-485 EIA-485	
22.	Refractometer	a Measuring range nD : 1.3200 - 1.5000; Brix : 0 - 85%; HFCS42 : 0 - 76%; HFCS55 : 0 - 80%; Accuracy nD : ± 0.0005 ; Brix : $\pm 0.2\%$; HFCS42/55 : $\pm 0.2\%$; Resolution nD : 0.0001; Brix : 0.1%; HFCS42/55 : 0.1%; Temperature range : 10 - 40°C; Display contents : Refractive index, Temp. comp. RI, Brix, HFCS42, HFCS55, and Temperature ($\&de^{\circ}\text{F}$); Wide measuring range Brix : 0 - 85%; Refractive index : 1.3200 - 1.5000; Data storage : 1,100 measurement results; Can display measurement results in Refractive Index (RI), Temperature compensated RI, Brix % and the like; Three different sucrose conversion tables Brix and isomerized sugar HFCS42, HFCS55; Automatic data saving and Automatic data output can be chosen; Applications : Measurement of sucrose concentration of fruits juices, Measurement of sucrose concentration of jam and honey, Brix measurement on beverages, Brix measurement on liquid seasoning, Concentration control on pharmaceutical and medical liquid sample; Sample number, Data storage, Data output, Data deletion, Battery alarm and the like; Temperature compensation : Up to 10 kinds of input for temperature compensation coefficients of measured samples and compensation temperatures	
		b 1.3300-1.5080 Refractive Index range with +/- 0.0005 accuracy; 0-85% Brix range with +/- 0.2% accuracy; Simple one-button calibration; Automatic Temperature Compensation (ATC) and No Temperature Compensation Settings (NoTC); Sugar Content Range: 0.0 to 85.0% Brix; 1.3300 to 1.5080 nD; 1.3330 to 1.5040 nD??; Sugar Content Resolution: 0.1 % Brix; 0.0001 nD; 0.0001 nD??; Sugar Content Accuracy (@25°C/77°F): $\pm 0.2\%$ Brix; ± 0.0005 nD; ± 0.0005 nD??; Temperature Range: 0 to 80°C (32 to 176°F); Temperature Resolution: 0.1°C (0.1°F); Temperature Accuracy	
		c Digital Refractometer, Brix, Salinity and Refractive Index; Brix Measuring range: 0-50%; Resolution: 0.1%; Salinity range: 0-28%; Resolution: 0.1%; Specific gravity range: 1.000-1.217; Resolution: 0.001; Refractive index: 1.3330-1.4200; Resolution: 0.0001; Precision of temperature measurement: 0.5°C, 0.9°C; Resolution: 0.1°C. Alarm of low battery	

No.	Nama Barang	Spesifikasi	Gambar
		d Abbe bench-top refractometer measures refractive index ND and average color dispersion; NF-NC of transparent and semi-transparent liquid or solid samples; Main prism: horizontal; Secondary prism: fitted on a hinge; Refraction index scale: Nd 1.300 – 1.700; Precision: Nd $\pm$ 0.0003; Division: Nd 0.0005; Sugars scale: 0-95% from Nd 1.300 – 1.530; Precision: 0-50% = 0.2%; 51-95% = 0.1%; Division: 0.25%; Thermometer scale: 0°C - 70°C, div. 1°C; Weight: 4 Kg; Size: approx. 140x100x235 mm	
23.	Rotary Evaporator	a Rotation speed range : 10 – 280 rpm; Bath temperature setting : 3.5" LCD Display; Temperature accuracy bath : $\pm$ 1 °C; Heating capacity : 1.300 W; Overheat protection bath : cut-off at 5 °C over set temperature via separate PT 1000; Volume heating bath : 4.5 L; Max. size evaporating flask : 5 L; Display : yes; 3.5" LCD Display; Timer : yes; Supply Power : 1.400 W; Condensing surface : 1.400 cm ² ; Equipped with proven smart details such as Easy-Clip, patented clamping sleeve, lift stop to limit immersion depth, universal 5-L-heating bath, various glass accessories etc; Hand lift model with G3 vertical glassware; Clear digital display for monitoring the current values and separate button to display the set values; To protect the electronics, the operating panel is splash water protected in accordance with IP 42; Two separate operating knobs for adjusting the rotation speed and heating temperature with LED ring light system for activity indication; Activated lock feature prevents inadvertent adjustments; Residual heat indicator when >50 °C; Standby button stops all functions; Ergonomically optimized heating bath handles sit securely in your hand; Easily adjust immersion depth up to 155 mm and the tilt angle of the evaporating flask from 20° to 80°; Grease-free operation thanks to innovative sealing technology; Ventilation cap with PTFE inlet and free of ground joints.	
		b Rotation speed 10 ~ 310rpm; Evaporation capacity Max. 23mL/min (Water evaporation); Rotation speed setting & display Setting by dial Digital display; Jack function Manual balancing system (Jack stroke 180mm, stepless); Motor DC brushless motor; Heater 1kW; Vacuum seal (Teflon +Teflon Viton double seal) 1 set, Genuin parts: vacuum seal 2 sets; Bath inner dimensions (mm) ID 240 x 120H; Bath material & capacity: Aluminum (Teflon coating) 5L;Bath inlet terminal For connection to evaporator main unit driving part Max. 2A; Bath connection nozzle : Cooling hose nozzle Suction nozzle OD 10mm; Ambient temperature 5~35°C; Dimensions V: approx. 531W x 352D x 823(1003)H approx. 13.4kg (Max. height) (mm); Power source 1.1kVA · AC115V/2.5kVA · AC230V, 50/60Hz; Bath: Water bath / oil bath; Bath temp. Control range & accuracy RT +5 ~ 180°C & $\pm$ 1.5°C (oil $\pm$ 3°C); Glassware: S type condenser: Diagonal double helix condenser (cooling area 0.146m ²), Rotary joint: 29/38, ID 18x L 272mm, Sample flask (Eggplant shape): 1L 29/38, Receiving flask (Round bottom shape): 1L Ball joint S35/20	

No.	Nama Barang	Spesifikasi	Gambar
24.	Soilmeter	a The Model is a self-contained, electronic soil analysis laboratory that provides accurate answers anywhere for fifteen soil factors, including available forms of macronutrients and critical micronutrients. The Colorimeter instantly analyzes color reactions developed in nutrient tests. Display readings are multiplied by a conversion factor specific to each test to provide a result in parts per million (ppm) or pounds per acre (lb/acre)—no further calculations are necessary. The simplified test procedures provide at least 20 tests for each soil nutrient. The meter measures the pH of a one-to-one solution of soil and distilled water over the range of 0-14 pH units to a sensitivity of ± 0.01 pH. Soluble Salt levels in soils and irrigation waters are monitored accurately with a TDS meter, measuring Dissolved Salts from 0-999+ ppm. Colorimeter Tests : Nitrate Nitrogen : 0-300 lbs/acre, Nitrite Nitrogen : 0-40 lbs/acre, Ammonia Nitrogen : 0-200 lbs/acre, Phosphorus : 0-99 lbs/acre, Potassium : 0-500 lbs/acre, Sulfur : 3-94 ppm, Copper : 0-30 ppm, Iron : 0-30 ppm, Manganese : 0-75 ppm, Zinc : 0-15 ppm; Direct Reading Titrator Tests : Calcium : 0-4000 lbs/acre; 50, Magnesium : 0-2400 lbs/acre; 50, Chloride : 0-1000 lbs/acre; 50; Battery-Powered Meters pH : 0-14, TDS : 0-99.9 ppm; 100-999 ppm; 1.00-9.99 ppt	
25.	Timbangan Analitik	a capacity (g) 210; Repeatability (Std Dev) 0.1mg; Readability d (g) 0.0001; Linearity (mg) 0.3; Application modes : weighing, part counting, percent; platform size (mm) 90 dia. Cal Weight-Span (g) 100g or 200g; Cal Weight-Linearity (g) 100g+200g; Taring Time 1 Second; Stabilization Time 3 Seconds; Draftshield	
		b Capacity: 220 g; Minimum display: 0.1 mg; Pan size: $\varnothing$ 91 mm; Repeatability : $\pm$ 0.1 mg; Linearity : $\pm$ 0.2 mg; Durable, high-performance aluminum alloy mass sensor, Automated calibration can be started by pressing keys.	
		c Maximum Capacity 220 g; Readability 0.1 mg; Repeatability (Test Weight) 0.1 mg (200 g); Minimum Weight (USP), Typical 0.16 g; Weighing Pan Diameter 90 mm; Interfaces RS232; Adjustment Internal; Resolution 0.1 mg; Housing Die-cast aluminum, plastic ABS; Dimensions (DxHxW) 344 mm x 344 mm x 210 mm; Hygienic Design	

No.	Nama Barang	Spesifikasi	Gambar
		d Automatic internal adjustment in the case of a temperature change > 2 °C and time-controlled every 4 hours; Weighing capacity [Max] : 220 g; Readability [d] : 0.1 mg = 0,0001 g; Verification value [e] : 1 mg; Minimum load [Min] : 0,01 g; Reproducibility : 0.2 mg; Linearity : 0.3 mg; Large LCD display, digit height 14 mm; Weighing plate dimensions (Pan size) : stainless steel, Ø 91 mm; Overall dimensions WDH 210x340x325 mm; Weighing space WDH approx. 174x162x227 mm; Permissible ambient temperature 10 °C / 30 °C; Net weight approx. 6 kg	
26.	Spectrophotometer	a Optical Design : Dual beam; Spectral Bandwidth : 2 nm; Light source : Xenon Flash Lamp; Detector Type : Dual Silicon Photodiodes; Wavelength Range : 190 nm - 1100 nm; Wavelength Accuracy : ±0.5 nm; Wavelength Repeatability : < ±0.2 nm; Wavelength Scan Speed : Slow, medium and fast - up to 1600 nm/min; Wavelength Data Resolution : 0.2 nm, 0.5 nm, 1 nm, 2 nm, 5 nm; Photometric Range : -2A to +3.5A; Photometric Display : -3A to +5A; Photometric Accuracy Instrument : ±0.002A at 0.5A, ±0.004A at 1.0A, ±0.008A at 2.0A; Photometric Repeatability : ±0.001A at 1A; Noise : (RMS at 500 nm 60 consecutive measurements) ±0.00020A at 0A at 260 and 500 nm, ±0.00030A at 1A at 260 and 500 nm; ±0.00040A at 2A at 260 and 500 nm; Drift : (At 500 nm after 1 hour warmup) <0.0005A/Hr; Stray Light : < 1.0%T 198 nm (KCl) , <0.05%T at 220 nm (NaI), <0.03%T at 340 nm (NaNO ₂); Baseline Flatness : ±0.002A; Display : 7-inch color touchscreen, tiltable, high definition, 800 × 1280 pixels; Keypad : Touchscreen; Dimensions (LWH): approx. 35.5 x 38.5 x 19.5 cm; Weight (Metric): approx. 7.5 kg; Power Requirements : External AC to DC converter. Voltage and Frequency (Hz) selected automatically, 100-240 volts, 50-60 Hz. Include : 8 Position Carousel for 10mm Pathlength Cells, Quartz cuvette; Qty : 8 pcs, Printer Assembly	
		b Optical System Split beam; Scan Speed Selectable; Wavelength range 190 - 1100nm; Wavelength Accuracy : ± 0.1 nm; Wavelength Reproducibility : ±0.2nm; Spectral Bandwidth : 2.0 nm; Photometric mode : Transmittance, Absorbance, Energy; Photometric Range : -0.3 - 3.0 Abs; Photometric accuracy : 0.002A (0-0.5A), 0.004A (0.5 -1.0A), 0.3%T (0-100%T); Photometric Reproducibility : 0.001Abs (0 - 0.5A), 0.002A (0.5 - 1.0A), 0.15%T (0 -100%T); Photometric Noise : 0.001A (500nm) 30min warm-up; Baseline Flatness : 0.002A (200 - 1000nm); Baseline Stability : 0.001A/h (500nm, 0Abs), 2hr warm-up; Stray Light : ± 0.05% T (220nm NaI, 340 nm NaNO ₂); Standard Functionality : Photometric Measurement (Quantitative, Multi-wavelength, Spectrum and Kinetic Measurement with program card); Detector : Silicon photo diode; Light Source : Tungsten Halogen and Deuterium arc lamps; Display : Digital LCD Display; PC Interface : RS232; Power Supply : Switchable 95 - 250VAC 50 - 60Hz; Software Support : Local and UV Win; Weight : 11 Kg; Dimensions (Width, Depth, Height) : 476 mm, 362 mm, 225 mm; FEATURE & FUNCTIONS: High performance fixed 2nm spectral bandwidth, Low stray light 0.05%T (T60U), Wavelength accuracy +/- 1nm (T60U), Holographic blazed grating 1200 lines /mm, Local control software for photometric fixed wavelength measurement, Easily upgraded to include quantitative analysis,	

No.	Nama Barang	Spesifikasi	Gambar
		multi wavelength spectrum & kinetics, Built in cell holder storage, Robust modular design with a small footprint. Included: Mini Printer; STANDARD ACCESSORIES : 8 position 10mm path length motorised cell holder, 10mm Quartz cells (2 pcs), Black block for dark current correction, Fuse (2A), Power Cord, Instruction manual, Dust Cover, Quantitative program card	
		c Optical Design : Double Beam with sample and reference cuvette; positions; Czerny-Turner Monochromator; Spectral Bandwidth : 1 nm; Light Source : Xenon flash lamp; Detector : Dual Silicon Photodiodes; Scan Ordinate Modes : Absorbance, % Transmittance, % Reflectance, Kubelka-Munk, log (1/R), log (Abs), Abs*Factor, Intensity; Wavelength Range : 190 -1100 nm; Wavelength Accuracy : ± 0.2 nm (541.9, 546.1 nm mercury lines) ± 0.5 nm (full range 190-1100 nm); Wavelength Repeatability : ± 0.01 nm (546.1 nm mercury line, SD of 10 measurements); Scanning Speed : <1 to 6000 nm/min; variable; Data Intervals : 10, 5, 2, 1.0, 0.5, 0.2, 0.1 nm; Photometric Range : > 3.5 Abs; Photometric Display Range : -0.3 to 4.0 A; Photometric Accuracy : 1A: ± 0.002 A; 2A: ± 0.004 A; Measured at 440 nm using neutral density filters traceable to NIST; Photometric Repeatability : ± 0.0002 A; Photometric Noise 0A: ± 0.00008 A; 260 nm, 1.0 nm SBW, RMS; Photometric Drift (Stability) : <0.0005 A/hr; 500 nm, 1.0 nm SBW, 1 hour warm-up; Stray light : KCl, 198 nm: $\pm 0.40\%$ T, NaI, 220 nm: $\pm 0.027\%$ T, NaNO ₂ , 340 nm: <0.025% T; Baseline flatness: ± 0.0006 A; 200-800 nm, 1.0 nm SBW, smoothing, Keypad : Sealed Membrane, Electrical Supply : 100 - 240 V, 50 - 60 Hz, Selected Automatically; 150 W maximum, Include : Euro/US/UK power cords, Single Position Cell Holder, Stylus for touchscreen interaction, INSIGHT 2 software for Computer control of instrument and off-line data analysis, USB memory device, Quartz cuvette; Qty : 6 pcs, Personal Computer core i5 branded; Printer ink jet.	
		d Wavelength range : 190 to 1100 nm; Spectral bandwidth : 1 nm (190 to 1100 nm); Wavelength display : 0,1 nm increment; Wavelength setting : 0,1 nm increment (1 nm increments when setting scanning range); Wavelength accuracy : $\pm 1,0$ nm at D2 peak 656.1 nm , $\pm 0,3$ nm for enire range; Wavelength repeatability : $\pm 0,1$ nm; Wavelength slew rate : About 14500 nm/min; Wavelength scanning speed : 3000 to 2 nm/min; Lamp interchange wavelength : Automatic interchange linked to wavelength. The interchange wavelength can be set freely in the range of 295 to 364 nm; Stray light : Less than 0,02% at 220 nm (NaI), Less than 0,02% at 340 nm (NaNO ₂), Less than 0,5% at 198 nm (KCl); Photometric system : Double beam optics; Photometric range : Absorbance: -4 to 4 Abs, Transmittance: 0% to 400%; Photometric accuracy : $\pm 0,002$ Abs at 0,5 Abs, $\pm 0,004$ Abs at 1,0 Abs, $\pm 0,006$ Abs at 2,0 Abs; Photometric repeatability : Less than $\pm 0,0002$ Abs at 0,5 Abs, Less than $\pm 0,0002$ Abs at 1,0 Abs, Less than $\pm 0,001$ Abs at 2,0 Abs; Noise level : Less than 0,00005 Abs (700 nm); Baseline flatness : Less than $\pm 0,0006$ Abs at 1100 nm to 190 nm (one hour after light source is turned ON); Baseline stability : Less than $\pm 0,0003$ Abs/Hr at 700 nm (one hour after light source is turned ON); Light source : 20-W Halogen lamp and Deuterium lamp (socket type). Built-in light source auto position adjustment; Monochromator : LO-RAY-LIGH grade blazed holographic grating in Czerny-Turner mounting; Detector : Silicone photodiode; INCLUDE: Personal Computer : : Desktop, PC HP 280	

No.	Nama Barang	Spesifikasi	Gambar
		G4 MT i3 4GB 1TB Win 10 Pro 64; (Monitor) : HP LED Monitor 18.5"; (Printer) : Epson L120 Inkjet Printer; UV 10mm quart cell	
27.	Water Qualitymeter	Measuring Parameters : pH / ORP / DO / Conductivity / Salinity (or TDS) / Temperature Simultaneous Measurement up to 6 or a singular item; Temperature Auto / Manual; Data-log Auto : 500,000 Points / Manual :500 Points; Display 4.3" Color TFT LCD; Input Connectors for Sensor and USB; Output RS232C; Waterproof IP68; Power Li-ion 3.7 V/4,500 mA / Rechargeable adaptor 5V/1A; Size: Body approx. 105(W) x 250(L) x 50(H) mm/ Multi-Probe approx. 60 x 315(L) mm/ Carrier : approx. 530 x 355 x 225 mm 90i body Multi-Probe (pH, ORP, DO, Cond., Temp) 3m cable, Accessory Standard Buffer solution [Standard], DO membrane kit, Lithium ion battery (Li-ion 3.7V/4500mA), Shock resistant, Water proof, Dust proof Carrying case, Rechargeable & Data transfer cable for General & Car SMSD (Simultaneous Measuring & Saving Data system) program, Holder cup, Neck-strap; pH: Range 0 ~20.00 pH, Resolution 0.01 pH, Accuracy ± 0.1 pH, Type of sensor Glass combination, Calibration Auto/Manual 5 Point; ORP: Range ± 1000.0 mV, Resolution 0.1 mV, Accuracy ± 20 mV, Type of sensor Platinum button, Calibration Auto 1 Point (228 or 475 mV); DO/O₂: Range 0 ~ 19.99 mg/L, Resolution 0.1 mg/L, $\pm 0.1\%$, Accuracy $\pm 5\%$, Type of sensor Polarographic, Calibration O₂/Air : 1 Point, DO : 2 Pont; Conductivitymeter: Range 0 ~ 200 mS/cm, Resolution 1 μS/cm, 0.01 mS/cm, Accuracy $\pm 0.5\%$, Type of sensor 4 Cell (Autoranging), Calibration Auto 1 Point; Salinity/TDS Range 0 ~ 80.0 ppt, 0 ~ 1999.9 mg/L; Resolution 0.1 ppt, 0.1 mg/L, Accuracy ± 1.0 of reading or 0.1 ppt, $\pm 0.2\%$, Type of sensor 4 Cell (Autoranging) Calibration Auto 1 Point; Temperature Range -10 ~ 50 °C, Resolution 0.1 °C, Accuracy ± 0.2 °C, Type of sensor PT100, Calibration Auto	
28.	Waterbath	Control microprocessor PID-temperature controller with integrated autodiagnostic system with fault indicator solid state switching unit one Pt100 sensor class A in 4-wire-circuit integrated digital timer from 1 min. to 99,59 hours for: ON continuous operation, WAIT (delayed on for continuous and limited timed operation), HOLD digital display (LED) of set and actual temperature (0,1 °C resolution) and of (remaining) programme time, LEDs for indication of programme status, Overtemperature protection (double) in case of overtemperature due to failure, the heating is switched off at approx. 10°C above the set temperature (fixed value) mechanical temperature limiter TB protection class 1 switching the heating off at approx. 30 °C above max. temperature of the bath. Textured Stainless Steel Casing: LWH : 578 x 436 x 296 mm, material 1.4301 (ASTM 304), corrosion resistant Interior - Heating Concept: LWH : 350 x 290 x 220 mm, 22 l, easy-to-clean interior, made of stainless steel, reinforced by deep drawn ribbing, material no. 1.4301 (ASTM 304), laser-welded corrosion-proof large-area heating on three sides Temperature Range: min. 5 °C above ambient up to +95 °C with additional boiling mode (+100 °C), Voltage / Power Rating: 230 V (+/- 10%), 50/60 Hz ca. 2.000 W (during heating) Include: Flat stainless steel cover, with concentric ring sets (Number of openings : 6)	

No.	Nama Barang	Spesifikasi	Gambar
		b Temperature working range Ambient Temperature + 5 °C to 80 °C; Capacity (Tank volume) 21 lt; Type of thermoelement NTC; Temperature control PID Digital control; Load switching element SSR (Solid State Relay); Thermostat setting increments in 0.1 °C steps; Thermostat working accuracy ± 0.1 °C; Thermometer display increments in 0.1 °C steps; Tank temperature accuracy ± 0.5 °C; Postpone I Process time 1 min - 99 hours 59 min; Timing begins When reached set temperature value; Fuse 6 Amps; Tank material Stainless steel; Casing material Stainless steel; Tube capacity 96 pcs; Number of tube support 4 pcs; Power rating 750W; Power supply AC 190-240 V/50-60 Hz	
		c Exterior dimensions (wxdxh) : approx. 95.3x37.5x31.8cm; Bath tank dimension : (wxdxh) : 68.5 x 30.4x18.4 cm; Tank capacity L : 27; Temperature range Celcius : ambient +5 to 80 °C; Temperature uniformity Celcius : +/- 0.2°C at 37°C; Over temperature protection; Stainless steel gabel cover (s) : yes; INCLUDED: Flash holder 500 ml,W/spring &screw 12 PCS	

