



ScreenMaster



For determination of light quality, e.g. in working areas where image screens are used

Hagner ScreenMaster

The Hagner ScreenMaster is a small, handy and very easy-to-use instrument for measurement of luminance as well as illuminance over a range of 0.1-200,000 cd/m² and lux, respectively. With both automatic zeroing and on/off switch, the only controls needed are a four-position range selection switch, a hold button for retaining the displayed value and a switch for selection between luminance and illuminance.

The ScreenMaster is provided with two detectors, which both are carefully filtered to give a spectral response close to that of the human eye, as defined in CIE standards.

The detector on the front side of the instrument is well cosine corrected and used for measurement of illuminance, for instance on computer screens and in working areas.

The detector on the underneath side of the instrument is built into a tube and is used for measurement of luminance. The opening of the tube (= 1 cm²) gives a measuring angle of 36°. (The measured area = the base of a cone with a 36° top angle.) This implies that the instrument is well suited for e.g. determination of luminances and contrasts on computer screens, background luminances and luminances from negativ viewing tables. (To avoid reflectance of ambient light the detectortube can be pressed against the light emitting surface when measuring on screens and tables.) By means of this detector it is furthermore possible to calculate transmission factors and film density.

The Hagner ScreenMaster is of course also most suitable for general evaluations of lighting quality.

Operation

To open the lid, press the forward part lightly downward with your thumb and at the same time pull the latch upwards with the first two fingers of the same hand. The instrument comes on when the cover is opened and turns off when it is closed. Set the luminance/illuminance switch in desired position. Move the range switch to the range which will give the greatest accuracy and read the display. When the HOLD button is pressed the measured value will show on the display until the button is released.

Calibration

The instrument is carefully calibrated when delivered. As the light sensitive silicon diodes are extremely stable over long periods of time recalibration every two-three years should, under normal use of the instrument, be sufficient. If however there is any reason to believe that the instrument is out of calibration, it can be returned to your stockist or the manufacturer for earlier control checks.

Power source

The power source is a standard 9 volt battery. To avoid battery leakage only alkaline batteries should be used. When LOBAT appears on the display, it is time to replace the battery. However the instrument can be used for approximately 20 hours longer before replacing the battery is essential.

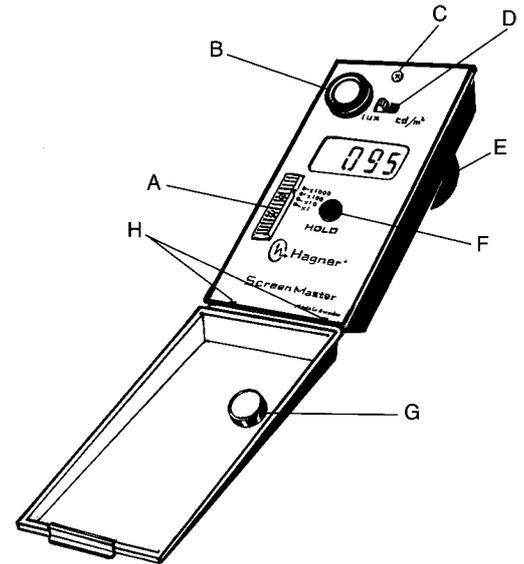
To change the battery remove the screw at the front edge of the cover plate, which permits the plate to be removed. When replacing it the lower edge of the plate must fit under the two bosses at the lower edge of the case before it can be closed again. Note! When lowering the plate make sure that the pin of the four-position switch fits into the sliding control on the plate.

Maintenance

The white plastic disc over the illuminance detector may be cleaned when necessary with a light damp cloth. The luminance detector is protected by a glass disc inside the tube. The disc can be cleaned with, for instance, a light damp "tops".

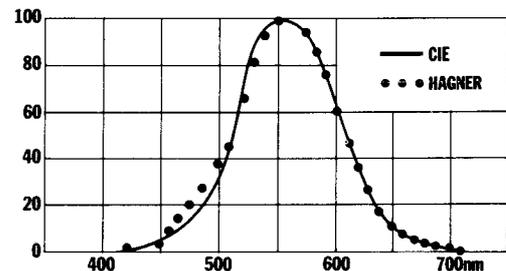
Instrument data

Detector	Silicon photodiodes, V _λ -filtered and (illuminance detector) cosine corrected.
Measuring range	0.1-200,000 cd/m ² and lux respectively.
Accuracy	Better than +/- 3% (+/- 1 in last digit).
Power supply	9 volt battery type PP3 alkaline (lifetime approx. 350 hours)
Dimension	135 x 75 x 60 mm
Weight	215g

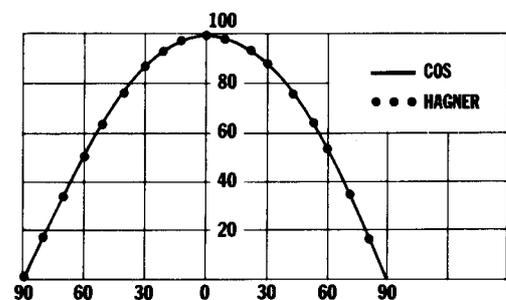


The controls and other parts of the ScreenMaster

- A Range switch
- B Detector for illuminance
- C Screw for coverplate
- D Luminance/illuminance switch
- E Detector for luminance
- F Holdbutton
- G Magnet that switches the instrument on and off
- H Locking bosses for the coverplate



The spectral sensitivity of the Hagner ScreenMaster closely relates to the visibility curve of the CIE standard observer.



The cosine correction of the illuminance detector compensates for measuring errors owing to oblique incident light.