

**INFORMASI LAYANAN KALIBRASI PUSLIT METROLOGI – LIPI
TAHUN 2018**

SUBBID: Metrologi Akustik dan Vibrasi		
No.	Nama Alat	Spesifikasi/RentangUkur
1	Sound Level Meter, Coupler method	- C/A-Weighting at 63 Hz ~ 16kHz - Stability
2	Sound Level Meter, Free field method	- C/A-Weighting at 63 Hz ~ 16kHz - Stability - Level linearity on the reference range - Response of toneburst - Indication of overload - High level stability
3	Noise Dose Meter Parameter: Sound pressure level	- A-Weighting at 63 Hz ~ 16kHz - Stability
4	Incubator Analyzer Parameter: Sound pressure level	- A-Weighting at 63 Hz ~ 16kHz - Stability
5	Pistonphone	124 dB at 250 Hz
6	Sound Calibrator	94 dB & 114 dB at 250 Hz 94 dB & 114 dB at 1kHz
7	Multifrequency Acoustic Calibrator	- 94 dB & 114 dB - 63 Hz ~ 16 kHz - THD in %
8	Microphone 1 inch	63 Hz ~ 8kHz
9	Microphone 0.5 inch	31.5 Hz ~ 25 kHz
10	Audiometer	- Level linearity 10 dB ~ 120 dB - Frequency 125 Hz ~ 8kHz
11	Vibration Meter	5 ~ 150 m/s ²
12	Vibration Test	5 ~ 150 m/s ²
13	Vibration Test System	5 ~ 150 m/s ²
14	Vibration Calibrator	1g or 10 m/s ² at 160 Hz
15	Accelerometer	10 Hz ~ 5 kHz
16	Acoustic Absorption Coefficients with reverberation time method	0% ~ 100% ABS
17	Sound Transmission Loss	0 dB ~ 50 dB
18	Field Sound Transmission Loss, depends on environment condition	0 dB ~ ... dB
19	Sound Power	100Hz ~ 10 kHz
20	Loudspeaker Characterization	20 Hz ~ 16 kHz
21	Sound Level Measurement	25 ~ 130 dB
22	Noise Level Measurement	25 ~ 130 dB

SUBBID : Metrologi Kelistrikan

No.	Nama Alat	Spesifikasi/RentangUkur
1. Standar V-I-R		
1.	Multifunction Calibrator	Vdc : 200 μ V – 1000 V Idc : 200 μ A – 20A Vac : 200 mV (40 Hz – 100 kHz) – 1000 V (40 Hz – 20 kHz) Iac : 2 mA (40 Hz – 10 kHz) – 20 A (40 Hz – 1 kHz) R : 1 Ω – 1G Ω
2.	Digital Multimeter up to 5 1/2 digit	Vdc : 200 μ V – 1000 V Idc : 200 μ A – 20A Vac : 200 mV (40 Hz – 100 kHz) – 1000 V (40 Hz – 20 kHz) Iac : 2 mA (40 Hz – 10 kHz) – 20 A (40 Hz – 1 kHz) R : 1 Ω – 1G Ω
3	Digital Multimeter above 6 1/2 digit	Vdc : 200 μ V – 1000 V Idc : 200 μ A – 20A Vac : 200 mV (40 Hz – 100 kHz) – 1000 V (40 Hz – 20 kHz) Iac : 2 mA (40 Hz – 10 kHz) – 20 A (40 Hz – 1 kHz) R : 1 Ω – 1G Ω
2. Standar Resistansi, Induktansi dan Kapasitansi		
1.	Standard Resistor	1 m Ω – 1P Ω
2.	Standard Capacitor	1 pF - 1000 μ F
3.	Standard Inductor 100 Uh – 10 H	
3. Standar Daya dan Energi		
1	Digital Power Meter	(110 V, 1 A) – (220A, 10 A), Faktor daya : 1, 0.8 lag, 0.8 lead, 0.5 lag, 0.5 lead
2.	Digital Energy Meter	(110 V, 1 A) – (220A, 10 A) Sudut Fasa : 0 $^{\circ}$, \pm 36.87 $^{\circ}$, \pm 60 $^{\circ}$
3.	Earth Tester	20 Ω – 2000 Ω
4.	Clamp Meter	Idc : 10 A – 1000 A Iac : 10 A – 1000 A (55 Hz)
SUBBID : Metrologi Suhu		
No.	NamaAlat	Spesifikasi/RentangUkur
1	TermometerTahananPlatina (PRT, Pt-100)	-40 $^{\circ}$ C~ 100 $^{\circ}$ C
2	Termometer sensor with indicator/Termometer digital	-40 $^{\circ}$ C ~ 100 $^{\circ}$ C
3	Termometer Gelas	-40 $^{\circ}$ C ~ 100 $^{\circ}$ C

4	Thermohygrometer	10 °C ~ 40 °C 40 ~ 90%RH@25 °C, U> 3%RH
5	Termometer Radiasi	50 °C ~ 1500 °C
6	Variable Blackbody	50 °C ~ 500 °C