B. LABORATORIUM TEKNIK DASAR

No	Nama Barang	Spesifikasi	Keterangan
1.	FPGA Trainer Kits	a. FPGA Device: HBE-Combo II-DLD (Altera) : Cyclone IV Series (EP4CE30F, EP4CE40F), Sensor : CdS, Voltage Meter (LED), Memory: 4Mbit SRAM, 16kB 2Wire Serial EEPROM, Clock Control: 1 Hz ~ 50MHz Changeable Clock, Display: Text LCD, 8 Array LED, 4 Cell Full Color LED, 7-Segment, 8 Array 7-Segment, Actuator: 1EA Servo Motor, 1EA Step Motor, AD/DA: SPI ADC : 1 Channel 8Bit 1MHz Sampling, Parallel DAC : Dual Voltage Output 8-Bit DAC, Sensor: CdS, Voltage Meter (LED), Etc: PIEZO, Bread Board, Dip Switch, Push Switch UART: 2 Channel UART (USB to Serial 1 Port , D-Sub 9 Pin 1 Port), Extension Connector: 2EA 50pin Connector (FPGA I/O 84Pin), Combo II, Combo III App Module Fully Compatible, Project Module: Traffic Light Module	
2.	Basic Electronic Circuit Experiment Equipment	a. Basic Electronic Circuit Experiment Equipment: HBE-Electronic Circuit is designed to help student understand basic electronic circuit easily. Base Specification: Power Block: AC Power: 220VA input -12VA output. DC Power : variable power in the range from -12V ~ + 12V (display to the 7-segment). Waveform Generator: Frequency : 1Hz ~ 100kHz, Voltage : 100mV ~ 10V, DC OFFSET : +2.5V ~ -2.5V , Waveform : Sine, Triangle, Square; Measuring Part: Digital Multi Meter 1EA, Analog Voltage Meter 1EA, Analog Current Meter 1EA 2CH PC Based Oscilloscope (±16V, 500kHz Sampling Speed), USB Connected; Switch: Slide Switch 4EA (ON : +15V, OFF : GND), Button Switch 2EA (ON : +5V, OFF : GND); Display: 7-Segment (Cathode Common), LED 4EA; Sound: 8Ω Speaker 1EA / PIEZO 1EA; Variable Resistor: 10kΩ / 50kΩ / 100kΩ Variable Resistor each 1EA; Bread Board: Size : 167 x 146 mm, Terminal Strip 3EA, Bus Strip 4EA; Module Block: Size : 167 x 110mm, Power Connector (+20V, +15V, +10V, +5V, GND, -15V); Power: AC 220VA, Board Size: 400 x 325 mm (Except Case); Experiment Module List : No 1. Semiconductor Devices Rectifier Diode Inspection, Transistor Inspection, Transistor Characteristics; No 2. DC Power Circuit #1: Smoothing Circuit, Constant-Voltage Circuit; No 3. DC Power Circuit #2: Switched-Mode Power Supply Circuit; No 4. Amplification Circuit #1: BJT Bias Circuit, Small-Signal, Low-Frequency Amplifier; No 5. Amplification Circuit #2: Audio Amplifier, Common Source JFET Amplifier; No 6. Operational Amplifiers #1: Audio Amplifier, Common Source JFET Amplifier; No 7. Operational Amplifiers #2: CMRR Measurement, Inverting Amplifier, Non-Inverting Amplifier, Adder, Subtractor; No 8. Operational Amplifiers #3: Integrator, Differentiator, Low-Pass Filter, High-Pass Filter, Comparator; No 9. Vibration Circuit: Integrator, Differentiator, Low-Pass Filter, High-Pass Filter, Comparator; No 10. Pulse Circuit: A stable multivibrator, Monostable multivibrator, Clipper, Clamper; No 11. Modulation: Amplitude Modulator / Demodulator, Frequency Modulator / Demodulator / Demodulation Circuit; No 12. Interface: Photoelectric Counter Circuit, D-A Converter Circuit/DA Converter Circuit; No 13. AD Converter Circuit: A-D Converter Circuit	

No	Nama Barang	Spesifikasi	Keterangan
3.	Digital logic circuits equipment	a. Digital logic circuits equipment: HBE-LogicCircuit-Digital is composed of I/O port, Logic module and 74 series module for all the tests included in Digital Logic Circuit textbook. And we can see test resultsthrough PC program provided with the equipment.Base Input:DIP Switch 8bit 4EA, Slide Switch 12EA, Button Switch 4EA Pulse Generator 0.2~1kHz, Pull-up Register 16EA, Pull-down Register 16EA Output:LED 16EA, FND-Anode Common 1EA, FND-Cathode Common 1EA Logic Circuit Design Block:Logic Module Block(4 x 4) 16EA DAQ: 8bit Data Input/Output, USB communication Power: Input AC 220V/Output DC +5V/4A Board Size: 450mm x 320 mm (except for a case size) Logic Circuit Block Basic Gate: Dual NOT Gate Module(7404) 3 EA, Dual AND Gate Module, Dual OR Gate Module, Dual XOR Gate Module(7486), Dual NAND Gate Module(7400), Dual NOR Gate Module Logic gate: Half adder Module, Half subtracter Module, Full adder Module 74 Series: 4bit adder Module 4 bit comparator Module 8x3 Encoder Module 3x8 demultiplexer Module 4x16 decoder Module 2x4 decoder Modul 8x1 multiplexer Module BCD-decimal Encoder Module 7-segment decoder Module Register: Dual D flip-flop Module(7474) Dual JK flip-flop Module Size:	
4.	HBE-LogicLab-D	a. Power:+5V (Embedded Current Protection Circuit), +9V, +15V, -15V Frequency Generator: 0Hz~1MHz, Display : 7-Segment (3 Digit) & LED (Hz, kHz, MHz), Control : Rotary SW(3) & Toggle SW(1) Waveform Generator: 0Hz ~999Hz, Display : 7-Segment (3 Digit) & LED (Sine Wave, Triangle Wave), Control : Rotary SW(3) & Toggle SW(1) DAQ: 8bit Input, 8bit Output, PC Data Interface LED: 5mm High brightness LED 8EA FND: BCD Input 7-segment (Anode, Cathode) 2EA Logic Signal: Rising Edge & Falling Edge 1EA Single Pulse: 1ms Single Pulse Generator 1EA Toggle Switch: User Toggle Switch 12EA Button Switch: User Button Switch 3EA Variable Resistor: 10k Ω 1EA, 500k Ω 1EA Buzzer: Input 5V, Output 2.4kHz Piezo: Input range 20Hz ~22kHz Volt Meter: DC 0 ~15V 1EA Ampere Meter: DC 0 ~ 1A 1EA Bread Board: Terminal Strip 3EA & Bus Strip 4EA Board Size: Base : 336 x 273(mm), Base Board : 167 x 146(mm)	
5.	IoT Smart Server	a. Broadcom BCM2837 1.2GHz Cortex-A53 Quad-core; 1GB LPDDR2 SDRAM; MicroSD 8GB; USB A Type 4 ports; Micro USB socket 5V, 2A; .5mm A/V Jack; HDMI 1.4 Video; 10/100 Base T; 802.11n, Bluetooth 4.0; 40EA GPIO (2x20 2.54mm Pitch Header) Size approx. 116x56mm; Module RSP Shield: 40EA GPIO (2x20 2.54mm Pitch Header), 8ch 12bit Analog to Digital Converter; Module Sensor Modules: PIR: RE200B, Sensing Range 110 Degree, Sound Sensor: Microphone, ambient sound detection, sound level detection, Humidity Temperature: DHT11, temperature and humidity sensor, ambient temperature and humidity detection, UltraSonic: HC-SR04, 2~500cm distance measuring range, 40kHz Frequency; Light Sensor: CdS, Variable Resistor: 1k Ω ; Tilt Sensor: Contact Resistance : 50m Ω max; Mercury Sensor; Reed Sensor; IR obstacle Sensor; Flame Sensor; Touch Sensor TTP223; Photo Diode FC33; Hit Sensor SW-420; Dust Sensor: GP2Y1014AU0F; Gas Sensor MQ-2; Soil Moisture; IR Tracking Thermistor;	

No	Nama Barang	Spesifikasi		Keterangan
			Temperature Sensor : LM35; Limit Switch; Knock Sensor; Relay; Module Actuator Modules: LED Module, DC Motor, Step Motor, Switch Module Tact Button, Laser Module, RGB LED; Education Contents : Overview of IoT, Configuring IoT Smart Server and Practice Environment, Practice for Smart Sensor Control Using Raspberry Pi, Remote Control Using Bluetooth, Web Server Construction Using Lighttpd, Remote Control Using PHP, Configuring Interface Using JavaScript, Module Raspberry Pi 3B	
6.	Startup System Training Panel	a.	Perangkat ini berfungsi untuk pelatihan pengajaran dan pemeliharaan teoritis sistem startup pada kendaraan lengkap dengan struktur dan pengoperasian sistem startup. Basic Parameter: 1.Size: approx. 1600mm × 700mm × 1700mm (length x width x height); 2.External power supply: A.C. 220V ± 10% 50Hz; 3.Operating voltage: 12V DC ; 4.Operating temperature: -40°C to +50°C; Basic configuration (unit): Detection control panel With various detection terminals, color circuit and operating principle diagrams, Ignition switch, Starter assembly Toyota corolla 1.8, Components of the starter assembly, Startup relay, Neutral switch, Fuse, Voltmeter 0 – 30 V, Ammeter 0 – 500 A, Accumulator 46B24SR, 12 V 45 Ah, and 550 CCA, Master power switch 50A, Intelligent fault-setting and appraisal system FXB-688, Movable framework (with self-retention wheels) approx. 1600mm × 700mm × 1700mm (length x width x height); Equipped with intelligent fault setting and appraisal system, include fault setting, troubleshooting and assessment functions etc. 1) The system employs patented, stable and anti-virus digital integrated circuit board and the latest MCU technology and associated fault setting control technology. 2) Independent test and appraisal can be performed without a computer. The teacher and student interfaces are separated. Teachers enter the teacher interface to provide test paper and the students answer questions on the ordinary interface. 3) High resolution 3.8-inch 0.225 x 0.225 LED monitor, English menu interface. 4 operation keys make the operation simple and quick.	
7.	Ignition System Training Panel	a.	Perangkat ini berfungsi untuk pengajaran teoritis dan pelatihan pemeliharaan sistem pengapian pada kendaraan dimana menunjukkan struktur dan pengoperasian sistem pengapian mesin berdasarkan komponen nyata dari enam sistem pengapian, termasuk sistem pengapian mekanis, sistem pengapian elektronik efek balok, sistem pengapian elektronik pemacu magnetik, sistem pengapian elektronik pemacu optik, sistem pengapian tanpa distributor (Setiap server koil pengapian dua busi), sistem pengapian tanpa distributor (Coil-On-Plug). Technical parameter: Size: approx. 2400 mm × 700 mm × 1900 mm (length x width x height), External power supply: A.C. 220V ± 10% 50Hz, Operating voltage: 12V DC, Operating temperature: -40°C to +50°C ; Basic configuration (unit): Detection control panel, With various detection terminals, color circuit and operating principle diagrams, Contact-controlled ignition system, The ignition system of Changan, including an ignition switch, an ignition circuit, a distributor, and a spark plug, Hall electronic ignition system, The ignition system of	

No	Nama Barang	Spesifikasi		Keterangan
			Volkswagen Jetta, including an ignition switch, an ignition circuit, igniter, a distributor, a spark plug, and a Hall sensor, Magnetic induction ignition system, The ignition system of Toyota 8A-FE, including an engineer control unit (ECU), an ignition switch, and a distributor, Photoelectric sensing ignition system, The ignition system of Nissan, including an engineer control unit (ECU), an ignition switch, a distributor assembly, high tension line, and a spark plug, Non-distributor grouping ignition system, The ignition system of Toyota 5S-FE, including an engineer control unit (ECU), an ignition switch, a crankshaft position sensor, an igniter assembly, and a spark plug, Distributorless independent ignition system, The ignition system of Volkswagen Passat 1.8T, including an engineer control unit (ECU), an ignition switch, an igniter assembly, a spark plug, and a crankshaft position sensor, Manual driving mechanism, Crankshaft position sensor and signal wheel, Fuse, Intelligent fault-setting and appraisal system, Movable framework (with self-retention wheels) approx. 2400mm × 700mm × 1900mm (length x width x height)	
8.	Charging System Training Panel	a.	Perangkat ini berfungsi untuk pengajaran dan pemeliharaan teoritis sistem pengisian daya pada kendaraan. BASIC PARAMETER: Size: approx. 1600mm × 700mm × 1700mm (length x width x height), Driving power supply: three phase four wire (three phase five wire 380±10% V 50 Hz), Operating voltage: 12V DC, Operating temperature: -40 C to +50 C, Three-phase asynchronous motor, Model: YT 100L1-4, Voltage: AC 220V/380V, Power: 2.2 KW, Rotation speed: 1420 r/min; BASIC CONFIGURATION (unit): Detection control panel, With various detection terminals, color circuit and operating principle diagrams (4 mm-thick aluminum plastic plate), Ignition switch, Generator assembly, Toyota corolla 1.8, Components of the generator assembly, Charging indicator lamp, Three-phase asynchronous motor, YT 100L1-4, Fuses, Voltmeter 0 – 30 V, Ammeter 0 A to ± 100 A, Accumulator 46B24SR, 12 V 45 Ah, and 550 CCA, Master power switch 50A, Intelligent fault-setting and appraisal system, FXB-688, Movable framework (with self-retention wheels) approx. 1600mm × 700mm × 1700mm (length x width x height)	
9.	Engine Immobilizer System Training Panel	a.	Perangkat ini dirancang berdasarkan sistem immobilizer mesin Toyota Corolla 1.8L untuk mempelajari secara holistik pengajaran teoritis dan pelatihan pemeliharaan sistem immobilizer mesin. Inline four-cylinder, Displacement: 1.8 liters, maximum power: 100KW, electronically controlled multi-point injection; TECHNICAL PARAMETER: Size: approx. 1600mm × 700mm × 1700mm (length x width x height), External power supply: A.C. 220V ± 10% 50Hz, Operating voltage: 12V DC, Operating temperature: -40°C to +50°C; BASIC CONFIGURATION (unit): Detection control panel (4 mm-thick aluminum plastic plate) , With various detection terminals, color circuit and operating principle diagrams, Ignition switch (with a reading loop), Anti-burglary key with a chip, Engineer control unit (ECU), Dashboard, Diagnosis socket, Distributorless independent ignition circuit, Spark plug, Crankshaft position sensor and signal wheel, LED used to replace	

No	Nama Barang	Spesifikasi		Keterangan
			the oil injection nozzle, Oil pump relay, Fuses, Intelligent fault-setting and appraisal system	
10.	Waterpass	a.	"Termasuk : - 1 (satu) unit unit Aluminium Tripod - 1 (satu) unit Rambu Ukur 4,6 Meter + Instrument, lens cap, plumb bob, vinyl cover, cleaning cloth, tool kit, operator's manual, and carrying case." Specification :Magnification : 24X Image : Erect Standard Deviation : 1.0 mm Objective Aperture : 32mm Field of View : 1 25' Minimum Focus : 0.3 m Multiplication Constant : 100 Additive Constant : 0 Type of Compensator : Air Damped Compensation Range : 15 Compensator Accuracy : 0.5 Water & Dust Proof : IPX6Sensitivity of Bubble : 10/ 2mm Circle Reading : 1 / 1 gon	
		b.	AT-B2 Termasuk : - 1 (satu) unit unit Aluminium Tripod - 1 (satu) unit Rambu Ukur 5 Meter + Nivo - 1 (satu) unit Hard Case + Plum Bob Specification : :Magnification : 32X Image : Erect Standard Deviation : 1.0 mm Objective Aperture : 42 mm Field of View : 1 20' Minimum Focus : 0.3 m Multiplication Constant : 100 Additive Constant : 0 Type of Compensator : Air Damped Compensation Range : 15 Compensator Accuracy : 0.3 Water & Dust Proof : IPX6 Sensitivity of Bubble : 10/ 2mm Horizontal Circle Reading : 1 / 1 gon	(AT-B2) 
11.	Theodolite	a.	DT 209 Akurasi 5 detik Pembesaran 30x Optical Plummet, Waterproof dan tahan debu Masa hidup baterai 140jamPENGUKURAN SUDUT Akurasi 5" Metode Pembaca Mutlak Deteksi Horizontal. 2 sisi Vertikal 1 sisi Min Pembaca 1"/5" 0.5mgon/1mgon Diameter Lingkaran 71mm (2.75") TELESKOP Pembesaran 30X Panjang 149mm (5.8") Lensa Objektif 45mm (1.7") Sudut Pandang 1°30' Daya Pemecah 2.5" Fokus Min 0.9m (2.9') Rasio Stadia 100 Konstant Stadia 0 Penampakan Ganda Tampilan 2 sisi LCD 7 segmen Data Output RS-232C Penerangan: Tampilan : Ya Reticle : Ya Kompensator Tingkat kemiringan : Vertikal Rentang kompensator : +3' Optical Plummet Pembesaran : 3X Sudut pandang : 3° Level Sensifitas Tingkat Plat : 40"/2mm Tingkat Lingkaran : 10'/2mm Tingkat Tahan Air IP66 Power Supply Baterai : 4AA Operasi Waktu 140jam Suhu Operasi -20 to +50 degrees C Berat 9lbs (4.1kg)	
12.	Hand Bor	a.	Hand Bor 1 set Consist of : Drilling Rod 10 pcs Solid/Hollow bar, 1 m length, 1 1/4" dia Iwan Type Auger 1 pc Welded steel, two radial blades, 4 dia Straight Chopping Auger 1 pc Steel pipe, hardened type, 45 mm width T-Piece 1 pc Welded steel Turning Rod 1 pc Machine steel, 1 1/4" dia, 60 cm length Sampling Tube 10 pcs 68 mm dia, 40 cm length, with 3 bolt holes Rod Head 1 pc Hardened, machined steel, 2 1/2" dia Allen Key 1 pc Hardened steel, 1/4" Pipe Wrench 1 set 24" length Hammer 1 pc 2 kg weight Steel Wire Brush 1 pc For cleaning laboratory/field apparatus, Steel wire, Wooden handle	

No	Nama Barang	Spesifikasi		Keterangan
13.	Penetration Test	a.	Standard Penetration Test (SPT) 1 set ASTM D-1586 / AASHTO T-206 Consist of : Split Barrel Sampler 1 pc Hardened machined steel, 1 3/8" i.d., 18" length Sampling Rod 10 pcs Steel pipe, 1.5 m length Drive Weight Assembly 1 pc, 63.5 kg weight hammer Anvil 1 pc Machine steel Guide Rod 1 pc Steel, 76.2 cm drop height Tripod Stand 1 set Steel pipe 6 m height Pulley 1 pc, 20 cm dia. Rope 15 mtr 3/4" dia x 15 meter Adaptor 1 pc Machine steel Pipe Wrench 2 set, 24" length Steel Wire Brush 1 pc For cleaning laboratory/field apparatus Steel wire, Wooden handle	
14.	Cone Penetrometer	a.	Dutch Cone Penetrometer 2.5 Ton Capacity 1 set ASTM D-3441 Consist of : Press Cone Penetrometer -In Apparatus 1 set Steel construction, manually operated 2.5 tons capacity Sounding Rod 20 pcs Machined steel, 1 - 1/4" dia, 1 mtr effective length, tapered thread. Plunger Rod 20 pcs Round bar, 15 mm dia, 1 mtr length. Push Adaptor 1 pc, Machined steel Pull adaptor 1 pc, Machined steel Spiral Anchor 4 pcs, Machined steel, welded 1.5 m length Handle and T-piece 1 set, Machined steel, welded Mantel Cone 1 pc, Precision machine steel, hardened tip, tapered thread Friction Cone 1 pc, Precision machine steel, hardened, with friction jacket, tapered thread Wrenches Set 1 set, Pipe wrench (2), adjustable wrench (1), spanner wrench (1) allen key (1), screw driver (1), oil can (1), steel brush (1), piston wrench (1), seals tape (2), oil seals (2), steel box Long Fasten Press 2 pcs, 1.5 m length, 8 cm width Short Fasten Press 2 pcs, 1 m length, 12 cm width, Manometer 1 pc, 60 kg/cm2 capacity, 6" dia, Manometer 1 pc, 250 kg/cm2 capacity, 6" dia	
15.	Liquid Limit Test Set	a.	Liquid Limit Test Set 1 set ASTM D-4318 / ASSHTO T-89, Consist of : Liquid, Limit Device 1 set, Hand operated, brass cup, hard rubber base; ASTM Grooving Tool 1 pc, Machine steel, head gauge Cassagrande Grooving Tool 1 pc, Brass Plate AB-062/5 Glass Plate 1 pc, Glass, 30 x 30 cm square, 1 cm thick Thin Box 12 pcs, Aluminium, 60 gr capacity Graduated Cylinder 1 pc, Glass Made, 100 ml capacity Evaporating Dish 1 pc, 12 cm dia., 250 ml capacity Spatula 1 pc, Plastic handle, stainless steel blade, 150 mm blade length.	
16.	Plastic Limit Test Set	a.	Plastic Limit Test Set 1 set ASTM D-4318 / ASSHTO T-90, Consist of : Plastic Limit Plate, Glass made, Consist of : Glass Plate 1 pc, Glass, 30 x 30 cm square, 1 cm thick Reference Rod 1 pc, Stainless steel rod, 3.2 mm dia. Thin Box 12 pcs, Aluminium, 60 gr capacity Graduated Cylinder 1 pc, Glass Made, 100 ml capacity Evaporating Dish 1 pc, 12 cm dia., 250 ml capacity Spatula 1 pc, Plastic handle, stainless steel blade, 150 mm blade length. Scraper 1 pc, Plastic handle, 100 mm stainless steel blade	

