Tristimulus Colorimeter
LMT C 3300

- Highest accuracy tristimulus colorimeter for high speed, computer controlled color measurements of temporally changing light colors. Configurable for scanning type measurements in conjunction with LMT goniometers
- Precision system CHS 60 colorimeter head with integrated amplifiers and calibration circuit, suitable for use with cable lengths of up to 50m
- Spectral adjustment to the CIE color matching functions by LMT Mosaic Filtering® of highest accuracy
- Simultaneous acquisition and integral determination of X, Y, Z tristimulus values eliminating measurement errors caused by fluctuations in test object characterisitcs over time
- Resolution for illuminance as low as 0.001lx
- Three 4¾-digit display of tristimulus values X, Y, Z
- Computer coupling via IEEE-488 interface, LMT COLORSYS software for measurement of fast changing light colors, display of time response of luminous intensity and chromaticity coordinates

LMT LICHTMESSTECHNIK GMBH BERLIN · HELMHOLTZSTRASSE 2-9 · 10587 BERLIN GERMANY
PHONE: +49-30-393 40 28 · FAX: +49-30-391 80 01 · E-MAIL: LMT@LMT.DE · WWW.LMT.DE

Tristimulus Colorimeter LMT C 3300

Technical Data in imitation of DIN 5032 part 8

Marking	LMT C 3300 Tristimulus Colorimeter				
Field of application	Laboratory and high precision measurements on primary lightsources at high speed, evaluation of tristimulus values X, Y, Z				
Display range	**Number of Ranges**	**Illuminance**		**Luminous Intensity at 10 m**	
		max	**min**	**max**	**min**
	6	600 klx	0.001 lx	6 x 10^7 cd	0.1 cd
	ranges graduated in steps of ten, all ranges overload protected				
Colorimeter Head	· CHS 60 with ultra-stable Si-photoelements and pre-amplifiers · Connection to display and evaluation unit by plug-in cable · Thermostatic stabilization: built-in · Light sensitive surface: 60 mm diameter (CHS 60), 30 mm diameter on request (CHS 30) · Special equipment: individual test-certificate				
Measuring Console	· Transducer: precision operational amplifier in three channels · Integration time: 10 ms, t_a=20 ms · Conversion rate of A/D-converter: > 120 readings/s · Display: LED display, 3 x 0 – 32760 digit with decimal point and exponent value · Range selection: manually or remote controlled · Digital data output: IEEE-488 bus interface · Electrical operated: mains · Attenuator / multiplier: –				
Maximum errors and qualities in imitation of DIN 5032 part 6 and 7	· $\bar{x}(\lambda)$-adaption: f_{1x} < 1.5 % · $\bar{y}(\lambda)$-adaption: f_{1y} < 1.0 % · $\bar{z}(\lambda)$-adaption: f_{1z} < 2.0 % · UV-response: u < 0.1 % · IR-response: r < 0.1 % · Error by non-linearity: f_3 < 0.1 % ± 1 digit · Error by display-unit: f_4 < 0.15 % · Temperature coefficient: α_0 < 0.01 %/K · Fatigue: f_5 < 0.15 % · Error due to modulated light: f_7 < 0.1 % · Range change: f_{11} < 0.1 % (referring to Y-channel) · Total error: f_{ges} < 3.0 % (referring to Y-channel) · Lower frequency limit: f_u < 200 Hz · Upper frequency limit: f_o > 100 kHz				
Calibration	· Against Standard Illuminant A and 25°C, re-calibration period < 2 years / PTB traceable · Relative expanded measurement uncertainty includes the uncertainty of the standard employed of ±0,7 % and ±7 K according to PTB certificate · Standard calibration in lx (Y-channel)				
Electrical supply	· Rated supply voltage: 230 V ± 10 %, 115 V ± 10 % · Power consumption: < 40 VA · Rated frequency: 50 Hz, range 45 to 60 Hz (mains supply)				
Environmental specifications	· Operating temperature range: +5 to +40°C · Storage temperature range: −15 to +60°C · Relative humidity: 10 to 85 %, non condensing				
Dimensions	· Measuring console: 365 mm x 450 mm x 135 mm (L x W x H) · Colorimeter head: 282 mm x 120 mm x 130 mm (L x W x H) · Length of cable: 5 m standard, different lengths as option				
Weight	· Measuring console: approximately 8 kg · Colorimeter head: approximately 2.6 kg				