SUBBID : Metrologi Radiometri Fotometri

No.	NamaAlat	Spesifikasi/RentangUkur
1	Luxmeter / Illuminance meter	$E_v = 0 - 1000 \text{ lux}$
2	Black Light Meter /UV meter / Radiometer	$\lambda = 365 \text{ nm}$, $E_e = 0 - 5000 \mu\text{W}$
3	Color Analyzer /Color Meter /Color Checker	$L = 3 - 275 \text{ cd/m}^2$, $x=0,281$; $y=0,311$
4	Color filter / Color disk	$\lambda = \text{visible}$
5	Color sample / White color standar	Sumber D65 dan C
6	PanjangGelombangSumberCahaya	$\lambda = \text{visible}$
7	Daya Laser	$P_{\text{max}} = 3 \text{ mW}$
8	Photometer / Iph meter	$E_{\text{max}} = 300 \text{ lux}$
9	Lampu intensitas	$I = 60.000 \text{ cd}$
10	Lampu darurat /Phosphoresence	$L = 0 - 3,4 \text{ cd/m}^2$
11	Lampu (optional : distribusi intensitas)	Max daya 200 wa
12	Filter	$\lambda : 250 - 800 \text{ nm}$, $\%T : 0 - 100$; Abs : 0 - 3; SRE
13	Gloss / kilap	$\theta : 20^\circ, 60^\circ, 75^\circ$
14	Spektrodensitometer	VCMY
15	Densitometer	D : 0,41 - 2.05
16	Spektrofotometer	$\lambda\%T$
17	Lightbox	T : 3800 - 5500 K
18	Chroma meter	Y_{xy}
19	Hazemeter	Transmisi : 70-90 % HZ : 1,56 -21,67
20	Luminance meter	$L = 1062 \text{ cd/m}^2$
21	Lovibond Tintometer	Skalawarna
22	Optical power meter	$P_{\text{max}} = 5 \text{ mW}$

SUBBID : Panjang

No.	NamaAlat	Spesifikasi/RentangUkur
1	Calibration tester / Dial Gauge Tester	sampai 25 mm
2	Gauge Block (Grade 0 dan 00/K)	0,5-100 mm
3	Long Gauge Block	125 - 500 mm
4	Electronic level	
5	Optical flat	

6	Optical Parallel	
7	Surface plate	
8	Roughness	
9	Angle Block	
10	Calliper Checker	20 – 600 mm
11	Ring Gauge	0,1 – 250 mm
12	Plug Gauge	sampai 100 mm
13	Line Scale	sampai 1000 mm
14	1 D measuring machine (ULM)	
15	Gauge Block Comparator	
SUBBID : Metrologi Massa		
No.	Nama Alat	Spesifikasi/Rentang Ukur
Lab. Massa		
1	Anaktimbangan E1	1 mg ~1 kg
2	Anaktimbangan E2, F1, F2, M1	1 mg ~ 50 kg
3	Timbangan Elektronik	s.d. 1000 kg
4	Beban DWT	100 g ~ 10 kg
Lab. Gaya dan Torsi		
1	Load Cell	40 N ~5 MN
2	Proving Ring	40 N ~1 MN
3	Universal Testing Machine / UTM	1 kN~1 MN
4	Torque Transducer	1 Nm ~ 2000 N m
5	Torque Wrench Tester	20 N m ~ 1000 N m
Lab. Tekanan		
1	DWT - Oli	s.d.500MPa, akurasi< 0.02% (Budenberg,pressurement, dll.)
2	DWT - Gas	s.d. 7 MPa
3	Pressure gauge – Oli	s.d. 350 MPa
4	Pressure gauge – Gas (gauge absolute, differential)	s.d. 7 MPa
Lab. Aliran		
1	Flowmeter media air	(4~167) L/min
2	Gas Flowmeter	(250~ 1200) L/min
Lab. Densitas		

1	Hidrometer (specific gravity, alcohol meter, API, density, soil hydrometer, dll.)	(600~2000)kg/m ³
2	Solid density (anaktimbangan)	20 g ~ 1 kg
Lab. Volume		
1	Gelasukur	(5 ~ 2000) ml
2	Pipetukur	(0,05 ~ 25) ml
3	Pipet volume	(1 ~ 200) ml
4	Buret	(1 ~ 100) ml
5	Labuukur	(5 ~2000) ml

SUBBID : Metrologi Waktu and Frekuensi

No.	NamaAlat	Spesifikasi/RentangUkur
1	Frequency Counter	10 Hz - 3.2 GHz
2	Frequency Source	1 MHz, 5 MHz, 10 MHz
3	Synthesized Signal Generator	Frekuensi : 150 KHz - 1300 MHz Power :1 mW
4	GPS-DO	5 MHz, 10 MHz
5	Stopwatch	60 detik
6	Stroboscope	60 - 20.000 rpm
7	Tachometer	60 - 99.000 rpm
8	Spectrum Analyzer	150 KHz - 1300 MHz
9	Multiproduc Calibrator	Frekuensi:10 Hz - 2 MHz Periode : 10 ns – 1 s
10	Laser He-Ne	633 nm
11	Power Sensor	1 mW @ 150kHz-1.3 GHz