No	Nama Barang	Spesifikasi	Keterangan
17.	Shrinkage Limit Test Set	a. Shrinkage Limit Test Set 1 set ASTM D-427 / AASHTO T-92 , Consist of : Prong, Plate 1 pc, 3 mm har plastic, 3 needles Monel Shrinkage Dish 1 pc, Flat bottom, 40 mm dia, 12 mm , height approx Cristalizing Dish 1 set, Glass made 5 cm dia, 9 dia overflow Glass Plate 1 pc, Glass, 30 x 30 cm square, 1 cm thick Graduated Cylinder 1 pc, Glass Made, 100 ml capacity Evaporating Dish 1 pc, 12 cm dia., 250 ml capacity Spatula 1 pc, Plastic handle, stainless steel blade,150 mm blade length. Scraper 1 pc, Plastic handle, 100 mm stainless steel blade Thin Box 12 pcs, Aluminium, 60 gr capacity	
18.	Hydrometer Analysis Test Set	a. Hydrometer Analysis Test Set 1 set ASTM D-422 / ASSHTO T-88 Consist of : Hydrometer A (152 H) 1 pc, Glass, stream line, range 0 - 60 gr soil/ltr Hydrometer 1 pc, Glass, stream line, range 0.995 - 1.038 Mechanical Stirrer 1 set, Electric, 220 Volt, cast aluminium frame, 10,000 rpm Dispersion Cup 1 pc, Stainless steel, brass baffles Jar Bath 1 pc, Glass / Plastic hard 60x30x40 cm Water Heater 1 pc, Electric, range ambient to 60° C Dispersing Agent 1 kg, Sodium hexa/sodium silicate Hydrometer Jar 2 pcs, Glass, 1000 ml capacity Graduated Cylinder 1 pc, Glass Made, 1000 ml capacity	
19.	Gravity Test Set	a. Specific Gravity (Vacuum Method) 1 set ASTM D-854 / AASHTO T-100 Consist of : Mixing Bowl 1 pc, Stainless steel, 25 cm diameter approx Picnometer Flask 1 pc, 500 ml capacity, vacuum Funnel 1 pc, Glass, narrow mouth Wash Bottle 1 pc, 250 ml capacity Pipette 1xn pc, Glass, 5 ml capacity Thermometer Glass 1 pc, Range 0 - 50° C Vacuum Pump 1 pc, Rotary pump 0 - 76 cmHg	
20.	Compression Machine	a. TN-220.E Unconfined Compression Machine 1 set ASTM D-2166 / AASHTO T-208 Consist of : Unconfined Compression Machine 1 set, Electric, 220 V-AC, 200 W, variable, Speed, adjustable height Sample Tubes Consist of : Sample Tubes 1 pc, 35.0 mm dia x 70 mm height Sample Tubes 1 pc, 47.5 mm dia x 95 mm height Sample Tubes 1 pc, 70.0 mm dia x 140 mm height Split Sample Tubes Consist of :Split Sample Tubes 1 pc, 35.0 mm dia x 70 mm height Split Sample Tubes 1 pc, 47.5 mm dia x 95 mm height Split Sample Tubes 1 pc, 70.0 mm dia x 140 mm height Extruder Consist of : Extruder 1 pc, 34.5 mm dia x 71 mm height Extruder 1 pc, 47.0 mm dia x 96 mm height Extruder 1 pc, 69.5 mm dia x 141 mm height TN-220.5 Trimmer 1 set, Steel frame, 3 tubes size Proving Ring 1 set, 100 kg capacity Dial Indicator 1 pc, Range 30 mm x 0.01 mm Thin Box 12 pcs, Aluminium, 60 gr capacity Wire Saw 1 pc, For preparing soil sample, 100 mm blade length approx	

No	Nama Barang	Spesifikasi		Keterangan
21.	Consolidation Test Set	a.	Consolidation Test Set 1 set ASTM D-2435 / AASHTO T-216 Consolidation Frame 3 set, Welded steel, 2 test unit, 1:10 lever ratio Consolidometer 3 set, Brass, 65 mm sample dia., porous, stone, loading cap. Loads, Slotted 6 pcs, machined steel 830 gr Slotted 3 pcs, machined steel 1660 gr Slotted 3 pcs, machined steel 3320 gr Slotted 3 pcs, machined steel 6640 gr Slotted 3 pcs, machined steel 13280 gr Sample Tubes 3 set, Machine steel, 50.5 mm dia, galvanized, with extruder Dial Indicator 3 pcs, 10 mm x 0.01 mm Wire Saw 3 pcs, For preparing soil sample, 100 mm blade length approx	
22.	Direct Shear Test	a.	Digital Direct Shear Test Set 1 set ASTM D-3080 / AASHTO T-236, Consist of : Loading machine 1 set, Welded steel frame, hand operated Shear Box 1 set, Brass, 63.5 mm sample dia, porous stone, loading cap. Loads, Consist of : Slotted 2 pcs, machined steel 3167 gr weight, Slotted 1 pc, machined steel 6334 gr weight Sample Tube 1 pc, Machined steel, 63 mm dia extruder AB-001/1 Load Cell 1 set, 5 kN Digital Dial Indicator 1 pc, 10 mm x 0.01 mm Digital Dial Indicator 1 pc, Range 30 mm x 0.01 mm Wire Saw 1 pc, For preparing soil sample ,100 mm blade length approx.	
23.	Triaxial UU Test	a.	Triaxial Test 1 set † Consist of : Triaxial electromotor 1000 kg capacity Proving ring 200 kg capacity Dial deformation 20 mm Triaxial cell for sample 38 mm & 50 mm Pore water pressure Water tank Air compressor 1/4 HP Sample preparation	
		b.	Triaxial UU - CU Test 1 set † Consist of : Triaxial electromotor 1000 kg capacity Proving ring 200 kg capacity Dial deformation 20 mm Triaxial cell for sample 38 mm & 50 mm Pore water pressure Water tank Air compressor 1/4 HP Sample preparation	
		c.	Triaxial UU - CU - CD Test 1 set † Consist of : Triaxial electromotor 1000 kg capacity Proving ring 200 kg capacity Dial deformation 20 mm Triaxial cell for sample 38 mm & 50 mm Pore water pressure Water tank Air compressor 1/4 HP Sample preparation	
24.	Compaction Test	a.	Compaction Test Set 1 set ASTM D-698 / D-1557 ASSHTO T-99 / T-180 Consist of : Standard Proctor Mold 1 pc Machine steel, plated 4" i.d. 4.584" height, 2" height of collar. TN-200.2 Modified Proctor Mold 1 pc Machine steel, plated 6" i.d. 4.584" height, 2" height of collar. Standard Proctor Hammer 1 pc Machine steel, plated 12" drop height, 5.5 lbs weight Modified Proctor Hammer 1 pc Machine steel, plated, 18" drop height, 10 lbs weight Extruder 1 set Steel frame hydraulic jack Square Pan 1 pc Galvanised steel 65 x 65 x 7.5 cm Thin Box 12 pcs Aluminium, 60 gr capacity Graduated Cylinder 1 pc Glass Made, 1000 ml capacity Round Scoop 1 pc Round bottom, large size, cast aluminium Trowel 1 pc Wooden handle, pointed type Straight Edge 1 pc 30 cm length Rubber	

No	Nama Barang	Spesifikasi	Keterangan
		Mallet 1 pc Rubber head, wooden handle 1.0 kg weight Steel Wire Brush 1 pc For cleaning laboratory/field apparatus, Steel wire, Wooden handle	
25.	CBR Test	a. Electrical Laboratory CBR Test Set 1 set ASTM D-1883 / AASHTO T-193 Consist of : Electrical General Description The Machine features a rigid two coulumn, frame with upper crossbeam, which can be ajust in height and locked in position with locknuts. The drive force is provided by an linkage of motor, worm and worm wheel housed in the base cabinet, which also accommodates the motor and the electric panel. Can operated both by motor and manual handle. Electrical Loading Machine 1. Max. load: 30KN ,50KNcapacity. 2. Test speed: 1 mm/min (BS model) or 1.27 mm/min (ASTM/EN model) 3. Size of the penetration rod: Dia. 50×100mm Loading Machine 1 set consists off : CBR Mould 3 pcs Machine steel, 6" i.d., 7" height, 2" height of collar Spacer Dish 1 pc Machine steel, 5 15/16" dia, 2.416" height Cutting Edge 1 pc Machine steel, sharp edge Circular Surcharge Weight 3 pcs Machine steel, 5 7/8" dia 5 lbs weight Slotted Surcharge Weight 3 pcs Machine steel, 5 7/8" dia 5 lbs weight Modified Proctor Hammer 1 pc Machine steel, plated, 18" drop height, 10 lbs weight Filter Paper 1 box 6" dia, 100 sheets/box Proving Ring 1 set 6,000 lbs capacity Dial Indicator 1 pc 10 mm x 0.01 mm Square Pan 1 pc Galvanised steel 65 x 65 x 7.5 cm Thin Box 12 pcs Aluminium, 60 gr capacity Graduated Cylinder 1 pc Plastic Made, 1000 ml capacity Round Scoop 1 pc Round bottom, small size, cast aluminium Trowel 1 pc Wooden handle, pointed type Straight Edge 1 pc 30 cm length Dial Indicator 1 pc Range 30 mm x 0.01 mm b. Field CBR Test Set 1 set ASTM D-4429 Consist of : Mechanical Jack 1 pc Cast alumunium housing, 5 tons capacity operated, 2 speeds. Swivel head 1 pc Cast aluminium Field Penetration Piston 1 pc Machined steel, plated, 3 sq.in.cross section area Extention Set 1 set Machined steel, plated, 5 cm, 10 cm , 20 cm, 30 cm, and 60 cm, with connecting adaptor Reference Beam 1 set Steel pipe, 150 cm span Circular Surcharge Weight 1 pc Machine steel, plated, 10" dia, 10 lbs weight Slotted Surcharge Weight 1 pc Machine steel, plated, 8" dia, 10 lbs weight Slotted Surcharge Weight 1 pc Machine steel, plated, 8.5" dia. 20 lbs weight Proving Ring 1 set 2,000 lbs capacity Proving Ring 1 set 10,000 lbs capacity Dial Indicator 1 pc Range 30 mm x 0.01 mm Dial Holder/Dial Stand 1 pc Magnetic/Screw Ring	 

No	Nama Barang	Spesifikasi		Keterangan
26.	Sand Cone Test	a.	Sand Cone Test Set 1 set ASTM D-1556 / AASHTO T-191 Consist of : Sand Cone Bottle 1 pc Transparent glass, 4 ltr cap. Approx Sand Cone Funnel 1 pc Seamless metal, turning stopper, 6 1/2" dia bottom, 1/2 neck dia. Base Plate 1 pc Cast aluminium, 12" x 12" Graduated Sand 1 zak Uncommented sand, passing # 10, retained # 60, 25 kg capacity Sample Bag 6 pcs Plastic bag Round Scoop 1 pc Round bottom, small size, cast aluminium Spoon 1 pc Stainless steel, Small size Trowel 1 pc Wooden handle, pointed type Chisel 1 pc 30 cm length approx., Hardened type Rubber Mallet 1 pc Rubber head, wooden handle 0.5 kg weight	
27.	Dynamic Cone	a.	Dynamic Cone Penetrometer 1 set Consist of : Handle 1 pc Stainless steel Hammer 1 pc Machined steel, painted 8 kg weight Guide Rod 1 pc Stainless steel, 16 mm dia drop height 575 mm Anvil 1 pc Machined steel, painted Penetration Rod 1 pc Stainless steel, 16 mm dia 107 cm length Cone 3 pcs Hardened steel, 60 angle, 20 mm dia Penetration Scale 1 set Stainless steel, 16 mm dia 100 mm scale Carrying Bag 1 pc Water proof cloth Open and Wrench 2 pcs Hardened steel	
28.	Speedy Moisture Tester	a.	Speedy Moisture Tester 1 set AASHTO T-217 Consist of : Speedy Gauge 1 pc M/C range 0-20%, sens.:0.2%, sample weight 20 gr Speedy Balance 1 pc Pocket digital balance Calcium carbide 1 can Canned Measuring Spoon 1 pc Cast Aluminium Cleaning Brush 1 pc Wooden/plastic Holder Carrying Case 1 pc Wooden/Plastic case Steel Ball 2 pcs	
29.	Specific Gravity (Vacuum Method)	a.	Specific Gravity (Vacuum Method) 1 set ASTM D-854 / AASHTO T-100 Consist of : Vacuum Hose 1 set Plastic hose with rubber bung, 1 valve Mixing Bowl 1 pc Stainless steel, 25 cm diameter approx Graduated Cylinder 1 pc Glass Made, 500 ml capacity Erlenmeyer Flask 1 pc 500 ml capacity Funnel 1 pc Glass, wide mouth AB-031/2 Wash Bottle 1 pc 250 ml capacity Pipette 1 pc Glass, 5 ml capacity Thermometer Glass 1 pc Range 0 - 50° C Vacuum Manometer 1 pc For measuring vacuum condition, 4" dia. 0-76 cm Hg Vacuum Pump 1 pc Rotary Pump	

No	Nama Barang	Spesifikasi		Keterangan
30.	Marshall Test Set	a.	Marshall Test Set 1 set Complies to ASTM D1559 1. Capacity:0-50kN precision:1% 2. Resolution:0.1kN,0.01kN 3. Twin displacement structure, displacement resolution: 0.01mm 4. Environment temperature: -10°C-40°C 5. Test speed 50.8mm/minute 6. Supplied with one breaking head, diameter 101.6mm or 152.4mm Features: Adopt European design, equipped with one S shape load cell and displacement sensors, peak value automatically preserved and printing, the principal axis automatically fall after printing AS-180.2 Compaction Mould 1 set Machine steel, plated, 4" dia., 3" height, with collar and base plate. AS-180.3 Stability Mould 1 set Cast aluminium, split type 4" I.d., 4" wide. AS-180.4 Compaction Hammer 6" 1 set Machine steel, plated 10 lbs, hammer weight, 18" drop height. AS-180.5 Compaction pedestal 6" 1 set Wooden base with steel platen. AS-180.6 Compaction Mould Holder 4" 1 set Machine steel, quick clamping system AS-180.7 Extruder 1 set Steel frame, hydraulic system. AS-180.8 Flow Meter 1 set Cast aluminium, clamping bolt, with dial indicator 30 x 0.01 mm AS-180.9 Water Bath 1 set Stainless steel, water heater, 220 V-AC thermostat 30 -85° C AB-001/6 Proving Ring 1 set 6,000 lbs capacity AS-180.2A Compaction Mould 1 set Machine steel, plated, 6" dia., 3" height, with collar and base plate. AS-180.5 Compaction pedestal 6" 1 set Wooden base with steel platen. AS-180.4 Compaction Hammer 6" 1 set Machine steel, plated 10 lbs, hammer weight, 18" drop height. AS-180.6A Compaction Mould Holder 6" 1 set Machine steel, quick clamping system AS-180.3A Stability Mould 6" 1 set Cast aluminium, split type 4" I.d., 4" wide.	
		b.	Automatic Marshall Compactor 1 set Manufactured in accordance with BS Standards. Supplied complete with wood base. For 4" sample	
31.	Centrifuge Extractor Test	a.	Electric Centrifuge Extractor Test Set 1 set ASTM D-2172 / AASHTO T-164 Consist of : Centrifuge Extractor 1 set Electric, 220 V-AC, variable speed DC Motor up to 3600 rpm, aluminium housing, removable cover and bowl, 1500 gram capacity Filter Paper 1 box For centrifuge 50 pcs, low ash filter paper	

No	Nama Barang	Spesifikasi		Keterangan
32.	Reflux Extractor Test	a.	Reflux Extractor Test Set 1 set ASTM D-2172 / AASHTO T-164 Consist of : Reflux Extractor Consist of : Glass Jar 1 pc Pyrex, 6" I.d approx. Funnel 1 pc Two wire mesh screen cone Condensor 1 pc Brass/ copper Hot Plate 1 set Electric, 500 W, 220 V Single burner plate Filter Paper 1 box For centrifuge 50 pcs, low ash filter paper Asbestos Wire Gauze 1 pc asbestos wire, 15 x 15 cm	
33.	Core Drilling	a.	Core Drilling Test Set 1 set Consist of : Core Drilling Machine 1 set Cast aluminium frame, gasoline engine 7 HP, 4 cycle vertical drilling position : rubber caster, up to 4" dia bit Diamond Bit 1 pc 4" inner dia Field Sample Tong 1 pc 4" dia Extension Shaft 1 pc 9" capacity Strap Wrench 1 pc 18" capacity Expanding Adaptor 1 pc	
34.	Sample Splitter	a.	Sample Splitter 1 set Stainless steel, chute width 1" 12 holes, supplied complete with scoop and pans.	
		b.	Sample Splitter 1 set Stainless steel, chute width 2" 8 holes, supplied complete with scoop and pans.	
35.	Sand Equivalent Test	a.	Sand Equivalent Test Set 1 set ASTM D-2419 / AASHTO T-176 Consist of : Graduated Cylinder 2 pcs Transparent fibre glass, 1 1/4" I.d, 1 1/2" o.d 17 " height, with scale Stopper Assembly 1 set Rubber stopper, irrigation tube, hose, shipon Weight Foot Assembly 1 set Machine steel, galvanized, 1000 gr weight, sand reading indicator Stock Solution 1 btl Calcium chloride, glycerine and formaldehyde solution. Supplied in a plastic container (1 ltr) Carrying Case 1 pc Wooden case with handle Thin Box 2 pcs Aluminium, 60 gr capacity Funnel 1 pc Plastic, narrow mouth	

No	Nama Barang	Spesifikasi		Keterangan
36.	Los Angeles Abrasion Machine	a.	Los Angeles Abrasion Machine 1 set ASTM C-131 / AASHTO T-96 Consist of : Los Angeles Abrasion Machine 1 set Frame : Welded steel frame 8 and 12 cm (-steel profile) Drum : 1/2" thick steel plate 28" inner dia 20" inner width Automatic Counter : Digital, module system for easy maintenance Panel button : ON-OFF-RUN-STOP JOG-RESET-500-1000 Power : Electromotor, dual voltage 110-220 V, 750 watt, 1 phase Heavy duty speed reducer. Drum speed : 30 - 33 rpm Steel Ball 12 pcs Steel 1 7/8" diameter Catching Pan 1 pc Galvanized steel	
37.	Bulk Density Test	a.	Bulk Density Test Set 1 set ASTM C-29 / AASHTO T-19 Consist of : Vibrating Table 1 set Variable speed up to 3600 rpm, separate control box, 50 x 50 cm table Consist of : Container 1 pc Machined steel, galvanized, 3 ltr., cap Container 1 pc Machined steel, galvanized, 10 ltr., cap Container 1 pc Machined steel, galvanized, 15 ltr., cap Container 1 pc Machined steel, galvanized, 30 ltr., cap Mesh 0.090 mm opening	
38.	Gravity and Absorption of Fine Aggregate Test	a.	Specific Gravity and Absorption of Fine Aggregate Test Set 1 set ASTM C-128 / AASHTO T-84 Consist of : Cone and Tamper Consist of : Cone 1 pc Brass, 40 mm I.d at the top 90 mm I.d at the bottom, 75 mm height. Tamper 1 pc Machine steel, galvanized, 340 gr weight, 25 mm dia. Glass Plate 1 pc Glass, 30 x 30 cm square, 1 cm thick Mixing Bowl 1 pc Stainless steel, 25 cm diameter approx Volumetric Flask 1 pc 500 ml capacity Scraper 1 pc Plastic handle, 100 mm stainless steel blade	
39.	Gravity and Absorption of Coarse Aggregate Test	a.	Mechanical Specific Gravity and Absorption of Coarse Aggregate Test Set 1 set ASTM C-127 / AASHTO T-85 Consist of : Mounting Table 1 pc Welded steel frame, painted PA-210.2 Water Container 1 pc 20 ltr capacity, approx, overflow Heavy Duty Solution Balance 1 set 20 kg capacity, 1 gr sensitivity Supplied complete with weights. Sample Basket 1 pc # 8 mesh, 200 mm dia. 200 mm heights.	

