

LM 20

Luminance Meter



Product highlights at a glance

- ▲ Luminance measurement of automotive license plates
- ▲ Conforming to standards ECE R4 and SAE J587
- ▲ Classification A (high accuracy) pursuant to DIN 5032-7
- ▲ Special measurement optics for the suppression of stray- & extraneous light
- ▲ LED alignment device facilitates targeting on measuring points
- ▲ Wide measuring range of up to 1,000,000 cd/m² and a resolution of 0.02 cd/m²

The LM 20 was developed for the standard-compliant measurement of luminance of vehicle registration lighting (license plates) in conjunction with an AMS goniophotometer system from the Optronik line from Instrument Systems. The luminance meter consists of a tube with special measurement optics for stray light reduction, a digital DSP 10 photocurrent amplifier and an LED alignment device for precise focusing on the reference surface on the test object. It meets the requirement of classification A (high accuracy) pursuant to DIN 5032-7 for luminance meters.

Unlike other luminance meters, the LM 20 is fully integrated for automated applications with goniometer. The AMS Controller serves as display and control unit. Here the measured value is indicated as decimal value without exponent. The relevant regulations and test routines according to ECE, GB and SAE regulations are implemented in the LightCon software thus allowing a convenient pass / fail analysis of automotive license plate illumination. Optionally the LM 20 can be integrated with the TPU 10 Photometer Tube Positioning unit serving for an automatic alignment of different sensors positioned at the same optical height of either 1400 or 1500 mm.

\ \ UNIVERSAL SOLUTION FOR CONFORMITY ANALYSIS CONFORMING TO STANDARDS ECE R4 AND SAE J587



LM 20 in combination with	AMS Goniophotometer	License plate holder
DUT	Automotive lighting	License plate dummies designed for compliance tests
System setup	LM 20 in conjunction with a CIE Type A goniometer	License plate holder with fixture for lamps
Application	Simultaneous determination of luminous flux and color coordinates	Compliance tests according to ECE, SAE, GB, Brazilian or Argentinian standards with test report

\\ TECHNICAL SPECIFICATIONS

LM 20 Luminance Meter	
Class notation	A in acc. with DIN 5032-7 (2017)
Measuring scope	0.02 (resolution in the most sensitive measuring range) bis 1.000.000 cd/m ²
Measuring ranges	8
V (λ) correction	$f_1' \leq 2\%$ (typ $\approx 1.5 - 2.0\%$) (full filtering)
Linearity errors	$f_3 \leq 1\%$
Total errors	$f_{ges} \leq 7.5\%$
Influence of ambient luminance	$f_{2(u)} \leq 1.5$
Viewing angle	0.45°
Measuring field	Ø 25 mm
Measuring distance	3.162 m

\\ ORDERING INFORMATION

Order number	Description
PM-DSP10-220	LM20 luminance meter consisting of DSP 10 preamplifier, PMH 200 photometer head for luminance measurement, connecting cable, LED aiming device, measuring optics and tube; incl. factory calibration, test certificate, and report on individual spectral match of the photometer head; PM-ST-331 base plate for DSP 10 included
PM-DSP10-620	LM20 luminance meter consisting of DSP 10 preamplifier, PMH 200 photometer head for luminance measurement, connecting cable, LED aiming device, measuring optics and tube; incl. calibration, test certificate, and report on individual spectral match of the photometer head; PM-ST-331 base plate for DSP 10 and tripod included
AMS-310	Device for fastening license plate dummies and lamps for license plate illumination (consisting of 2 mounting components) used in conjunction with LM 20 photometer head for luminance measurement
AMS-311	License plate dummies for measurements according to ECE-R4 (3 items, type A, B, C)
AMS-312	License plate dummies for measurements according to SAE-J587 (2 items, type 01, 02 (motorcycle))
AMS-313	License plate dummies for measurements according to Chinese standards (3 items)
AMS-315	Set of license plate stickers for license plate dummies, 100 pcs.
AMS-316	License plate plaque 240 x 130 mm (ECE R50, category 1)
AMS-317	License plate plaque 280 x 200 mm (ECE R50, category 2)