No	Nama Barang	Spesifikasi		Keterangan
		b.	Digital Specific Gravity and Absorption of Coarse Aggregate Test Set Digital Specific Gravity and Absorption of Coarse Aggregate Test Set 1 set ASTM C-127 / AASHTO T-85 Consist of : PA-210.1 Mounting Table 1 pc Welded steel frame, painted Water Container 1 pc 20 ltr capacity, approx, overflow Digital Balance 1 pc 6,100 gr cap. 0.1 gr sensitivity Sample Basket 1 pc # 8 mesh, 200 mm dia. 200 mm heights.	
40.	Concrete Cylinder Mould	a.	Concrete Cylinder Mould 1 set 15 cm dia x 30 cm heigth.	
41.	Concrete Cube Mould	a.	Concrete Cube Mould 1 set 15 x 15 x 15 cm	
42.	Digital Concrete Compression Machine	a.	Digital Concrete Compression Machine 1 set ASTM C-39 2000 kN capacity, 10 kN increments. The digital readout, compression machine is technology calling control instrument with facilities for data calculation and presentation. The digital read can connect to computer for calculate for data and completed with computer	

No	Nama Barang	Spesifikasi	Keterangan
		b. Semi-Automatic Compression Testing Machine ASTM, 220-240 V 50-60 Hz Semi-Automatic Compression Testing Machines have been manufactured for consistent testing of concrete cube and cylinder specimens. These machines are produced to capacity range of 2000 kN. Suitable for CE security norms and EN 12390-3, 12390- 4, BS 1881, ASTM C39, AASHTO 22 to standards. Semi-Automatic Compression Testing Machines are supplied in Class 1 starting from 10%. Surface hardness 55HRC, flatness tolerance 0.02 mm. Traceable certificate of surface hardness available on request. The Semi-Automatic compression machines consist of a heavy duty welded frame. The suitable vertical clearance for specimen can be adjusted with distance pieces. Can be done the following tests with this machines; 1- Compression strength tests. 2- Flexural and splitting tests by using proper accessories. 3- Mortar (Cement) compression tests by using proper accessories. 4- Core testing. Testable Specimens - Concrete Cubes: 100 mm, 150 mm, 200 mm concrete cube sample or any other custom cube and the prism size can be tested with this machine. - Concrete Cylinder: 100x200 mm, 150x300 mm, 160x320 mm concrete cylinder samples or any other custom diameters cylinder can be tested with this machine. HSW Semi-Automatic Compression Testing Machines supplied complete with following accessories; 1- Spacer Discs; For ASTM Standards; - Diameter 165 mm x Height 90 mm spacer disc 1 piece - Diameter 165 mm x Height 50 mm spacer disc 1 piece - Diameter 165 mm x Height 30 mm spacer disc 2 piece For EN Standards; - Diameter 205 mm x Height 90 mm spacer disc 1 piece - Diameter 205 mm x Height 50 mm spacer disc 1 piece - Diameter 205 mm x Height 30 mm spacer disc 1 piece	
43.	Vertical Cylinder Capping Set	a.. Vertical Cylinder Capping Set 1 set ASTM C-617 Consist of : BE-130.1 Vertical Cylinder Capper 1 set Cast aluminium frame, rotating ground table, for 150 mm dia concrete cylinder. BE-130.2 Capping Compound Warmer 1 set Approx 3 ltr cap., heating temperature up to 200 c, 220 V-AC. Capping Ladle 1 pc Stainless steel ladle, wooden handle Cylinder Carrier 1 pc Double handle, snap clamp, for 150 mm dia, concrete cylinder. Capping Compound 1 kg Powder, approx 115 C Pouring. 25 kg Temperature	

No	Nama Barang	Spesifikasi	Keterangan
44.	Hydraulic Concrete Beam Testing Machine	a. Hydraulic Concrete Beam Testing Machine 1 set ASTM C-78 For determining the flexural strength of concrete beam by using a simple beam with third point loading. 100 kN cap., hydraulic hand pump, manometer reading, sample size 15 x 15 x 60 cm welded steel construction. Dimension (l x w x h) : 100 x 50 x 100 cm.	
45.	Slump Test Set 1	a. Slump Test Set 1 set ASTM C-143 / AASHTO T-119 Consist of : BE-150.1 Slump Cone 1 pc Heavy gauge sheet steel, 4" top dia, 8 bottom dia, 12" height. BE-150.2 Inspection Scale 1 pc Machine steel, 0-15 cm slump measurement, 1 cm increment. BE-150.3 Base Plate 1 pc Steel sheet, carrying handle, 600 x 600 x 5 mm AB-047/2 Round Scoop 1 pc Round bottom, large size, cast aluminium AB-051/1 Trowel 1 pc Wooden handle, pointed type AB-055/1 Steel Wire Brush 1 pc For cleaning laboratory/field apparatus, Steel wire, Wooden handle BE-150.4 Tamping Rod 1 pc Machine steel, galvanized 16 mm dia, 600 mm length.	
46.	Air Content of Fresh Mixed Concrete	a. Air Content of Fresh Mixed Concrete ASTM C-231 / AASHTO T-152 Consist of : BE-160.1 Air Entrainment Meter 5 ltrs capacity. 2" maximum aggregate size, direct reading 0 – 105 manometer hand pump. AB-047/1 Round Scoop Round bottom, small size, cast aluminium AB-051/1 Trowel Wooden handle, pointed type AB-053/2 Straight Edge 40 cm length AB-054/1 Rubber Mallet Rubber head, wooden handle 0.5 kg weight BE-160.2 Tamping Rod Machine steel, galvanized 16 mm dia, 600 mm length.	
47.	Modulus of Elasticity In Concrete Test Set	a. Modulus of Elasticity In Concrete Test Set 1 set For measuring average axial deformation of concrete cylinder sample during compression test, cast aluminium, dial indicator 0.1 X 30 mm Dimension (l x w x h) : 30 x 30 x 35 cm.	

No	Nama Barang	Spesifikasi		Keterangan
48.	Laboratory Concrete Mixer 1 set	b.	Laboratory Concrete Mixer 1 set For mixing trial bathes of concrete for mix design. pprox 70 ltr cap., 4 mixing blades, welded steel frame, 2 wheels for easy movement, electromotor /3 HP, 220 V-AC, 1 phase. Dimension (l x w x h) : 20 x 20 x 30 cm.	
49.	Analogue Display Hydraulic Universal Testing Machine	a.	Feature: These frames feature dual spaces so users can quickly change between tension and compression testing without having to remove heavy fixtures. Control console with integrated digital meter, hydraulic power pack, precise electronic loading regulator and unloading valves. Extra-length screws and columns, with an adjustable lower crosshead, to increase the available test space for longer test samples. With digital displacement transducer for the best positioning and measuringaccuracy. Accessories: Play frame; Control console; Controller and sensor;Three sets of sample jaw; Bend support saddle;Bend pressure energy; Spheric compression plate;Lower compression plate; Top board; Ground screw and nut; Inner hexagon spanner; wire powercord; O type gasket;Cruciform screw driver; Double offset ring spanner;Other accessories full sets. Specification: Play frame Main frame size 740X580X2045mm Machine model WA-300B Max. Technical testing power 300KN parameter Precision grade 1 testing power Max. tension distance 620mm Compress distance 0-380mm Clamp diameter of round specimen Φ0-32mm Clamp thickness of flat specimen 0-15mm Clamp width of 80mm flat specimen 160mmX160mm size of compression plate Bending stick distance is 350mm Bending stick width 140mm Bending degree allowance 100mm Controller size 620x560x1560mm 1.5KW oil pump power Distortion testing device Staff Overload protection 2-5% Weight 1800kgs 2300kgs 3000kgs Max. lift speed of testing board 70mm / min Ex. Import Dilengkapi surat Dukungan dari distributor Melengkapi LOA	
50.	Welding Machine	a.	Feature: Small size light weight, high quality and energy saving. Good arc-starting and arc force, stable arc and little spattel. High welding quality, deep penetration. Auto protection of over-voltage and over-current. Be able to work continuously, it can balance automatically when voltage is fluctuation. Suitable for welding all kinds of basic welding rod. Technical Data: Power voltage(V) 120/230 Rated input power(KVA) 7-Mar Input voltage frequency(HZ) 50/60 No-load voltage(V) 76 Output current range(A) 30-110/30-200 Rated output Voltage(V) 24.4/28 Duty cycle(%) 80/25 Efficiency(%) 85 Insulation class F Weight(KG) 11 Measurement(MM) 460x270x345 Protection class IP21S Usable electrode(MM) 1.6-2.5/1.6~4.0 Including Instruction Manual	

No	Nama Barang	Spesifikasi	Keterangan
		b. Technical Data : Rated Input Voltage 1PH ~ 230V $\pm$15% Max. Load Power Capacity TIG: 7.81KVA MMA: 5.63KVA Rated Duty Cycle(40oC) 60% TIG: 250A/20V MMA: 200A/28V 100% TIG: 200A/18V MMA: 160A/26.4V Welding Current/Voltage Range TIG: 3A/10.1V~250A/20V MMA: 20A/20.8V~200A/28V Open Circuit Voltage 70V~80V Power Factor 0.8 Efficiency 80% TIG Pulse Frequency Pulse Width (Ratio) 1%~100% Arc-starting Current 5A~250A Crater-ling Current 5A~250A Current Up-slope Time 0.1S~15S Current Down-slop Time 0.1S~15S Pre-Gas Time 0.1S~15S Flow-Gas Time 0.1S~15S Spot Arc Time 0.1S~10S MMA Arc Force Hot Start Time 0.1~3S Hot Start Current 10A~200A Dimension (LxWxH) 410x190x305mm Weight (KG) 15KG	
		c. Precision Arc Performance: • Built-in arc control lets you get in tight without sticking the electrode. An electrode compensation circuit ensures consistent arc control performance regardless of the electrode size. • Hot Start Function reliably ignites the electrode and melts perfectly to ensure the best quality even at the start of the seam. • Arc Force makes it easier to weld large-drop melting electrode types at low current strengths with a short arc in particular. • Thermal overload protection light indicates power shutdown. Helps prevent machine damage if the duty cycle is exceeded or airflow is blocked. • Expert of vertical-down welding with cellulose electrodes. • Special designed for carbon arc gouging. • Fast, precise, clean arc ignition and arc ending. • 10 channels memory capacity Technical Data: Rated Input Voltage 3PH ~ 400V $\pm$15% Max. Load Power Capacity 19.93KVA Rated Duty Cycle(40) 60% 400A/36V 100% 315A/32.6V Welding Current/Voltage Range 20A/20.8V~400A/36V Open Circuit Voltage 70V~80V Power Factor 0.85 Efficiency 85% MMA Arc Force 1%~100% Hot Start Time 0.1-2S Hot Start Current 1%~100% Dimension 680x310x650mm Weight 45KG Including Instruction Manual Control Panel Parameter Values: 1.Hotstart current rotary dial Increased ignition current during the set hotstart period to optimise the arc ignition. Setting from 20 A to 200 A. 2.Welding current setting rotary dial Infinite setting of the welding current across the whole power range. 3.Arcforce rotary dial To adjust the welding parameters to the electrode type used. Infinite setting from rutile (soft arc) to cellulose (hard arc) electrode types.	
		d. Technical Data: Rated Input VoF672:G698 3PH ~ 400V $\pm$15% Max. Load Power Capacity 26.99KVA Rated Duty Cycle(40oC) 60% MIG: 500A/39V MMA: 500A/40V 100% MIG: 350A/31.5V MMA: 350A/34V Welding Current/Voltage Range MIG: 10A/14.5V~500A/39V MMA: 10A/20.4V~500A/40V Open Circuit Voltage 70V~80V Power Factor 0.85 Efficiency 85% Pre-Gas Time Preset Flow-Gas Time Preset Wire-feed Mechanism 4 Rollers Wire-feed Speed Range 0~25m/ min Wire Spool Capacity 300mm (15kg) Filler Wires Ø (mm) Fe, Ss: 0.6~1.6 mm Dimension: 960x420x1400mm Weight 85KG Water-cooling Unit Operating Voltage 230V 50/60Hz Rated Power 260W Cooling Power 1.5KW(1L/MIN) Maximum Pressure 0.3MPA/60HZ Recommended Cooling Liquid	

No	Nama Barang	Spesifikasi		Keterangan
			20%~40% ethanol/water Tank Volume 6.5L Including Instruction Manual	
51.	Mesin CNC	a.	High Precision Spindle Precision ballscrews Rugged Construction assure rigidity Hardened and Ground Slide Ways Include, CNC Controlled lathe machine perfect for Industry Include, Precise Machining and Central Lubrication Include, Servo Motor for X Axis and Z Axis Include indent motor_power 5.5 KW spesification Swing over Bed Dia 360 mm Distance Between Center 750 mm Swing Over Cross slide range 180 mm Spindle Bore Dia 57 mm Bed width 320 mm Headstock Spindle speed range 60 - 2600 Rapid Speed of X Axis 6000 mm/min Rapid Speed of Z Axis 8000 mm/min Tailstock Taper MT 4 Tailstock Quill Stroke 120 Tails Stock Quill Diameter 60 mm Main Motor 5.5 kW Connection Voltage Three phase 380V Standard Accesories : 3 jaw chuck Include Automation 4 station tools changer Include Inverter main spindle Include Coolant system Include CNC Control System : FANUC Tidak termasuk biaya kirim dan instalasi type CNC Lathe Machine dimension_length 230.00 dimension_height 180.00 dimension_width 170.00 dimension_uom CM dimension_unit 210X150X160CM netto_weight 1700.00 KG weight 2040.00	

C. PERALATAN LABORATORIUM OSCE

No	Nama Barang	Spesifikasi	Keterangan
1.	Timbangan Bayi	a. Capacity: 20 kg / 44 lbs Graduation: 5 g < 10 kg > 10 g /0.2 oz < 22 lbs > 0.5 oz Dimensions (WxHxD):638 x 105 x 300 mm / 25.1 x 4.1 x 11.8" Dimensions/weighing platform (WxHxD):595 x 50 x 255 mm / 23.4 x 2 x 10" Power supply:batteries / switch-mode power adapter included Functions: TARE, BMIF, auto-HOLD,automatic switch-off, kg/lbs switch-over include: measuring rod Easy to operate with generouslyized cradle and easy to readLCD display.Reliable results due to theautomatic damping system.Handy and light formobile medical use	
		b. Capacity:35 lbs, 16 kg Graduation (g):5 g, 1/4 oz Measure (W x H x D):550 x 180 x 290 mm , 21,7 x 7,1 x 11,4 inch Net weight:6,4 kg , 14,1 lbs Functions:Reset-to-zero function CE:CE 012 Classic design and high-quality precision mechanics.Precise ascertainment of weightdue to zero adjustment.Softly curved weighing tray for maximum safety	
		c. Kapasitas maksimal : 20kg Akurasi pengukuran : 0.05kg (0-10kg) 0.1kg (10-20kg) Ukuran nampan (P x L) : 54.5 x 27cm Ukuran keseluruhan (P x L x T) 54.5 x 33.1 x 15.3cm	
2.	electrocardiogram	a. ECG interpretation: Marquette® 12SLTM ECG Analysis Program for Adults and Paediatrics, Computerized measurements: 12-lead analysis, ECG analysis frequency: 500 samples/second (sps),Digital sampling rate: 2,000 samples/second/channel,ECG on-screen preview: On-screen preview of acquired 10-second ECG waveform and optional 12SL measurement and interpretation, Acquisition mode: Pre-acquisition or post-acquisition, provide 10 seconds of instantaneous ECG acquisition ,Dynamic range: AC Differential ± 5mV, DC offset ±300 mV , Resolution: 4.88 µV/LSB @ 500 sps, Frequency response: -3 dB @ 0.01 to 150 Hz , Low cut-off frequency: 0.01 Hz, 0.02 Hz, 0.16 Hz or 0.32 Hz (-3 dB limits), High cut-off frequency: Configurable at 20 Hz, 40 Hz, 100 Hz or 150 Hz , Adaptive AC filter: 47 Hz to 53 Hz when set to 50Hz, 57 Hz to 63 Hz when set to 60 Hz , Common mode rejection: >100 dB (with AC filter switched on) , Input impedance: >10MΩ @ 10 Hz, defibrillator protected, Patient leakage: <10 µA, Special acquisition functions: Disconnected lead detection except RL, excessive AC noise, baseline wander and muscle tremor messages, Heart rate meter: 30 to 300 BPM ±10% or ±5 BPM, whichever is greater. Heart rates outside this range will not be displayed, Start-up time: Less than 7 seconds	

No	Nama Barang	Spesifikasi		Keterangan
		b.	12 LEAD Interpretation algorithm, Additional short-term arrhythmia analysis mode ,Built-in Large LCD (320 x 240 dots), 3, 6, 12 Lead ECG Display, 3 Channel recorders with selectable recording formats, Internal Memory for ECG Storage	
3.	Pasien Monitor	a.	10.4" crystal-clear monitor displays up to six waveforms simultaneously, Resolution SVGA resolution, 800 x 600, Number of traces Up to 6, AC input 100 to 240V±10%, 50/60 Hz, 150VA, Battery Exchangeable lithium-ion, 2 pcs max Charging time 2 hours per battery pack, Run time Up to 4.5 hours Waveform : ECG, IBP, SPO2, RESP, CO2 Measurement : HR, ST, VPC, IBP (max 2ch), SPO2, EE, PR, APNEA, NIBP, TEMP (max 4ch), CO2, CO	
		b.	Dimension : 300mm (W)X265mm (H)X75mm(D) Display : 10,2" wide colour LCD Parameters: Waveform : ECG, IBP, SPO2, RESP, CO2 Measurement : HR, ST, VPC, IBP (max 2ch), SPO2, EE, PR, APNEA, NIBP, TEMP (max 4ch), CO2, CO Power Supply : AC 100-250 V 50/60 HZ, 3 hours operation time on battery, weight 3kg, Resolutions 1024x600 WSVGA	
		c.	Power Supply : AC 100-250 V 6A/3A, Resolution : 1280x1024, Waveform : ECG, PLETH, RESP, CO2, IBP Parameter : HR, ST, NIBP, IBP, SPO2, PR, RR, TEMP, ETCO2, Multi Gas Display 12,1" colour touch screen.	

No	Nama Barang	Spesifikasi	Keterangan
4.	Venipuncture Arm	a. Soft, flexible skin Underlying palpable veins: cephalic, basilic, dorsal metacarpal and median cubital Realistic blood flashback Arm allows for digital pressure to stem blood flow Infusion tube allows for volume IV fluids to be administered Skin is durable Veins last for up to 500 insertions of 21g needle Blood has been reformulated to improve leak resistance of veins. (Concentrated liquid to save you money and storage space) Can be used with vacuum blood collection systems, needle and syringe and IV cannulas Can be used for hybrid simulation and for professional-to-patient communication when using the optional Venipuncture Arm Harness contains latex Veins are easy to replace Easy to clean, service and maintain SkillsVenipuncture IV Cannulation IV Infusion Professional-to-patient communication. 1 AV Arm Vein, 1 AV Vein Module, 1 Bag & Stand Venipuncture Arm Mock Blood Supply, 1 Concentrated Venous Blood - Starter Pack, 1 Venipuncture Arm Infusion Tube, 1 Venipuncture Arm Rest, 1 Venipuncture arm skin, 3 Sachets water-based lubricant, 1 Arm shell.	
		b. As closely as modern plastics technology allows the simulation of the entire human arm from the shoulder to fingertips Externally, the skin texture is realistic to touch, and the fingertips have fingerprints the skin and veins can be easily removed and replaced when needed, providing literally, a brand new arm The life of the replaceable skin and veins will be prolonged by utilizing smaller needle sizes (such as 20- to 25-gauge) contains: Advanced Injection Arm Simulator 3 cc Syringe with needle 12 cc syringe with needle 22-gauge needle 2 fluid supply bags infusion butterfly pinch clamp 2 small towels infusion needle intradermal sealant (2 oz.) 2 pint bottle with blood powder latex adapter.	
5.	CPR Torso	a. Realistic anatomy including head tilt, chin lift, chest resistance and chest rise. Sensor indicates correct hand placement. Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth). Enhanced measurement and feedback capabilities. Wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless, SkillReporter software. Wired connectivity with SkillGuide or SimPad SkillReporter. Guidelines compliant. Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping. Compatible with ShockLink for more efficient and cost effective defibrillation training. Includes: Torso Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Semi rigid Carry Bag with integrated kneel mat, Jacket, 50 Resusci Manikin Wipes, USB cable, (for use with any USB power supply), User Guide, Important Product Information, SimPad with SkillReporter SW,	

No	Nama Barang	Spesifikasi	Keterangan
		b. Realistic anatomy including head tilt, chin lift, chest resistance and chest rise. Sensor indicates correct hand placement. Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth). Enhanced measurement and feedback capabilities. Wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless SkillReporter software. Wired connectivity with SkillGuide or SimPad SkillReporter. Guidelines compliant. Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping. Compatible with ShockLink for more efficient and cost effective defibrillation training. Includes: Torso Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Semi rigid Carry Bag with integrated kneel mat, Jacket, 50 Resusci Manikin Wipes, USB cable, (for use with any USB power supply), User Guide, Important Product Information, Simpad SkillGuide, User Guide, Important Product Information.	
		c. it was designed with modular components that require no conversion kits. Individual student face masks provide maximum protection from cross contamination. The disposable face mask is designed with a one-way non-rebreathing valve. Molded hair requires no maintenance. Disposable tracheal airway and lower airway with lung bag eliminates time-consuming disinfection procedures. Five-year warranty. Quality Features: Adult and child CPR versions, Fully articulated head, neck, and jaw, Non-rebreathing airway system, Sanitary molded hair: CPR Training Capabilities: Constricted and dilated eye, Electronic monitoring options, Jaw thrust, Manual carotid pulse, Pliable abdomen for obstructed airway procedure, Xiphoid, navel, nipples, and ribcage landmarks, Includes basic adult torso, short sleeve jacket, sanitary face mask, disposable lower airway, disposable tracheal airway, and white fitting.	
		d. Designed with modular components that require no conversion kits. Individual student face masks provide maximum protection from cross contamination. The disposable face mask is designed with a one-way non-rebreathing valve. Molded hair requires no maintenance. Disposable tracheal airway and lower airway with lung bag eliminates time-consuming disinfection procedures. Five-year warranty. Quality Features: Adult and child CPR versions, Fully articulated head, neck, and jaw, Non-rebreathing airway system, Sanitary molded hair CPR Training Capabilities: Constricted and dilated eye, Electronic monitoring options, Jaw thrust, Manual carotid pulse, Pliable abdomen for obstructed airway procedure, Xiphoid, navel, nipples, and ribcage landmarks, Includes adult full-body manikin, long sleeve jacket, pants, sanitary face mask, disposable lower airway, disposable tracheal airway, white fitting, and hard carry case.	

No	Nama Barang	Spesifikasi	Keterangan
		e. Realistic anatomy including head tilt, chin lift, chest resistance and chest rise.Sensor indicates correct hand placement.Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth).Enhanced measurement and feedback capabilities.Wireless connectivity with SimPad SkillReporter or Resusci Anne WirelessSkillReporter software.Wired connectivity with SkillGuide or SimPad SkillReporter.Guidelines compliant.Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping.Compatible with ShockLink for more efficient and cost effective defibrillation training.Includes: Full Body Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Kneel mat, Jacket, Pants, 50 Resusci Manikin Wipes, USB cable (for use with any USB power supply), User Guide, Important Product Information, SkillGuide, User Guide, Important Product Information.	
		f. Realistic anatomy including head tilt, chin lift, chest resistance and chest rise.Sensor indicates correct hand placement.Ventilation system provides appropriate chest rise with BMV (Bag Valve Mask) and MTM (Mouth to Mouth).Enhanced measurement and feedback capabilities. Wireless connectivity with SimPad SkillReporter or Resusci Anne Wireless SkillReporter software.Wired connectivity with SkillGuide or SimPad SkillReporter.Guidelines compliant.Simulate different chest stiffness's - 2 extra springs supplied, hard (approx. 60kg force) and soft (approx. 30kg force), with medium spring (approx. 45kg force) at guidelines depth installed at shipping.Compatible with ShockLink for more efficient and cost effective defibrillation training.Includes: Full Body Manikin, 3 Decorated Resusci Manikin Faces, 2 Disposable Airways, 2 Extra Compression Springs (Hard and Soft), Kneel mat, Jacket, Pants, 50 Resusci Manikin Wipes, USB cable (for use with any USB power supply), User Guide, Important Product Information, SimPad with Skillreporter SW, Powers supply /charger with appropriate plug, USB cable, User Guide, Important Product Information.	
6.	Resusci Baby QCPR	a. Realistic anatomy including head tilt, chin lift, compression depth, compression force and chest riseSensor indicate correct hand placement Ventilation system provides realistic chest rise with BVM (Bag Valve Mask) and MTM (Mouth to Mouth) and measures volume and rate to help train correct ventilation technique.Enhanced measurement and feedback capabilities.Wired connectivity with SkillGuide or SimPad SkillReporter. Guidelines compliant. Includes: Manikin, 2 Face masks, Manikin Face Shields (1 roll), Disposable Airway, Suitcase, Baby grow (body), Blanket, Pulse bulb, Manikin wipes, User Guide, Important Product Information, Manikin Battery, Standard USB cable (manikin to PC), SkillGuide , User Guide, Important Product Information.	

No	Nama Barang	Spesifikasi	Keterangan
		b. Realistic anatomy including head tilt, chin lift, compression depth, compression force and chest rise. Sensor indicates correct hand placement. Ventilation system provides realistic chest rise with BVM (Bag Valve Mask) and MTM (Mouth to Mouth) and measures volume and rate to help train correct ventilation technique. Enhanced measurement and feedback capabilities. Wired connectivity with SkillGuide or SimPad SkillReporter. Guidelines compliant. Includes: Manikin, 2 Face masks, Manikin Face Shields (1 roll), Disposable Airway, Suitcase, Baby grow (body), Blanket, Pulse bulb, Manikin wipes, User Guide, Important Product Information, Manikin Battery, Standard USB cable (manikin to PC), SimPad with SkillReporter SW, Powers supply /charger with appropriate plug, USB cable, User Guide, Important Product Information.	
		c. The most realistic and convenient infant CPR training manikin available. SkillGuide CPR Performance Indicator provides immediate feedback on ventilation duration and volume, compression depth, and finger placement. Head tilt/chin lift is required to open the airway. Brachial pulse simulation. Economical, disposable airways for quick and easy cleanup. Removable, reusable faces. Comes with three faces, six airways, six manikin wipes, pulse bulb, tubing, SkillGuide unit, and a plastic carry case.	
7.	Injection Trainer	a. SkillsProfessional-to-patient communication Intradermal injection Subcutaneous injection Intramuscular injection Management of tissue Package Contents: 1 Strap-on Base Plate, 1 Soft Tissue Tray with liner, 1 Skin Pad & Muscle Block, 1 Epidermis for Injection Trainer (Pack of 2)	
		b. Made from silicone It is ideal for practicing: Intravenous injections, Correct puncture of peripheral veins for blood sampling. The following veins can be punctured: basilic vein, cephalic vein, median cubital vein, dorsal venous rete of hand, Positioning of a butterfly catheter, Delivered with stand, artificial blood, 2 replacement tubing systems, plastic bottle, syringe and deluxe storage carton. Weight 2.9 kg Dimensions 74 x 19 x 14 cm	

No	Nama Barang	Spesifikasi	Keterangan
8.	Female Catheterisation Trainer	a. Skills, Correct handling of female anatomy, Aseptic catheterisation technique, Catheter placement: accepts catheters from 12-16 French (female), Fluid management, Withdrawal of catheter, Intermittent self-catheterisation (ISC) using the optional Self, Catheterisation Stand, Suprapubic catheter insertion and catheter management when using Suprapubic Bung, Package Contents: 1 Female Catheterisation Unit, 1 Suprapubic Bung, 1 Standard Bung, 1 Antifungal Agent (250ml), 2 Aseptic Catheterisation Sleeves, 1 Mock LA Gel with Syringe, 1 pelvic shell, 1 drip tray, bag stand, 1 litre fluid bag & plastic kidney dish, 1 12 French foley catheter (female), 12 litre jug	
		b. Female catheterization with realistic resistance Soft and movable labia Liquid outflow if catheterization is successfully carried out The situation can be checked through the transparent bladder Stands securely on the table thanks to the non-slip feet Magnetic connectors for quick set-up and dismantling Easy to clean, and the inserts can be completely removed Stands with magnetic connections for genital inserts: Catheterization set with transparent bladder, Bottle and tube connectors Weight 2.3 kg Dimensions 36 x 11 x 26.5 cm	
9.	Prompt Flex Standart	a. Training and practice in the following types of birth: Normal, Vaginal breech, Shoulder dystocia, Vaginal assisted (forceps and vacuum devices), Third stage of labor.Cord prolapse. Urinary catheter placement. IM injection. Communication and teamwork skills. Includes 1 Birthing Mother (with upper legs), 1 Standard Baby, 1 Placenta, 1 Abdomen for PROMPT Flex, 1 Perineum & Birth Canal for PROMPT Flex, Carry Case	
		b. This module is an optional add-on for the PROMPT Flex Standard birthing simulator. It allows training in the management of post-partum bleeding, and offers a realistic simulation of an atonic and contracting uterus.Skills Gained:Management of post-partum bleeding: Fundal massage, Bi-manual compression, Haemostatic balloon insertion and management Communication skills with mother when used with Simulated Patient Intramuscular injection Estimating blood loss. Includes 1 PROMPT Flex PPH Uterus Assembly, 2 Concentrated Venous Blood - Starter Pack, 1 PROMPT Flex PPH blood container	

No	Nama Barang	Spesifikasi	Keterangan
10.	Gynecological	a. This unique gynecological training model is ideal for demonstration purposes and for training realistic insertions of female barrier contraceptive devices, which are placed in the vaginal/cervical area. Include:Femidom, FemCap (cervical cap), Vaginal ring, Diaphragm.The second important function of this simulator is that it is possible to insert the various types of pessaries such as ring, bowl or cube which are used in the event of a prolapse or incontinence. It is also possible to demonstrate how to introduce a IUD (coil) and show where it should be located. The cervical cap can be detected with ultrasound and it is also possible to practice intrauterine insemination (IUI).	
		b. Features :Full size adult female lower torso with relevant internal anatomic landmarks, Bi-manual pelvic examination, Palpatio of normal and pregnant uteri, Vaginal Examination, including insertion of speculum, Visual recognition of normal and abnormal cervixes, Uterine sounding, IUD insertion and removal, Distal end of vagina facilities introduction of a female condom or sizing a 75mm diaphragm, Removable introitus adds flexibility for addition of multiple ZOE options Laparoscopic visualization and occlusion of fallopian tubes, Minilaparotomy, One anteverted and one retroverted parous uterus, One normal uterus with short fallopion tubes for palpation exercises, Early pregnancy uteri. One is 6-8 weeks and the other is 10 - 12 weeks. One twenty week pregnant uterus, Five normal cervixes with patent os, Four abnormal cervixes, Ten fallopian tubes, Realistically sculpted and anatomically accurate ovaries and fimbriae, Uterus and cervix feature patented "screw" design for fast and easy change out, Talcum powder, Instruction manual, Soft carrying bag.	
11.	Little Anne	a. A realistic airway construction means that the airway naturally remains bstructed without the use of proper head tilt, chin lift or jaw thrust. This leads to more realistic training as chest rise will be seen when correct ventilations are made.Little Anne's anatomically correct torso and sternal notch allow the student to practice identification of all anatomical landmarks relevant to conducting adult CPR training.Realistic oral and nasal passages allow for mouth-to-mouth ventilation.Due to the highly realistic chest movement and compression resistance feedback devices, such as the CPRmeter, can be used to enhance training and ensurereal time feedback and quality debriefing is provided.Audible feedback reinforces correct compression depth. An optional "clicker" feature signals when the correct compression depth is achieved.Economical disposable airways for quick and easy clean-up.Removable and reusable faces for convenient and affordable maintenance.Includes:Little Anne Manikin, Soft Pack/Training Mat, 2 Manikin Faces, 2 Airways, 6 manikin wipes, User Guide and jacket.	

No	Nama Barang	Spesifikasi	Keterangan
		b. A realistic airway construction means that the airway naturally remains obstructed without the use of proper head tilt, chin lift or jaw thrust. This leads to more realistic training as chest rise will be seen when correct ventilations are made. Little Anne's anatomically correct torso and sternal notch allow the student to practice identification of all anatomical landmarks relevant to conducting adult CPR training. Realistic oral and nasal passages allow for mouth-to-mouth ventilation. Due to the highly realistic chest movement and compression resistance feedback devices, such as the CPRmeter, can be used to enhance training and ensure real time feedback and quality debriefing is provided. Audible feedback reinforces correct compression depth. An optional "clicker" feature signals when the correct compression depth is achieved. Economical disposable airways for quick and easy clean-up. Removable and reusable faces for convenient and affordable maintenance. Includes: 4 Individual Little Anne Manikins, 4 Individual Training Mats, 1 Large 4-Pack Carry Case, 8 Manikin Faces, 8 Airways, 24 Manikin Wipes, and User Guide.	
12.	Babby Anne	a. Oral and nasal passages allow realistic nose pinch required for mouth-to-nose ventilation. Natural obstruction of the airway allows students to learn the important technique of opening the airway. Head tilt/chin lift and jaw thrust allow students to practice correctly all maneuvers necessary when resuscitating a real patient. Realistic chest compliance means students can experience the proper technique required for chest compressions on infants. Foreign-body airway obstruction feature allows the release of a foreign-body obstruction to be practiced through back blows and chest-thrust techniques. Economical disposable airways for quick and easy clean up. Removable and reusable faces for convenient and affordable maintenance. Includes: 1 Manikin, Soft Pack, 6 Airways, 10 Foreign Body Practice Objects, and Directions for Use.	
		b. Oral and nasal passages allow realistic nose pinch required for mouth-to-nose ventilation. Natural obstruction of the airway allows students to learn the important technique of opening the airway. Head tilt/chin lift and jaw thrust allow students to practice correctly all maneuvers necessary when resuscitating a real patient. Realistic chest compliance means students can experience the proper technique required for chest compressions on infants. Foreign-body airway obstruction feature allows the release of a foreign-body obstruction to be practiced through back blows and chest-thrust techniques. Economical disposable airways for quick and easy clean up. Removable and reusable faces for convenient and affordable maintenance. Includes: 4 Manikins, Soft Pack, 24 Airways, 40 Foreign Body Practice Objects, and Directions for Use.	

No	Nama Barang	Spesifikasi	Keterangan
13.	Neonatal Intubation	a. Neonatal Intubation Trainer allows teaching of intubation skills on the newborn baby. Robust and realistic, this model allows students to undertake training that is directly transferable to the clinical setting. Realistic anatomy of a newborn baby. Intubation (oral and nasal). Bag-Valve-Mask ventilation. Correct tube placement can be checked by practical inflation test. Includes: 1 Neonatal Infant Head and Upper Torso, 1 Can of Manikin Lubricant, 1 Base with Transparent Cover and Directions for Use.	
14.	Infant Airway	a. Infant Airway Management Trainer provides the realistic anatomy of a 3-month-old infant for teaching and practicing basic and advanced airway management skills. The realism is further enhanced by the elasticity of our new unique tissue and skin material. Product features: • Realistic anatomy of the tongue, oropharynx, epiglottis, larynx, vocal cords, and trachea • Practicing of oral and nasal intubation • Practicing use of LMA (Laryngeal Mask Airway) • Correct tube placement can be checked by practical inflation test • Bag-Valve-Mask ventilation can be practiced • Sellick Maneuver can be performed • Stomach inflation • Realistic tissue simulation	

D. LABORATORIUM MICROTEACHING

No	Nama Barang	Spesifikasi	Keterangan
1	Laboratorium Microteaching	a. Kapasitas 20 mahasiswa A. Ruang Praktikum. 1 Meja Master: Warna : River Teak – Black, Height :min. 750 mm, Width : min. 1200 mm, Depth : min. 530 mm, Partikel Lapisan PVC tahan air, Ada laci berkunci, bahan multiplek min. 18mm Software Keterampilan dasar mengajar dan evaluasi praktik mengajar: 1. Fitur : Berbasis Web, Multi platform (mobile dan Desktop) - Dapat Berjalan di OS Windows, Android dan IOS, Sistem Login-sistem jaringan online atau local jaringan (offline), Hak Akses admin Dosen, Hak Akses admin Mahasiswa (multi audience), Editable aspek penilaian, Penyajian data secara statistic 2. Materi penilaian Dosen : Wawasan profesi dan etika Mengajar, Konsep Penghajaran Mikro, Keterampilan Membuka dan Menutup Pembelajaran, Keterampilan Menjelaskan, Keterampilan Bertanya, Keterampilan Menggunakan Variasi, Keterampilan Memberi Penguatan, Keterampilan Membimbing Diskusi, Keterampilan Mengelola Kelas, Menyusun Rencana Pembelajaran (program pembelajaran, analisis hari efektif dan program pembelajaran, prota, promes, silabus, RPP dan Penilaian) - Praktik I: Keterampilan Mengajar Terintegrasi, Praktik II: Keterampilan Mengajar Terintegrasi, Praktik III: Keterampilan Mengajar Terintegrasi, Praktik IV : Keterampilan Mengajar Terintegrasi, 3. Penilaian Mahasiswa : Penilaian Secara realtime Berbasis Mobile Kabel HDMI 10 meter 2 buah Extender HDMI 1 buah Mic Wireless: 2 buah mic genggam, 1 buah receiver, Kabel 1 meter dengan ujung TRS 1/4" (akai-akai), 2 buah baterai 9V, User manual / guide Kursi Guru: Kursi Putar dengan 5 roda dilengkapi sandaran tangan model manager 4 buah Camera Control Indoor: 3.6MM Sony Effio - 700 TVL, Lens : 3.6 mm, IR CUT, IR LED, 1.3MP, NIGHT VISION Speaker room: Surround Speaker ADC 5 ST 50, 60 W, 8 Ohm, Dual Way bass reflek speaker, Wofer : 5 Inch, Tweeter : 0.75 Inch Kursi Mahasiswa: 20 unit, uk. Min. 430 x 450 x 770 mm, Pipa Bulat min. 22, 7 mm, Finishing : min. Nickel Chrome Plating, Upholstery : min. PVC Vinyl, memo table multiplex lapis mika putih Pendingin ruangan (AC): AC Split 1PK LCD Touchscreen: Display Size 55inch, Screen Type LED Aspect Ratio 16:9, Display Area min. 1209.6(H) x 680.4(V)mm, Resolution: 1920(H) x 1080(V), Android System min. Version Android 4.2.1, CPU min. ARM Cortex A9 Dual Core, RAM min. 1.5gb, Operation System original Windows 7 and above, USB2.0, 3 USB3.0, 1LAN(RJ45), 1VGA Output, 1Earphone Output, 1Microphone Input, 1Mini Display Port, 1HDMI Output, 1Power Requirements 100-240V~50/60Hz Ruang Operator: Audio Mixer+Amplifier: 4 Mic inputs and individual volume adjustable, 1 Ch Equalizer control, High, middle, low of the tone and echo effect adjustable, Output Power (RMS): 70W*2 (4 ohms), Frequency Response: 20Hz-20KHz 3dB, Sensitivity: 120 mV, S/N Ration: 65dB, T.H.D.: 0.1% (1KHz) Komputer built up: 1 unit, processor core i3 4150, DDR3 2GB, HD 500GB, DVD RW, LED 20", Keyboard+Mouse USB, Original windows 7 Professional Headset: Microphone : 9x7/58±2dB Impedance 32	

No	Nama Barang	Spesifikasi	Keterangan
		Ohm at 1 Khz, Sensitivity : 105dB/mW, Frequency response : 20~20,000Hz, Cord length : Approx.2~3M, Cable : Swivel DVR: 960 h dvr 4 ch, 1 audio, vga, Ptz, network, usb, HDD 1 TB, online via smartphone, android, blackberry, windows live, CHANNEL 600KIT+ 3 PCS camera indoor + 1 pcs Camera outdoor UPS: 600VA, Frequency : 550Hz or 60Hz $\pm$1Hz, Transfer Time : 2-8ms, Baterai Recharge Time : 2- 4 hours recover to 90% capacity LED Monitor: 27", 16:9, 1920 x 1080 Meja operator: 1 unit, Warna : River Teak – Black, Height : 750 mm, Width : 1200 mm, Depth : 530 mm, Partikel Lapisan PVC tahan air, Ada laci berkunci Kursi Operator: Kursi Putar dengan 5 roda dilengkapi sandaran tangan model manager Ruang Observasi Hasil Praktikum Mahasiswa: Meja observasi: 1 unit, Warna : River Teak – Black, Height : 750 mm, Width : 1200 mm, Depth : 530 mm, Partikel Lapisan PVC tahan air, Ada laci berkunci LED TV: 32", Input USB HDMI Optical, Resolusi Layar 1366 x 768, USB Port 1, include bracket Kursi Mahasiswa: 5 unit, 430 x 450 x 770 mm, Pipa Bulat 22, 7 mm, Finishing : Nickel Chrome Plating, Upholstery : PVC Vinyl Karpet: 3roll, 60m2, Fiber : Polypropylene, Thickness : 3 mm, Backing : Latex, roll size: 2x20m DVD Player: Multi Format Playback, USB Content Playback, Karaoke Sekat Ruangan bahan rangka hollow galvalum lapis gypsum dan dicat, kaca menggunakan kaca film one way Instalasi dan Training	
b.		Kapasitas 20 Mahasiswa. A. Ruang Praktikum. 1 unit Meja Komputer guru: Bahan multiplek dilapisi HPL min. 18mm, Ukuran approx. 142 x 60 x 73 cm 20 buah Kursi Mahasiswa: Rangka, Pipa bulat, kaku belakang, bentuk U, Finishing: chrome plating, dudukan cat, Cover PVC Vinyl, Memo table: multiplek min. 18mm, lapis formika putih 4 buah Camera CCTV (Day and Night Camera) with back light sensor and iris sensor) min. 1/3" 2 Megapixel 960p AHD, Number of Pixels : min. 1280(H) x 1024(V), Illumination : 0.01Lux / F1.2 , 0Lux / F1.2 (IR LED ON), Video Frame Rate : min. 25/30fps@960p, Electronic Shutter : Auto : 1/45 to 1/45,000 sec), Lens: Built-in min. 4 mm / F2.0 Fix Lens, Array IR LED: 4 pcs, Array IR Effective Distance: Up to 25m, Day & Night: Auto (ICR) / B&W / Color, Gain Control: Auto, Sync. System: Internal, Video Output: Composite signal (1.0 Vp-p composite, 75Ω), Power Source: DC 12V, Working Temperature : -10°C to 50°C, Working Humidity: 0 to 95% RH (non-condensing) 1 unit interactive whiteboard: Infrared technology, Support Windows/Mac/Linux system, Ten users write at the same time ,infrared sensor technology ,with finger touch directly for operation; Strong anti-resistance to light, work directly under sunlight, Module design, simple combination, installation and parts exchange after sale actively; Nano surface ,write by normal EXPO pen ,both normal brush and even wet cloth can clear well; Oxidized aluminum out frame, exquisite and elegant noble sense design; Intelligent gesture-recognition like: start software by palm, turn page by hand-waving, moving writing on page by fingers, fist work as eraser, USB works as direct power supply, update and data transfer; Free software update for lifelongFingers write directly, min. 10 users writing,min. 10 points	

No	Nama Barang	Spesifikasi	Keterangan
		touchScale: 4:3, Active area(mm): min. 1642*1109, Outline area(mm): min. 1776*1245, Boards Material: Alumunium honey comb, Technology: infrared, Writing Type: finger or pen, Positioning Accuracy: max. ≤ 0.2mm, Touch Preciseness: min. 32768*32768, Cursor Speed: min. ≥ 125dots/second, Transferring Rate: min. 12m/s, stand USB Length 6m, working environment: direct under the sunlight, pen and pointer, software CD, usb cable, wall mount, auto scanning form, updated firmware version, usb data port 1 unit LCD Projector Short Throw, Contrast ratio min. 3000:1, Brightness min. 3100 lumens, Aspect ratio: 4:3/16:9, Projection method: rear, front, ceiling, Projection distance range 0,5 – 4 m, Include Bracket LCD bahan alumunium dan Kabel VGA Gold 2 unit Speaker Pasif: 2 ways 3 speakers, bass reflex type, Max. Allowable input 600 W, approx. 304,8 mm cone type (woofer), approx. 76mm cone-type x4 (tweeter) 10, Impedance max. 8, Frequency range 48 Hz-20KHz, Rate sensitivity 92dB (1W/1m), Crossover frequency: max. 3KHz, Anti-magnetic type 1 buah software management pembelajaran: Software managemen pembelajaran (berbasis PHP, dashboard admin, dashboard teacher,dashboard student, user managemen, upload dan download materipelajan, jadwal penggunaan lab online, support upload video hasil rekaman dalam lab microteaching, pengumuman hasil tes lab microteaching online, Multi user (pengguna tidak terbatas), sorting data by name, date, size, uploader, dapat berjalan sesuai dengan sistem operasi yang ada pada Laptop atau Tablet, Account Log-in dan dilengkapi dengan username dan password tiap user, Teknologi server – client ready (hanya diinstal di server, client dapat menjalankan program dari perangkat masing-masing, free domain, free hosting 4 GB, dilengkapi video tutorial), Sertifikasi ISO 27001:2013 1 buah Kursi Master: dapat diputar dan mempunyai sandaran lengan, Tinggi dapat diatur Karpet seluas ruangan (maksimal 8x9 m), bahan terbuat dari serabut plastik, tebal min. 4mm polypropylene software managemen pembelajaran B. Ruang Operator (Pengolah Data): 1 unit Komputer Master: min. core i7, min. 1TB HDD, min. 8 GB DDR 3, Branded, original Windows 10 1 unit TV Tuner Card HDMI 75 Ω TV Antena (IEC) /Video Composite (RCA)/HDMI 9720 p/180i) Component (YPbPr, 720p/a080i) Analog Audio L/R X 2/ Remote sensor Support Resolution : 480i/ 480P/576i/576p/720p/1080i (50/60 Hz), include kabel LCD min. 15 meter Gold Plate 1 unit Speaker Aktif, USB, Jack 3,5 mm, 1W RMS 200 Hz- 18 KHz, 5090 full range 4 70dB 1 unit Meja Komputer operator, Bahan Multiplek di lapisi HPL Ukuran PXLXT approx. 180 cm X 60 cm x 73 cm 1 unit TV LED: min. 32 Inch, Resolusi layar approx. 1,366 X 768, Dolby digital plus, clear motion rate: 100; motion refresh rate: 50 Hz, Mega contrast wide color enhancer, Include rak TV Ukuran approx 80 X 54 X 70 Cm, dengan putaran di bagian atas dan ukuran yang lebar 1 unit Amplifier: 200WX2 (8 Ohm), 350WX2 (4 Ohm), 500WX2 (2 Ohm), bridge 950W, toroidal trafo 1 unit Mixer audio 8 channel: 2 Stereo Return, 2 X 1/4" TRS ALT 3-4 Output, 2 X 1/4" TRS Control Room Output, 3 Band EQ on Every Channel, 12-Segment Stereo LED Meters, 110 dB A-	

No	Nama Barang	Spesifikasi	Keterangan
		Weighted (0 dBu In @ = 22 dB Gain , 0,005% / 0,004% A-Weighted 2 buah Mic Wireless: frekuensi UHF, Audio frequency response (+/-2 dB), Minimum: 45 Hz/Maximum : 15 Khz, Dynamic Range : less than 100 dB A Weigthing Temperature range : -18 to + 50 degrees Celsius, High- Impedance 1/4 inch output head-end voltage is generated 1 buah Kursi Operator. Kursi dapat diputar, mempunyai sandaran lengan, tinggi dapat di atur 1 unit UPS: Capacity min. 1200 VA 1 unit Audio Video Splitter 4 Channel: Video Input : Rated signal Voltge & Impedance : 0,8 -1,0 Vp-p/75 Ω, Video Output : Rated signal Voltage & Impedance 1 .0-1.4 Vp-p/75 Ω. Frequency : Bandwith : 50 Hz-5,5 Mhz. Audio Input : Rated signal Voltage & Impedance : 2V rms/47 KΩ. Frequency : Bandwidth : 10 Hz - 20 KHz, 0 dB 1 unit Digital Video Recorder: min. 8 channel, Network DVR, HDMI, VGA, NO NEED DDNS registration, support min. 1 SATA HDD - 2 TB, max Impressive C. Ruang Observasi (Pengamatan): 5 unit Kursi Sekretaris: Kursi dapat di putar dan memiliki sandaran lengan 1 unit TV LED: min. 32 Inch, Resolusi layar approx. 1,366 X 768, Include rak TV Ukuran approx. 80 X 54 X 70 cm, Rak TV dengan putaran di bagian atas dan ukuran yang lebar Rak TV Sekat ruang: Bahan rangka min. hollow galvalum lapis gypsum dan dicat, Kaca menggunakan kaca film one way. INCLUDE INSTALASI DAN TRAINING	

E. LABORATORIUM BAHASA

No.	Nama Barang	Spesifikasi	Keterangan
1	Laboratorium Bahasa Digital	a. Kapasitas 24 mahasiswa A. MASTER SIDE: Master Kontrol (1 unit): Seat quantity maximal 120 seat with computer and mobile keyboard connection jack which is available to realize Dual control of the main console, "A" (is not built-in amplifier, that means if need to connect, to external speaker, the speaker should have amplifier), "B" (is not built-in amplifier, which is no request, additional amplifier for speaker), Software: produksi tahun berjalan, yang dibuktikan dari tahun produksi yang muncul di tampilan perangkat lunak tersebut yang sudah terinstal di dalam computer / notebook (preloaded), Fitur : a. Multi user (pengguna tidak terbatas), b. Mempunyai fitur controller level callbacks (before and after filter dan before Render), c. Dapat berjalan sesuai dengan sistem operasi yang ada pada Laptop atau Tablet, d. Account Log-in dan dilengkapi dengan usernamedan password tiap user, e. Editable (seluruh konten dapat ditambah/diperbaharui), f. Teknologi server – client ready (hanya diinstal di server, client dapat menjalankan program dari perangkat masing-masing, jika ada pengembangan dari sekolah), g. Upload konten tidak terbatas (Dapat menampung ribuan bahkan puluhan ribu konten), h. Home/ Halaman Utama, i. KAMUS BAHASA NUSANTARA; Komputer Master (1 paket): min. Core i3 7100; RAM min. DDR3 4GB; Hardisk min. WD 1 TB GB, DVDRW, MONITOR min. 19,5", KEYBOARD +MOUSE, min. original windows 10 profesional 64bit; Headset teacher (1 unit): microphone : 9x7/58±2Db, Impedance : max. 32Ohm at 1 KHz, Sensitivity: approx. 105dB/mW, Frequency response : 20~20,000Hz, Cord length : Approx. 2~3M, Weight : Approx. 200g (without cord), Menggunakan kabel ulir atau swivel; UPS (1 unit): Capacity : min. 650 VA, Input : Voltage Range : 25%, Frequency : 50 or 60Hz (Auto Sensing), Output : Battery Mode : 10%, Frequency : 550Hz or 60Hz 1Hz, Transfer Time : approx. 2-8ms, Baterai Recharge Time : 2-4 hours recover to 90% capacity, General: Noise Level : Less than 40dBA, Humidity : 0-90% relative Humidity, 0C - +40C, Dimensi: min. 287 x 100 x 142, Berat: approx. 4,45 kg; Mic Wireless (1 unit): 1. Jangkauan frekuensi: 180-270mHz, VHF high band, 2. Mode: FM, 3. Tanggapan frekuensi: 50Hz - 15kHz, 4. Power: 110V - 220V, 5. Polar Pattern Mic: Unidirectional, 6. Emisi: Lebih dari 45dB, 7. Power Consumption: 5Watt, Produk Termasuk: 2 buah mic genggam, 1 buah receiver, Kabel 1 meter dengan ujung TRS 1/4" (akai-akai), 2 buah baterai 9V; Meja Master (1 unit): Partikel Board min. 18 mm, Bahan Pelapis PVC sheet, Ukuran min. 220 x 120 x 75 cm; Kursi Master (1 unit): Kursi Putar dengan 5 roda dilengkapi sandaran tangan dan hidrolik, model manager. B. STUDENT SIDE: Student Console (24 unit): Two channel program for option, Rob to answer function, LCD Display, Several Examination function, 4 Level of volume, Rob to answer function; Headset Siswa (24 unit): microphone : 9x7/58±2Db, Impedance : max. 32 Ohm at 1 KHz, Sensitivity: approx. 105dB/mW, Frequency response : 20~20,000Hz, Cord length : Approx. 2~3M, Weight : Approx. 200g(without cord), Menggunakan kabel ulir atau swivel; Meja Siswa (twinbooth) (12 unit): Partikel board min. 18 mm, Bahan pelapis PVC Sheet, Ukuran min. 120 x 54 x 115 cm; Student Chair (24 unit): Kursi lipat tipe stainless stell	

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		C. KELENGKAPAN RUANGAN: Karpet (1 rool): Polypropylene min. 3 mm, Backing: Latex, ukuran min. 40m², pemasangan karpet; Room Speaker (2 unit): Rated Input Selection/Impedance : 6W, 3W, 1.5W, 0.8W (100V Line), Frequency Response : approx. 100 ~ 12, 000 Hz, Sound Pressure Level (1W/ 1m) : 90dB, Speaker Components : min. 12cm Dynamic Speaker, External Dimensions (WxHxD) : approx. 290 x 214 x 150mm, Weight : approx. 2.1kg, Material : Enclosure: Wood, grille: Cloth, Color : Enclosure: Light Grey, Grille : Light Grey; Box Stage dan Panggung (1 paket): Box stage Bahan Partikel dan kayu dilapisi karpet warna berbeda dengan karpet lantai; Pendingin Ruangan (AC) + Pasang (1 unit): Split min. 1,5 PK, Standard R410a, Produk SKU, Kapasitas Pendinginan min. 9000 BTU/h, ukuran Pipa Cair & Gas (Inch) ø1/4 ø3/8, Daya Listrik (Watt) approx. 895 Watt, Dimensi (l x w x h) approx. 84 x 27 x 18 cm, Voltase 220 V, Hertz 50 Hz, termasuk perlengkapan dan pemasangan AC. D. KELENGKAPAN TAMBAHAN: LCD Proyektor min. 3200 lumens (1 Unit): Native Resolution min. SVGA (800 x 600), Brightness min. 3200 Lumens, Aspect Ratio Native 4:3 (5 aspect ratio selectable), Lens F=2.56-2.8, f=21-23.1mm, Zoom 1.1:1 (Powered), Interfaces Computer In (D-sub 15pin) x 2 (Share with component), Monitor Out (D-sub 15pin) x 1, Composite Video In (RCA) x 1, S-Video In (Mini DIN 4pin) x 1, Audio In (Mini Jack) x 1, Audio Out (Mini Jack) x 1, Speaker 2W x 1, USB (Type mini B) x 1 (Download & Page/down) RS232 (DB-9pin) x 1, IR Receiver x 1 (Front), Power AC100 to 240V, 50 to 60Hz, Dimensions 283 x 95 x 222mm (include feet), 283 x 88.7 x 222mm (exclude feet), Weight approx. 1,8 kg; Screen Proyektor Tripod min. 70" (1 unit); Bracket (1 unit), Kabel VGA min. 15 meter (1 unit); Kelengkapan Instalasi (1 paket): Kabel listrik min. 3x0,75 mm; TC 6-, Ties 15", Clam 8", Kabel RCA 2 in 1, Ampli eko, Stop Kontak Lubang 6, Stop Kontak Lubang 4, Steker Listrik, Gantungan Headset + Scrup, No Meja 1-40, Kabel Audio dan Power.	

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		b. Kapasitas 24 mahasiswa, MASTER SIDE: Master Kontrol + Software: Pengendali utama sistem lab bahasa yang berbasis software komputer. Bisa dilengkapi dengan sistem <i>touchscreen</i> (optional), SYSTEM CONTROL: Micro Control System with internal memory, RS 232 Control, Digital Circuit Operating Voltage 5 VDC +/- 3% TTL Level, Data Speed 19200 Kbps, High Power Amplifier, Tone Control DC Voltage, Pre Amplifier DC Voltage, Output Headset Earphone 8-16 Ohm Output Room Speaker min. 8 Ohm Power Supply: 220/240V - 50 Hz Power Consumption: 300 - 400 Watt Input: Headset 30-60 Ohm Master Tape, DVD Computer, Audio Recorder, Auxiliary Frequency Response: 100 - 10.000 Hz S/N Ratio 50dB Maximum absolute ratings, 1. Operating Voltage: 24 VDC (Audio Circuit) 6 VDC (Digital Circuit), 2. Operating Temperatures 85 Degrees Celcius, 3. Stand by Temperature 30 Degree Celcius SOFTWARE CONTROL: 1. Listening function; 2. Intercom function; 3. Writing function with keyboard control; 4. Conversation; 5. Video Repeater; 6. Recording audio format mp3; 7. Visualized Attender names and layout; 8. Preprogrammable Seat Layout; 9. User Friendly Graphical User Interface (GUI); 10. Database class, teacher, student as user entries; 11. Evaluator Quiz; 12. Keyboard Control; 13. Inzo Features; 14. Group Selector; 15. Autorun with Adjustable Delay Online Power Monitor: Description: Online Language Lab Power, Temperature and Humidity Monitor for Master Control . Also maintain the temperature of Master Control for a longer lifetime. Features: Communication over 3G Can be accessed via Android/IOS/Laptop/PC WPA/PSK Encrypted Monitor Power Consumption, temperature, humidity Maintain temperature in controller for long lifetime use Sensor Features: Measures kWh, Kvarh, KW, Kvar, KVA, PF, Hz, dmd, V, A, etc Bi-directional measurement IMP & EXP Two pulse outputs RS485 Modbus Din rail mounting 17.5mm 45A direct connection Better than Class 1 accuracy Komputer Master: min. Core i3-3.7, RAM min. 2GB, HDD min. 500GB, dvd rw, Reader/HDMI, led min. 20", No speaker, garansi resmi, min. original Windows 10 Home Master Tape Deck: DVD / SVCD / VCD / CD / MP3 / MPEG4 / MPG / JPEG, 8 Preset Equalizer dan 2 user setting, Surround, Bazzoke, Echo, Clock, Audio, AM/FM with 20 ch memory, Karaoke (AVC dan PMX), Sleep Timer, ON/OFF Timer, Single Deck Cassette Recorder, Band function: Bass, Guitar, Keyboard, SD/MMC/MC Card Slot, USB port, Docking Terminal, Remote Control, Power Consumption: 100w Headset teacher: MIC: type condenser; freq response: 30 - 16.000 Hz; impendence max. 32 Ohm; sensitivity -58 +/- -3 dB, EARPHONE: freq response: 20-16.000 Hz; impendence max. 32 Ohm; sensitivity: 105 dB/mW; cable length: min. 1.5 m; connector/plug: 3 pin UPS: Capacity min. 600 VA 160-240V, AC 50 Hz + input voltage 10%, output voltage : 220 V, AC 50 Hz Mic Wireless: Frequency Stabilization: <±30, Dynamic Range: > 80dB, Total Harmonic Distortion: > 0.5%, Frequency Response: 40Hz - 18 KHz ± 3 dB, Signal-to-Noise Ratio: ≥ 100dB, Signal/Noise Ratio: >82dB Meja Master: Bahan: particle board min. 15 mm dengan laminasi PVC sheet warna beech model U/Standart, ukuran model U: min. 210 x 120 x 75 cm, ukuran model standart : min. 180 x 80 x 75 cm, barang buatan pabrik (knock down system). Merk terdaftar di depkumham Kursi Master: Kursi dapat diputar, mempunyai sandaran lengan, tinggi dapat di atur Document Camera: Document Camera, 8X digital zoom, freeze, output VGA & DVI, 850K pixel, Resolution min. XGA	

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		Audio Recorder: Support MP3, WMA, WAV, Support USB/SD Memory, Recorder rate: higher bit rate for 192 Kbps, LCD Display, support multilateral languages, enter subdirectory, scan folders, display lyrics, line in record, the external audio source can be recorded into the SD card or U disk, Connect computer, USB sound card. Additional function: Calendar, clock, alarm clock, can by USB cable connect to computer to download SD card, IR remote control, support multi language, reach to 24 countries Mouse Pen Tablet: min. 8"x6" working area, comfortable for easy drawing, painting, and using the PC, Cordless mouse and pen design gives you unlimited freedom, 3D scroll wheel for fast browsing on the internet and in windows documents, make handwriting notes/drawings on the internet & any application program, 1024-level pressure sensitivity for all kinds of shapes and thickness control Central Control: Power Supply: 220/240V, Signal Interface: Audio/video input & output, VGA input (exclude laptop, VGA output, 3.5 stereo output, Power Control: Built -in projector power off protection, Delay time can be modified, built-in electronic screen's power supply, Control Method: DB9 standard learning interface, infrared RS485 bilateral control Online class software: Guru bisa meng-upload materi pembelajaran secara online dan siswa bisa mengunduh materi tersebut secara online STUDENT SIDE: Student Console Frequency Response: 63-10.000 Hz, S/N Ratio: > 50 dB, Distortion : < 3 %, Input Mic : - 60 dB, Intercom: - 15 dB, 5000, Headset: - 10 dB, Student Console + Evaluator Quiz with mini keyboard and LCD Display Headset Siswa: MIC: type: condenser; frequency response: 30 - 16.000 Hz; impedance max. 32 Ohm; sensitivity -58 +/- -3 dB, EARPHONE: frequency response: 20-16.000 Hz; impedance max.. 32 Ohm; sensitivity: 105 dB/mW; cable length: 1.5 m; connector/plug: 3 pin Meja Siswa: model twinbooth, bahan particle board min. 15 mm dengan laminasi PVC sheet warna beech dengan kaca + nomor siswa di bagian depan, ukuran: min. 123 x 118 x 54 cm, barang buatan pabrik (knock down system) Student Chair: Bahan stainless steel; jenis lipat (folding chair); min. tinggi 810 mm x lebar 375 mm x panjang 395 mm Audio Recorder: Support MP3, WMA, WAV, Support USB/SD Memory Recorder rate: higher bit rate for 192 Kbps, LCD Display, support multilateral languages, enter subdirectory, scan folders, display lyrics, line in record, the external audio source can be recorded into the SD card or U disk, Connect computer, USB sound card. Additional function: Calendar, clock, alarm clock, can by USB cable connect to computer to download SD card, IR remote control, support multi language, reach to 24 countries KELENGKAPAN RUANGAN: Karpet plus pemasangan: Bahan terbuat dari serabut plastik, tebal min. 4mm polypropylene, lebar min. 4 meter dan panjang mengikuti ukuran ruangan lantai pada ruang lab. Dilapisi karpet Room Speaker: Speaker size: min. 8 inch (Three Way); Power: min. 20.000 PMPO Box Stage Kabel dan Box Stage Master: Box Stage Master: bahan multiplex dilapisi karpet warna berbeda karpet lantai, ukuran approx. 240x180x12cm, Box Stage Kabel: bahan multiplex dilapisi karpet berwarna beda dengan lantai, ukuran approx. 240x60x12cm Parabola + Digital Receiver with TV Record: Parabola with digital receiver dengan antenna type fulldish, 6 feet, penggerak sampai dengan 99 memori position, digital receiver dengan PIP mode Smartboard Multitouch: Perangkat pengajaran interaktif dapat mengubah permukaan yang rata dan keras seperti whiteboard, glassboard, dinding rata menjadi	

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		layar digital yang interaktif. Daerah tayang interaktif pada permukaan keras/whiteboard hingga 400cm. Perangkat terdiri dari 1 buah receiver, 1 buah transmitter berupa pena tulis elektronik (stylus pen) yang sekaligus dapat berfungsi sebagai mouse computer dan keyboard wireless. Koneksi perangkat receiver interaktif ke komputer PC/Laptop menggunakan kabel USB. Dapat bekerja pada sistem operasi Window 7, Macintosh, dan Linux. Data atau text maupun gambar dapat dianotasi, di high-light, di-edit, disimpan maupun dihapus. File/Data pengajaran harus dapat disimpan dalam format: PDF, Vector PDF, HTML, Bitmap, JPEG, TIFF, Metafile, dan Power PPoint. Perangkat dapat merekam tayangan di layar komputer baik audio maupun video ke dalam format file avi, hasil rekaman dapat disimpan dan ditayang ulang dengan window media player Pendingin Ruangan (AC): Cooling capacity min. 1,5 PK; Voltage 200 V/SHz; Dimension indoor approx. 810x220x151 mm; dimension outdoor approx. 660x540x260 mm Internet Modem: Compliant to 3GPP/R99/R5/R6; Support HSDPA / UMTS 2100Mhz (850MHz / 900MHz/ 1900MHz optional); GSM/GPRS/EDGE Quad-Band 850/900/1800/1900 Mhz; SMS Message, Data Service, Phonebook, SIM Management KELENGKAPAN TAMBAHAN: Projector: Resolution: min. SVGA(800 x 600), Brightness: min. 32000 ANSI Lumens, Display Color: 1.07 Billion Colors, Lamp Type: 190W, Horizontal Frequency: 15K-102KHz, Resolution Support: VGA min. (640x480) to UXGA (1600x1200), Vertical Scan Rate: 23-120 Hz, Dimensions (WxHxD): min. 283 x 95 x 222 mm, HDTV Compability: 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, Video Compability: NTSC, PAL, SECAM, include bracket mounting + screen projector min. 70 inch Instalasi Kabel Audio dan Power: kabel : LAN, Connector : RJ 45, kabel RCA, kabel listrik	

F. PERALATAN TEKNOLOGI INFORMASI, DESAIN, DAN KOMUNIKASI

No	Nama Barang	Spesifikasi	Keterangan
1.	Desktop PC	a. Desktop PC; min. Intel® Core™ i5-7500 Processor (3.40 GHz, 6M Cache) up to 3.80 GHz; Chipset Intel H110; Memori Standar min. 4GB DDR4; Memori Slot min. 1; Tipe Grafis min. Intel® HD Graphics; Audio Integrated; Hard Drive min. 1TB; Optical Drive DVD-RW; Networking Integrated; Kecepatan Jaringan 10 / 100 / 1000 Mbps; Ragam Card Reader min. 6 in 1 Media Reader; Antarmuka / Interface min. 4 USB 2.0, 4 USB 3.0, 1 DVI-D, 1 VGA, 1HDMI, 1 RJ-45, Pararel & Serial Port, USB Optical Keyboard & MOUSE, Sistem Operasi min Microsoft Windows 10 Professional 64-bit; Monitor min. 18.5" LED; Chassis Form Factor Microtower; Daya / Power 180 Watt	
		b. Desktop PC, min. 6th Generation Intel Core i5-6400 (6M Cache, up to 3.30 GHz); Operating System min. Windows 10 Single Language (64bit); Memory min. 4GB (4GBx1) min. DDR3L 1600MHz; Hard Drive min. 1TB 7200RPM Hard Drive; DVD RW Optical drive; Monitor min. 18.5"; Graphics min. NVIDIA Geforce 705 2GB GDDR3; Bluetooth + WiFi 802.11bgn + Bluetooth 4.0; LAN 10/100/1000 Ethernet Port; Side Ports min. 2x USB 3.0, Universal Audio Jack; Rear Ports min. 4x USB 2.0, RJ-45, HDMI, VGA, 3-stack audio jacks supporting 5.1 surround sound; Media Card Reader min. 5in1 Memory Card Reader; min. Wired Keyboard; min. Wired Mouse	
		c. Desktop PC; min. Intel® Core™ i5-7500 Processor (3.40 GHz, 6M Cache) up to 3.80 GHz; Memori Standar min. 4GB DDR4; min. Intel HD Graphics; min. Audio Integrated; Hard Drive min. 1TB HDD; Optical Drive DVD±RW; Networking Integrated; USB Keyboard; USB Mouse; interface: Bagian Depan: 4 x USB 3.0, 2 x USB 3.1 Type C, Card reader min. 5 in 1; 2 x audio; Bagian Belakang: 2 x USB 3.0, 2 x USB 2.0, VGA, 2 x DP, 1 x serial port, LAN, 3 x audio, 2 x PS2, Sistem Operasi min. Microsoft Windows 10 Professional 64-bit; Monitor min. 19.5 Inch	
		d. Desktop PC; Intel® Core™ i7-7700 Processor (3.60 GHz, 8M Cache) up to 4.20 GHz; min. 8GB DDR4; min. Intel HD Graphics; Audio Integrated; Hard Drive min. 1TB HDD; Optical Drive DVD-RW; Networking Integrated ; Wired Keyboard; Wired Mouse; Power supply 180 W AC power adapter; External I/O Ports: 1microphone/headphone jack; 2 USB 3.0; 1 SD reader, One 5.25" slim-height bay supporting an optical disk drive, 1 HDMI; 1 power connector; 1 RJ-45; 1 VGA; 2 USB 3.0; 4 USB 2.0; 1 security lock slot; 1 audio in connector; 1 audio out connector; 1 padlock slot; Conexant CX20632 codec with universal audio jack and 2W internal speaker, headset and headphone front ports (3.5 mm), multi-streaming capable; Microsoft Windows 10 Professional; Monitor min. 20 Inch	

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		e. Desktop PC; Intel® Core™ i7-7700 Processor (3.60 GHz, 8M Cache) up to 4.20 GHz; min. 8GB DDR4; min. AMD Radeon R7 450X 4GB; Audio Integrated; Hard Drive min. 1TB HDD; Optical Drive DVD-RW; Networking Integrated; Wired Keyboard; Wired Mouse; Antarmuka / Interface: USB; RJ-45 LAN Port; Serial Port; Display Port 1.2; HDMI 1.4; Universal Audio Jack; Sistem Operasi Windows 10 Pro 64bit; Monitor min. 21.5 Inch	
		f. Desktop PC; Intel® Core™ i7-7700 Processor (3.60 GHz, 8M Cache) up to 4.20 GHz; Intel® B250 Express Chipset; Memori Standar min. 8GB DDR4; min. Intel HD Graphics; Audio Integrated; Hard Drive min. 1TB HDD; Networking Integrated; Keyboard USB Keyboard; USB Mouse; Ragam Slot 2x PCI Express@x16, 1x PCI Express@x1, 1x PCI slot; Antarmuka / Interface: Back: 4x USB 3.0 Ports, 2x USB 2.0 Ports, 2x Display Port Ports, VGA Port, HDMI Port, Ethernet (RJ-45) Port, Front: 2x USB 3.0 Ports, 2x USB 2.0 Ports; Headphone and Microphone Jacks; Sistem Operasi min. Microsoft Windows 10 Home 64 bit, Monitor min. 21.5 Inch	
2.	All in One PC	a. All in One PC; 7th Generation Intel Core i3-7100U (3MB Cache, 2.4GHz) Processor; Hard Drive min. 1TB SATA 7200RPM; Memory min. 4GB DDR4; min. Integrated Intel HD Graphics 630; DVD-RW; Integrated stereo speakers; Gigabit Ethernet 10/100/1000 Mbps + 802.11ac/b/g/n wireless LAN and Bluetooth 4.0 LE; min. 21.5" 1250nits 16:9 LED Backlight; Hinge : Panel Tilttable from -5 to 30 degree; I/O Ports: 2x USB 3.0, USB 2.0, HDMI, GLAN, Audio; Integrated 2.0MP HD high-sense webcam; 3-pin 135W AC Adapter; Microsoft Office 2016 Professional Plus; SD Card Reader; USB Mouse & USB Multimedia Keyboard; Intrusion alert (via BIOS), One-button recovery (OBR), Kensington Lock Slot, 100% solid capacitors, DASH 1.1, Hard Drive password protection (via BIOS); Microsoft Windows 10 Professional	
		b. All in One PC; Hard Drive min. 500GB SATA 7200RPM; 7th Generation Intel® Core™ i3 7100T (3MB Cache, 3.4Ghz) processor; min. Intel® B250 Chipset; Memory min. 4 GB DDR4 2400MHz; Two SODIMM slots - Maximum memory is 32GB; min. Integrated Intel® HD Graphics 630; 8x DVD+/-RW 9.5mm Optical Disk Drive; Integrated Waves Maxx Audio; Gigabit Ethernet 10/100/1000 Mbps + Wireless Intel® 3165 802.11ac/b/g/n + Bluetooth 4.2; min. 19.5 inch Non Touch Wide Viewing Angle WLED, HD+ 1600x900 resolution with anti-glare coating; Articulating Easel Stand for OptiPlex 3050AIO; Dimension approx.. 482.6 (W) x 58 (D) x 328.7 (H) mm (19.0 x 2.32 x 12.94 inches); I/O Ports min. 4x USB 3.1 (1 port USB 3.1 with PowerShare), 2x USB 2.0, 1x DisplayPort 1.2, GLAN, Audio Jack; Developed Recovery Environment, Data Protection System Tools Digital Delivery, Support Assist; Client Command Suite for In-Band systems management; ENERGY STAR 6.1 qualified, EPEAT Registered, TCO Certified, CEL, WEEE, Japan Energy Law, China RoHS; 1.0MP 720P HD Webcam with privacy cover; 3-pin 130 W AC adapter; Microsoft Office 2016 Professional; SD 3.0 Card Reader; Wired Mouse Black & Wired Keyboard; Microsoft Windows 10 Professional.	

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		c. All in One PC; Hard Drive min. 1TB 7200 rpm SATA; Intel Core i3-7100U (2.4Ghz, 3MB Cache, 2 Cores); min. 4 GB DDR4-2133 SDRAM (1x4 GB); min. Intel HD Graphis 620 (KabyLake); DVD-Writer; 2x2 W / channel speakers; Integrated 10/100/1000 GbE LAN, 1 x Ethernet card; 802.11b/g/n (1x1) and bluetooth 4.0; min. 21.5" diagonal FHD IPS anti - glare WLED - backlit (1920x1080); Weight 5.53 KG; Dimension approx. 539 (L) x 185 (W) x 398.8 (H) mm; I/O Ports Rear I/O : 2 x USB 2.0; Headphone/microphone combo; HDMI-Out v1.4 / 1 x VGA Port; VGA Integrated; Integrated Intel KabyLake - U; USB Wired Keyboard; USB Wired Optical Mouse; webcam; 65 W external AC power Adapter; Office 2016 Windows 10; HP 3-in-1 Media Card Reader	
		d. Desktop All In One; Intel® Core™ i3-6006U (2.0 GHz, 3M Cache); Memori Standar 4GB DDR4; Kapasitas Harddisk 1000 GB HDD; Audio Integrated; AMD ATI Radeon 530 2GB; Speaker Integrated; Wired Keyboard; Wired Mouse; Kecepatan Jaringan 10 / 100 / 1000 Mbps; Optical Drive DVD-RW; Microsoft Windows 10 Home; Monitor 21.5 Inch	
		e. Display NON TOUCH SCREEN Full HD 1920 x 1080 resolution 21.5" LED-backlit LCD; Hard Drive min. 1TB SATA HDD; Intel Core i5-7200U, 3MB cache, up to 3.1 Ghz; Memory min. 4GB DDR4 (Up to 16GB); min. Intel HD Graphics 620; Ethernet LAN; External DVD RW (bundled); WLAN 802.11 ac/a/b/g/n + Bluetooth 4.0; Dimension approx. 489.7 mm X 362.5mm X 10.95 mm; I/O Ports 2 USB 3.0 port ; 2 USB 2.0 port ; 1 HDMI out; 1MP HD USB External Webcam; Power Supply Adapter 65W; SD Card Reader; USB Keyboard and Mouse; Win 10 Home	
		f. All in One PC; min. 7th Generation Intel® Core™ i5-7200U Processor(3M Cache, up to 2.80 GHz); 8GB Single Channel DDR4 1600MHz (8GBx1); Hard drive min. 1TB 5400 rpm Hard Drive; min. Intel HD Graphics; Tray load DVD Drive; Display 21.5-inch FHD (1920 x 1080) Anti-glare LED-Backlit Touch Display with IPS; 802.11 a/c + Bluetooth 4.0 Dual Band 2.4&5 GHz, 1x1; Wireless Keyboard; Wireless Mouse Black; 10/100/1000 Ethernet Port; port side 2x USB 3.0, 4:1 MCR, 1x Microphone/Headset jack; Ports Rear 2x USB 2.0, RJ-45, Audio Line Out, DC power, HDMI-In (Intel), HDMI-out (AMD); Media Card Reader 4in1 Memory Card Reader; Windows 10 Single Language (64bit); Integrated Widescreen HD 720P Webcam with Dual digital microphone	

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		g. Processor: Intel® Core i5-7200U, Display: 19.5" diagonal FHD UWVA anti-glare WLED-backlit, Memory :4 GB DDR4-2133 SDRAM (1 x 4 GB) Memory slots: 2 SODIMM, Memory card device: 3-in-1 memory card reader, Hard drive: 1 TB 7200 RPM SATA, Keyboard: HP White Wireless Keyboard with volume control, Ports: 2 USB 2.0; 2 USB 3.0; 1 headphone/microphone combo, OS : Windows 10 Pro 64bit	
		h. Intel® Core™ i5-7400T Processor (2.40 GHz, Up to 3.00 GHz, 6M Cache); Sistem Operasi Microsoft Windows 10; Networking Integrated; Monitor 21.5 Inch; Memori Standar 4GB DDR4; Audio Integrated; Hard Drive 1TB HDD; Tipe Grafis AMD ATI Radeon 530 2GB; Speaker Integrated; Memori / RAM 4 GB; Optical Drive DVD-RW	
3.	PC for Design	a. Prosesor: Intel Xeon E3-1275 v6; RAM: 16GB (2x8GB) DDR4 HDD: 1TB; Tipe Grafis: AMD Radeon Pro WX 4150; Monitor: 27 inch; Sistem Operasi: Win 10 Pro	
		b. Prosesor: Intel Core i5 3.2GHz; RAM: 8GB (2x4GB) DDR3 Hardisk: 1TB HDD Grafis: VGA AMD Radeon R9 M390 2GB Monitor: 27" Retina 5K Display Sistem Operasi: Mac OS X	
		c. Processor: Intel Core i7-8700T; RAM: 16GB (2x8GB) DDR4; SSD: 128GB; HDD: 1TB; ODD: External DVD RW; VGA: NVIDIA GeForce GTX1050 4GB; Konektivitas: Wifi + Bluetooth + LAN; Ukuran Layar: 23.8 Inch FHD Touch; Sistem Operasi: Windows 10 Home	

No	Nama Barang	Spesifikasi		Keterangan
		d.	Prosesor: Intel Core i7-7700T RAM: 4GB DDR4 HDD: 2TB Grafik: AMD ATI Radeon 530 2GB ODD: DVDRW Ukuran Layar: 23.8" FHD Touchscreen Sistem Operasi: Win 10	
		e.	Processor: Intel Xeon W 8 Core 3.2GHz RAM: 32GB SSD: 1TB Grafik: Radeon Pro Vega 56 graphics 8GB Ukuran Layar: 27 inch with 5K Retina Display Sistem Operasi: macOS High Sierra	
4.	Projector	a.	Sistem Projector DLP Technology; Resolusi Native WXGA (1280x800); Brightness 3300 Lumens ANSI; Rasio Kontras 20,000:1 (DynamicEco Mode); Rasio Aspek 16:10; Rasio Besaran (Zoom) Optical Zoom: 1.1x ; Digital Zoom:0.8X-2.0X; Input: RGB Input : VGA Input x2, Composite Video : RCA-1 x1, S Video : Mini-Din 4 pin x1, Component Video : Share with VGA x2, Digital : HDMI: 1.4 x 1, Audio input:3.5mm Mini-Mono Jack x1, Control : RS-232(DB-9) x1, Output RGB Output : VGA Output x1, Audio output:3.5mm Mini-Mono Jack x1, Speaker 2W cube x 1, Daya / Power 100-240Vac 50/60Hz (Auto Switching), Konsumsi Daya 265 W (Max.); Dimensi Kemasan: 316 x 103.7 x 228 mm, Berat Produk 2.2 kg	
		b.	Technology DLP; WXGA(1280x800); Rasio Kontras 15000; Rasio Aspek 4:3; Tipe Lampu SP-LAMP-086; Input: DMI 1.4, VGA x 2, Composite video, S-Video, 3.5 mm, stereo in x 2, 3.5mm stereo out, RS232C, USB Type B (control & firmware); Kesesuaian Video NTSC / NTSC4.43 / PAL / PAL-M / PAL-N / SECAM, SDTV (480i, 576i), EDTV (480p, 576p), HDTV (720p, 1080i, 1080p); Daya / Power 260W; Dimensi Produk 8.7in x 11.5in x 4.3in (220mm x 292mm x 108mm); Lumens (Eco/High): 5000/3500; Supports 3D content from Blu-ray, cable boxes, dish services and more (over HDMI) at 144Hz and PC-based, 3D content at 120Hz. DLP Link 3D glasses required; Closed Captioning: Yes; Audible Noise (Eco/High, dBA): 29/30; Keystone: ± 40°; Lamp Hours (Eco/High): 6000/5000; Image Offset: 15; Throw Ratio: 2.2~1.9	

No	Nama Barang	Spesifikasi	Keterangan
		c. Sistem Projector RGB liquid crystal shutter projection system (3LCD); Resolusi Native XGA (1024 x 768); Brightness 3000 Lumens ANSI; Rasio Kontras 10,000:1; Rasio Besaran (Zoom) Type : Optical Zoom (Manual) / Focus (Manual); F-Number : 1.51 - 1.99; Focal Length : 18.2 - 29.2 mm; Zoom Ratio : 1 - 1.6; Throw Ratio : 1.38 - 2.24 (Wide - Tele); Tipe Lampu 200W UHE; Input: Video : 1 x RCA (Yellow), 1 x S-Video, 2 x Component (via D-sub 15-pin), Computer : 2 x D-sub 15-Pin (RGB), 1 x USB 2.0 type B, USB Memory Device : USB Type A Ver.2.0 , Three-In-One USB Display : 1 x USB 2.0 type B, Digital : 2 x HDMI (1 x MHL), Audio : 1 x RCA (Red/White), 2 x Stereo mini jack, Control : 1 x USB 2.0 type B, RS232C, Epson USB Document Camera : 1 x USB 2.0 type B, Network I/O: 1 x RJ45 (100Mbps), Wireless Connectivity : Optional (ELP-AP07), Output Video: D-sub 15 pin (black molding), Audio: Stereo mini jack x 1, Speaker Speaker Output : 16 W, Lamp On (Normal / Eco) : 287W / 215W	
		d. Sistem Projector LCD Technology; Resolusi Native XGA (1024 x 768); Brightness 3000 Lumens; Rasio Kontras 15000:1; Tipe Lampu 10.000 (EcoMode); Input: 1 x RGB In, 1 x USB A, 2 x HDMI, LAN, 1 x RCA, 1 x Mini Jack, Berat Produk 3.0 Kg, Direct Power Off, Auto Keystone Correction	
5.	Screen Projector	a. Motorized Screen, 100 inch Diagonal, 150cm x 200cm; Quiet and reliable screen; With motorized roller system provides a quite, reliable screen operation can be activated by switch, remote control or a projector screen trigger, Ideal for auditoriums, conference rooms, training rooms or classrooms, Strong and modern square housing with steel and cap	
		b. Manual Wall, Format 4:3, Diagonal size 100" / 150x200 cm	

No	Nama Barang	Spesifikasi	Keterangan
6.	Printer Laserjet	a. Print speed black (normal, A4) : Up to 18 ppm, Print speed black (normal, letter) : Up to 19 ppm First page out black (A4, ready) As fast as 8.5 sec Recommended monthly page volume 250 to 1500 Duty cycle Up to 5000 pages Resolution (black) Up to 400 x 600 x 2 dpi (600 dpi effective output) Paper trays, standard 1 (plus 10-sheet priority feed slot) Paper trays, maximum 1 (plus 10-sheet priority feed slot) Connectivity, standard 1 Hi-Speed USB 2.0, 1 WiFi 802.11b/g, Mobile printing capability, Network ready Standard (built-in WiFi 802.11b/g), Ports 1 Hi-Speed USB 2.0 1 WiFi 802.11b/g Fax transmission speed 6.4 B(A) Control panel 3 LED indicator lights (Wireless, Attention, Ready), 2 buttons (Wireless, Cancel), Memory Ram 8 MB Paper handling input, standard 10-sheet priority feed slot, 150-sheet input tray, Paper handling output, standard 100-sheet output bin, Duplex Print Manual, Finished output handling Sheetfed, Media types Paper (laser, plain, photo, rough, vellum), envelopes, labels, cardstock, transparencies, postcards, Media sizes supported A4, A5, A6, B5, postcards, envelopes (C5, DL, B5), Envelope input capacity Connection and Communication, Supported media weight 60 to 163 g/m ² , Power consumption 370 watts (Printing), 2.7 watts (Ready), 2.0 watts (Auto-Off), 0.6 watts (Manual-Off), Energy efficiency ENERGY STAR® qualified, Operating temperature range 15 to 32.5° C, Acoustic power emissions 6.4 B(A), Acoustic pressure emissions bystander (active, printing) 50 dB(A)	
		b. Printing Method Monochrome Laser Beam Printing Print Speed A4: Up to 18ppm, Letter: Up to 19ppm, Print Resolution 600 x 600dpi, Print Quality with Image Refinement Quality 2400 (equivalent) x 600dpi, Warm-Up Time (From Power On) 10secs. or less, First Printout Time (FPOT); Approx. 7.8secs. Recovery Time (From Sleep Mode) Approx. 1secs., Print Language UFR II LT, Paper Input (Standard) 150 sheets (based on 80g/m ²), Paper Output 100 sheets (face down) (based on 80g/m ²), Paper Size A4, B5, A5, Legal, Letter, Executive, 16K, Envelope COM10, Envelope Monarch, Envelope C5, Envelope DL, Custom: Width 76.2 to 215.9mm x Length 188 to 355.6mm, Paper Weight 60 to 163g/m ² , Paper Type Plain paper, Heavy Paper, Transparency, Label, Envelope. USB Interface USB 2.0 High Speed Operation Panel 2 LED Indicators, 2 Operation Key, Device Memory 32MB Noise Level*4 During Operation: Sound Power Level: 6.53B or less, Sound Pressure Level: Approx. 49.3dB, During Standby: Sound Power Level: Inaudible, Sound Pressure Level: Inaudible, Maximum Power Consumption 840W or less, Average Power Consumption During Operation: Approx. 320W, During Standby: Approx. 1.8W, During Sleep: Approx. 0.8W, Energy Star TEC (Typical Electricity Consumption) 0.48kWh/week, Operating Environment Temperature: 10~30°C, Humidity: 20% to 80% RH (no condensation), Power Requirement 220 - 240V (±10%), 50 / 60Hz (±2Hz) Monthly Duty Cycle Up to 5,000 pages	

No	Nama Barang	Spesifikasi	Keterangan
		c. Technology Electrophotographic/Laser Memory 32 MB Function Compact, Print, Wireless Networking Interface Hi-Speed USB 2.0, Wireless Print Speed Up to 20ppm, Print Resolution Up to 2400 x 600 dpi, Manual Duplex Paper Input (Standard Tray) 150-sheet Paper Handling Sizes A4, Letter, A5, A5(Long Edge), Executive, Legal, Folio, B5, Paper Output 50-sheet Power Consumption Ready: 40W, Printing: 380W, Deep Sleep: 0.7W Noise Level Printing 51dBA	
7.	Printer InkJet	a. Input Tray #1: 100 sheets, A4 Plain paper (75 gsm); Compatible Media Sizes: A4, A5, A6, B5, 10 x 15 cm (4 x 6 in), 13 x 18 cm (5 x 7 in), 9 x 13 cm (3.5 x 5 in), Letter (8½ x 11 in), Legal (8½ x 14 in), Half Letter (5½ x 8½ in), 13 x 20 cm (5 x 8 in), 20 x 25 cm (8 x 10 in), 16:9 wide size, 100 x 148 mm, Envelopes: #10, DL, C6; Photo Printing: Photo Draft - 10x15 cm/4x6 : Approx. 27 sec per photo (W/Border); Photo Default - 10x15 cm/4x6 : Approx. 69 sec per photo (W/Border) , Copier Function: Copy Speed, ISO 29183, A4, Simplex : Approx. 7.7 ipm / 3.8 ipm (Black/Colour) , Copy Quality : Standard copy mode, Maximum Copies from Standalone : 20 copies , Maximum Copy Size : A4, Letter , Scanner Function: Scanner Type : Flatbed colour image scanner ; Sensor Type: CIS , Optical Resolution : 600 x 1200 dpi , Maximum Scan Area : 216 x 297 mm (8.5 x 11.7 Inch) , Scanner Bit Depth, Colour : 48-bit input, 24-bit output , Grayscale : 16-bit input, 8-bit output , Black & White : 16-bit input, 1-bit output , Scan Speed (Flatbed / ADF) 300 dpi, Monochrome : 11 sec , Colour : 28 sec , Power Consumption: Operating : 13W ; Standby : 3.8W , Sleep : 0.8 W , Power off : 0.3 W , AC Adapter: AC 100-240V ; Dimensi Produk: 482 x 300 x 145 mm ; Berat Produk: 4.4 Kg	
		b. Platform: Color Inkjet ; Metode Cetak: InkJet ; Maks. Besaran Kertas: A4 ; Maks. Resolusi 4800 , Effective Print Resolution: 4800 (horizontal)*1 x 1200 (vertical) dpi ; Kecepatan Cetak B/W 8.8 ipm , Kecepatan Cetak Warna 5.0 ipm , Konektivitas: USB, Wireless ; Jaringan Available , Network Device Protocol TCP/IP , Compatible Media Sizes A4, A5, B5, Letter, Legal, 4 x 6 , Photo Printing Approx. 60secs., Copier Function available , Power Consumption OFF : Approx. 0.3W , Standby (scanning lamp is off) : Approx. 1.7W , Copying (USB Connection to PC) : Approx. 14W ; AC Adapter AC 100-240V, 50 / 60Hz , Dimensi Produk Approx. 445 x 330 x 163mm (W x D x H) , Dimensi Kemasan : 48 x 53 x 25 cm ; Berat Produk: Approx. 5.8kg	
		c. Platform: Multifunction ; Metode Cetak: Thermal Inkjet ; Teknologi Cetak: Thermal Inkjet ; Maks. Besaran Kertas: A4 ; Maks. Resolusi: 4800 ; Kecepatan Cetak B/W: Up to 7.5 ppm ; Kecepatan Cetak Warna: Up to 4.5 ppm ; Konektivitas: 1 Hi-Speed USB 2.0 , Wireless ; Memori Standar: Integrated ; Maks. Memori: Integrated ; Input Tray #1: Paper handling input, standard: 60-sheet input tray , Paper handling output, standard: 25-sheet output tray ; Media: Plain paper, Photo paper, Brochure paper ; Compatible Media Sizes: Media sizes supported: A4, B5, A6, DL Envelope , Media sizes custom: 76.2 x 127 to 215 x 355 mm ;	

No	Nama Barang	Spesifikasi	Keterangan
		Duplex Printing: Manual ; Copier Function: Copy resolution (black text): Up to 600 x 300 dpi , Copy resolution (color text and graphics): Up to 600 x 300 dpi , Copies, maximum: Up to 9 copies ; Scanner Function: Scanner type: Flatbed , Scan file format: JPEG, TIFF, PDF, BMP, PNG, Scan resolution, optical: Up to 1200 dpi , Bit depth: 24-bit , Scan size (flatbed), maximum: Scan size (flatbed), maximum ; Power Consumption: 10 watts maximum, 0.07 watts (Off), 2.1 watts (Standby), 0.88 watt (Sleep) ; AC Adapter: Input voltage 100 to 240 VAC (+/- 10%), 50/60 Hz (+/- 3 Hz). High voltage: Input voltage 200 to 240 VAC (+/- 10%), 50/60 Hz (+/- 3Hz) ; Dimensi Produk: Minimum dimensions : 525 x 310 x 158 mm , Maximum dimensions : 525 x 553.5 x 256.6 mm , Dimensi Kemasan : 525 x 310 x 158 mm ; Berat Produk: 4.67 kg	
		d. ,200 x 6,000 dpi ; Kecepatan Cetak B/W: 11ppm , Kecepatan Cetak Warna: 6ppm ; Konektivitas: USB 2.0 Hi-Speed ; Memori Standar: 64 MB ; Input Tray #1: 100 sheets ; Compatible Media Sizes: A4, A5, A6, Exe, LTR, LGL, Photo 4X6 ; Copier Function: Copy Resolution :Print: Max. 1200x2400 dpi ,Scan: Max. 1200x1200 dpi ,N-in-1 Function : Compress 2 or 4 pages onto a single sheet (including ID Copy); Scanner Function: Scanning Resolution : Up to 1,200 x 2,400 dpi , Scanning Capability : Colour & Monochrome , Scan to Feature : E-mail, Image, File; Power Consumption: Copying Mode: Approx. 16W , Ready Mode: Approx. 2.5W , Sleep Mode: Approx. 0.7W ; Lain-lain: Wireless Network Connection , Mobile Printing iPrint & iScan , AirPrint ; Dimensi Produk: (W x D x H) 435 x 374 x 161 mm ; Berat Produk: 7.1 Kg	
		e. Color Inkjet Maks. Resolusi 9600 Effective Print Resolution Black: 600 x 600 dpi Color: 9600 x 2400 dpi Kecepatan Cetak B/W 15 ppm Kecepatan Cetak Warna 10.4ipm ppm Monthly Usage Volume up to 12,000 pages / month Konektivitas USB, Wireless Compatible Media Sizes A3+, A3, A4, A5, B4, B5, LTR, LGL, LDR, 4 x 6", 5 x 7", 8 x 10", 10 x 12", Envelopes (DL, COM10), Custom size (width 55mm - 329mm, length 91mm - 676mm) Print Head / Ink : Individual Ink Tank Number of Nozzles : Total 5,120 nozzles Printable Width : Up to 322.2mm (12.7inch), Borderless: Up to 329mm (13inch) Ink End Sensor : Optical sensor + Dot count	
		f. Multifunction Thermal Inkjet A3 Maks. Resolusi 4800 Effective Print Resolution 4800 x 1200 Kecepatan Cetak B/W Up to 33 ppm Kecepatan Cetak Warna Up to 29 ppm Monthly Usage Volume Up to 12,000 pages Konektivitas: 1 USB 2.0, 1 Ethernet, 1 Wireless 802.11b/g/n, 1 USB host port, 2 RJ-11 fax Processor 500 MHz Memori Standar 256 MB 250-sheet input tray Duplex Printing Automatic Facsimile Copier Scanner Flatbed, ADF, Digital sending standard features: Scan to PC Scan to Memory Device Scan to email	

No	Nama Barang	Spesifikasi	Keterangan
		g. A3+ 5760 x 1440 dpi Black/White 30 ppm Color 17 ppm Tray 1# 100 Double-sided Printing: Yes (Manual) Print Method: On-demand ink jet Nozzle Configuration: 360 nozzles Black, 59 nozzles each colour (Cyan, Magenta, Yellow) Print Direction: Bi-directional printing, Uni-directional printing Maximum Resolution: 5760 x 1440 dpi (with Variable-Sized Droplet Technology) Minimum Ink Droplet Volume: 3pl Paper Feed Method: Friction feed Number of Paper Trays: 1 Connectivity: USB 2.0 Hi-Speed A4 Plain paper (75gsm) 20 sheets, Premium Glossy Photo Paper Output Capacity: 50 sheets, A4 Plain paper 30 sheets, Premium Glossy Photo Paper Paper Size: A3+, A3, B4, A4, A5, A6, B5, 10x15cm (4x6), 13x18cm (5x7"), 16:9 wide size, Letter (8.5x11"), Legal (8.5x14"), Half Letter (5.5x8.5"), 9x13cm (3.5x5"), 13x20cm (5x8"), 20x25cm (8x10"), Envelopes: #10 (4.125x9.5") DL(110x220mm), C4 (229x324mm), C6(114x162mm) Maximum Paper Size: 12.95 x 44"	
8.	UPS	a. On-line Double Conversion, UPS 10kVA/10kW, PF 1, 230V, Three-Phase, Tower, Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, USB, Power Management Software, Extended Runtime Nominal Input Voltage : 230V, 400V 3PH Input Connections : Hard Wire 3 wire (1PH+N+G), Hard Wire 5-wire (3PH + N + G), Input voltage range for main operations : 160 - 275V, Input voltage adjustable range for mains operation : 100 - 275 (half load), 173 - 476 (half load)V, Other Input Voltages : 220, 240, 380, 415 Output Voltage Distortion : Less than 3%, Crest Factor : 3 : 1, Waveform Type : Sine wave Back-Up Time Half Load 11 min (5000 Watts) Back-Up Time Full Load 4 min (10000 Watts) Antarmuka / Interface Contact Closure, RJ-45 10/100 Base-T, RJ-45 Serial, Smart-Slot, USB, Available SmartSlot™ Interface Quantity : 1 Battery Type : Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof, Typical recharge time : 3 hour(s)	
		b. On-Line Double Conversion, 10000VA/8000W, 220V, PF 0.8, Single-Phase, RS232, USB, Tower, Intelligent Power Software, Koneksi : Hardwired, Kisaran Tegangan Masuk : 176-276V without derating (up to 110-276V with derating), Arus Sirkuit Pendek : 137 A, Tegangan : 220V/230V/240V ±2 %, Voltage THD : <3%, Reseptakel Keluaran : Hardwired Port Komunikasi : 1 USB port + 1 RS232 serial port (USB and RS232 ports cannot be used simultaneously), Slot Komunikasi : 1 slot for Network-MS, ModBus-MS or Relay-MS cards	
		c. On-Line Double Conversion 10000VA/8000W PF 0.8 230V Single Phase Tower Low Line Transfer : 176VAC ;À3% @ 100% Load, 110VAC ;À3% @ 50% Load, Low Line Comeback : 186VAC @ 100% Load, High Line Transfer : 300VAC ;À3%, High Line Comeback : 290VAC ;À3%, Frequency Range : 46-54Hz or 56-64Hz Current Crest Ratio : 3:1 Waveform (Battery Mode) : Pure Sinewave Battery Type : 12V9AH, Numbers : 20, Typical Recharge Time : 9 hours recover to 90% capacity LCD Panel Alarm	

No	Nama Barang	Spesifikasi		Keterangan
9.	Kamera Digital	a.	APS-C CMOS Sensor; mirrorless; 24.2 Megapixels; DIGIC 7 Image Processor; 3" LCD Display; LCD Touchscreen (1,040,000 pixels); Built-In Wi-Fi with NFC; Full HD 1080p Video; Dual Pixel CMOS AF; INCLUDE: EF-M 15-45mm f/3.5-6.3 IS STM and EF-M 22mm Lens; Ukuran Sensor 22.3 x 14.9 mm CMOS Sensor; Shutter Speed 30 - 1/4000 Second , Bulb Mode; Max. Resolusi Gambar 6000 x 4000; ISO Sensitivity 100-25600	
		b.	Exmor APS HD CMOS Sensor 23.5 x 15.6 mm; 24.3 Megapixel; 3.0 inch Wide type TFT; AVCHD / MP4; SD/SDHC/SDXC/Memory Stick Pro Duo/Memory Stick PRO HG-Duo Card Slot; BIONZ X Image Processor; Built-in WiFi; INCLUDE 35mm f/1.8 OSS Lens; HDMI D (Micro), USB 2.0, Wired Remote Port; ISO Sensitivity Auto, 100-25600; Max. Resolusi Gambar 6000 x 4000	
		c.	APS-C Digital SLR; 24.2 Megapixels; CMOS Sensor ; 22.5 x 15 mm; 3.0" 1.04m-Dot Vari-Angle Touchscreen; Built-in Wi-Fi; SD/SDHC/SDXC Memory Cards; 45-Point All Cross-Type AF System; INCLUDE EF-S 18-135mm f/3.5-5.6 IS USM Lens; Eye-level SLR (with fixed pentaprism)	
		d.	24.2MP APS-C Exmor CMOS Sensor approx 23.5 x 15.6 mm; Mirrorless; BIONZ X Image Processor; Max. Resolution 6000 x 4000; 3.0" 921.6k-Dot Tilting LCD Monitor; 4D FOCUS with 425 Phase-Detect Points; SD/SDHC/SDXC/microSD/SDHC/SDXC Card Slot, HDMI Type D, USB 2.0; Built-In Wi-Fi with NFC; INCLUDE 18-135mm f/3.5-5.6 OSS Lens; 1 x NP-FW50 Rechargeable Lithium-Ion Battery Pack, 7.2 VDC, 1080 mAh	

No	Nama Barang	Spesifikasi		Keterangan
10.	Handycam	a.	6.03 Megapixel; 1/3.1-inch BSI MOS Sensor; Full-HD (1920x1080) Recording; 5-axis HYBRID O.I.S.+ with Level Shot Function; Viewfinder 0.24-inch Wide EVF; Touch Screen 3.0" Wide LCD Monitor; 20x Optical Zoom; 40x Intelligent Zoom; Dual memory card slot for Simultaneous/ Relay Recording; INCLUDE: Shoulder Mount Camcorder with LCD Touchscreen & LED Light, AC Adapter, AC Cable, 2900mAh Rechargeable Battery, EVF Eyepiece Cup, Lens Cap, Light Diffusion Filter	
		b.	Shape Horizontal; Valid Video Pixel 28 MP; Optical Zoom 15 x; LCD Monitor 3.5 inch; Optical Sensor Type / Size 1/2.8 inches; Exmor CMOS Sensors; Resolusi 1920x1080 - Full HD , 1280x720 - HD, 720x576, 1440x1080 - HD; Digital Zoom 30 x; Recording Media SD Card, SDHC Card, SDXC Card, Memory Stick PRO Duo; 3D, Finder, Koneksi USB; HDMI, Tipe Baterai 7.2V (battery pack); 8.4V (AC Adaptor), Battery Life Approx. 390 min with NP-F970 [NTSC] or NP-F770 [PAL] batteries; (video light Off), Approx. 265 min with NP-F970 [NTSC] or NP-F770 [PAL] batteries (video light On); Dimensi (WxHxD) Approx. 174.5 x 187.5 x 342 mm, 6_7/8 x 7_12 x 13_1/2 inches (with lens hood, eye piece. and protrusion); Berat Approx 2.21 kg, 4 lb 13 oz (with lens hood), Approx. 2.51 kg, Approx. 5lb_8oz (with lens hood, eyecup, NP-F970 battery)"	
11.	Drone	a.	20 Megapixel 1" CMOS Sensor FOV 84° 8.8 mm/24 mm Lens C4K Recording (4096x2160) 3-Axis Gimbal 30-Minute Flight Time 7km long-range control Mechanical Shutter 5-Direction Obstacle Sensing MicroSD Slot (Up to 128GB) LiPo 4S 15.2V 5870mAh Drone Battery	
		b.	12MP 1/2.3" CMOS Sensor UHD 4K Video (3840 x 2160) Max Image Resolution: 4056 x 3040 3-Axis Gimbal-Stabilized Camera GPS- & Vision Position-Based Navigation 8GB of Internal Storage Top Speed of 43 mph in Sport Mode 3-Directional Environment Sensing Up to 21 Minutes of Flight Time	

No	Nama Barang	Spesifikasi	Keterangan
		c. 12MP 1/2.3" CMOS Sensor 2x 24-48mm Optical Zoom + Dolly Zoom 48MP Super Resolution Photos OcuSync 2.0 Transmission Technology Up to 31 Minutes Flight Time Top Speed of 44.7 mph Omnidirectional Obstacle Sensing Hyperlapse Time-Lapse Mode Enhanced HDR Photos with 13 EV	
12.	Drawing Table	a. interactive Pen Display; 21.5"; Full HD 1920 x 1080 Native Resolution; USB	
13.	Interactive Board	a. Ukuran Layar 55"; Resolusi Layar 1920 x 1080; Brightness 450 cd/m²; Rasio Kontras 1100 : 1; Horizontal View Angle 178°; Vertical View Angle 178°; Connectivity DisplayPort (1.2), HDMI (x2), VGA (via DVI), DVI-I (digital + analogue) 1x, RJ45; Power Supply AC 100 - 240 V - (+/- 10%), 50 / 60 Hz; Standby power consumption <0.5W; Consumption (Typical) 76 W; Dimensi Produk approx. 1271 x 741.8 x 91.4 mm; Berat Produk 31 kg	
		b. Ukuran Layar 55"; Resolusi Layar 1920 x 1080; Brightness 400 nit; Rasio Kontras 4000:1; Horizontal View Angle 178°; Vertical View Angle 178°; Horizontal Freq. 30 - 81 KHz; Vertical Freq. 48 - 75 Hz; Waktu Respon 8 ms; Connectivity DVI-I(D-Sub Common), Display Port 1.2 (1), HDMI 2.0 (2), HDCP 2.2, Stereo mini Jack, RGB/DVI/HDMI, USB 2.0 x 2 (1 Used for Touch); Power Supply AC 100 - 240 V - (+/- 10%), 50 / 60 Hz; Konsumsi Daya Max[W/h] 187 Typical[W/h] 117 BTU(Max) 525, Sleep mode less than 0.5W, Off mode less than 0.5W, Dimensi Produk approx. 1,248.4 X 733.4 X 58.4 mm; Berat Produk approx. 26.4 Kg; Built in Speaker(10W + 10W)	

No	Nama Barang	Spesifikasi	Keterangan
		c. Ukuran Layar 55" Resolusi Layar 1920 x 1080 Connectivity VGA, HDMI, Audio, USB Dimensi Produk 126.3 x 73.4 x 7.5 cm Berat Produk 85 kg	
		d. Ukuran Panel 55 Inch; Resolusi 3840 x 2160; Brightness 350 cd / m ² ; Response Time 8 ms; Antarmuka / Interface: USB 2.0 Type A x2, HDMI Out, HDMI 2.0 In, HDMI 1.4 In x2, Display Port In, PC Video/Audio In, USB 3.0 Type A, USB 3.0 Type B, Composite In, USB 2.0 Type A, SPDIF, Audio Out, LAN, RS232; Copy Area 55 Inch; Suplai Daya 100 - 240V AC, 50/60 Hz; Konsumsi Daya: Consumption With Slot-In PC (typical) : 224W, Consumption Without Slot-In PC (typical) : 129W, Stand-by <0.5W, Dimensi Produk approx. 1304 x 800 x 97 mm, Berat Produk approx. 32.5 Kg	
		e. Ukuran Layar 49 Inch Resolusi Layar 1920 x 1080 Brightness 450 cd/m ² Connectivity HDMI x1, VGA x1, DVI x1, Audio x1, USB x1, Touch USB x1 Konsumsi Daya 57W Dimensi Produk approx. 1136.8 x 667 x 74.9 mm Berat Produk approx. 25 kg	
14.	3D Printing	a. Size : approx. 510 X 400 X 415mm; Weight : approx. 8.5kg; Printing Scope : min. 220 X 220 X 240mm; Printing Speed : min. 100mm/s, X-axis, Y-axis accuracy : 0.012mm; Z-axis positioning accuracy : 0.004mm; Material Diameter : 1.75mm; Operating Temperature : 10 ~ 30°C; Supported File Format : G code, OBJ, STL; Supply Voltage : 12V 16.6A (200W); Operating System : Windows XP/ 7/ 8/ 10, Mac, Linux; LCD Display : 20 X 4 Text LCD; Switch : Axis Limit Switch 3EA; Stepping Motor : NEMA 17 Stepping Motor; Extruder : Working voltage : 12V default 12V, Axis speed : 40mm/s, Sensor : NTC; Thermistor Sensor (NTC 3950); Heating Bed : Power Input : 12V; Timing Belt : Type : 2GT; Power Supply : Output voltage : DC 12V / 20A, Input voltage : AC 110V - 220V; Rated power : 250W; Air Blower : - Rated voltage : DC 24V, Rated current : 0.17A, Number of revolution : about 7500 RPM, Noise : 25dB; Cooling Fan : Operation voltage : DC10.8-13.2, Consuming Power : 1.2W (1.44 Max.); Frame : Acrylic Frame; Mainboard (Micro Controller) : 12V power supply input, with USB connection, Voltage input : 12V	

No	Nama Barang	Spesifikasi	Keterangan
		b. IOT Enabled 3D Printer, Printer 3D Technology : FDM; Max. Build Dimensions : approx. 20cm x 20cm x 20cm); Build Platform : Aluminum MK3 Hotbed; User Interface : Graphics LCD + Click able Rotary Encoder; Printer3d Interface : WIFI, Built-in Web server, SD card (for Stand alone); Wireless Printing via WiFi & VPN available; Automatic Bed Leveling Available ; Bed Leveling Technology :Unified Bed Leveling; Filament Width : 1,75mm; Number of Nozzle : 1 (Nozzle Sharing); Nozzle tip Size : 0.4 mm; Number of Extruder : 2; Max Nozzle Temp. : 285 Celsius ; Max Hotbed Temp. : 110 Celsius; Supported Materials Type: PLA, ABS, PET, Nylon, Hips, All 3D Printer Filament Types except Flexible; Layer Heights : 0.2mm, 0.1mm, 0.05mm; Min. Axis Movements / Displacement : 0,01mm; Software Configurable Printing Speeds; Recommended Printing Speed: 25mm/s (first layer), 60-120mm/s (other layer), Recommended Travel Speed: 120-150mm/s; Adjustable Print Parameters while Printing (Speed, Temp, Fan); Available Casing : Piano Finish Black; Estimated Idle Power Consumption : 10W; Estimated Maximum Power Consumption : 320W; Measured While Printing Power Consumption : 60-320W; Delivered Ready To Print; SOFTWARE SPECIFICATIONS: Slicer Software : Slic3r/Mediamaker, Host Software (SDCARD or Wifi Printing), TGTech Cloud 3D Print (Web Based Remote Printing via Wifi or Internet VPN), Build In Camera for Wifi & Remote Printing, automatic Time Laps Printing Video Generator Available; INCLUDE: PLA 1.75 mm Filament 1Roll, Netto 1Kg	
		c. Print Size 115*65*155 mm Sudah terakit, siap pakai Upgraded Mainboard untuk hasil print lebih bagus Updated Touch Screen Interface Plug & Play dengan layar 2K Display Easy Leveling Preview Model di Layar sebelum print Layar Touch Screen Display Proses printing real time di layar Print Technology : DLP X and Y Axis Resolution : 47 microns Z Axis Resolution : 1.25 microns Suggested Layer Thickness : 25-100 microns Suggested Print Speed : 10-20 mm per hour Light Source : UV LED (405 nm Wave Length)	