

SPHERICAL TRANSPARENCY ILLUMINATOR LE6-100 S

Serial no.



ill. 1

The spherical transparency illuminator LE6-100 is designed for illuminating test transparencies of all kinds that are used for testing and evaluating visual recording equipment, mainly electronic cameras. The transparency format is 360x280x4mm. When using other formats an adapter is necessary.

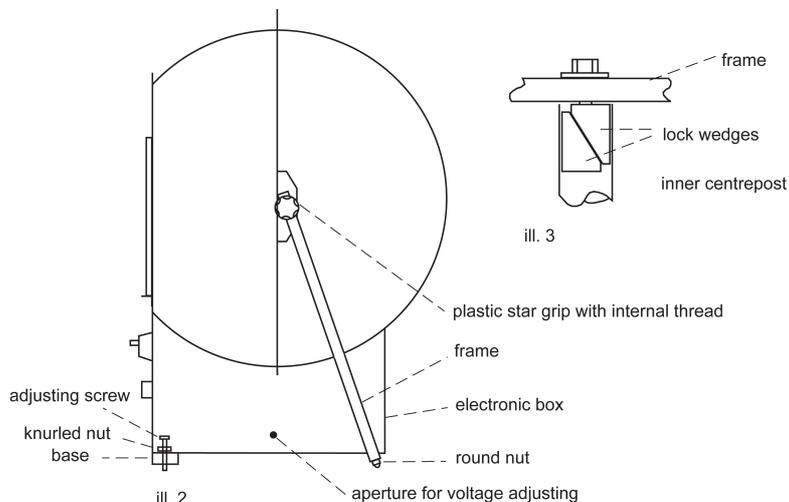
General information

The illuminator is working on the principle of an integrating sphere. It says that when using a sphere as hollow body with a homogeneous interior coating which completely diffuses the reflected light, the indirect lighting density is constant throughout the complete interior area. This also applies to a small measuring window in the sphere. When enlarging this window the homogeneity of the luminous density decreases. Although the transparency window is fairly large in relation to the overall size of the sphere the spherical illuminator LE6-100 shows an extremely homogeneous light density at its measuring window. The unevenness is 3-4% max., resp. 5% with extremely low light.

Therefore the unit may be used not only for conventional testing and evaluation but is particularly suited for precise measurements in research and development. It also meets the requirements that are stated in IEC 61146, „Videocameras (PAL-SECAM-NTSC)-Methods of measurement“ Parts 1-3 for transparency illuminators.



The device can be used as a table model (see ill.2) or be set on the tripod supplied (see ill. 1).



1. Tabel model

To set up the table model the frame must be fixed to the respective bolts at the sides of the sphere by means of two plastic star grips with internal threads. Then swing frame backwards (until it touches the electronic box). Then the base must be mounted with two screws at the front of the electronic box and the adjusting screws in the base have to be adjusted and fixed by knurled nuts. Then the illuminator sits on three points (the two screws and the round nut fixed on the frame). The adjusting screws enable an exact leveling of the device.

2. Stand model

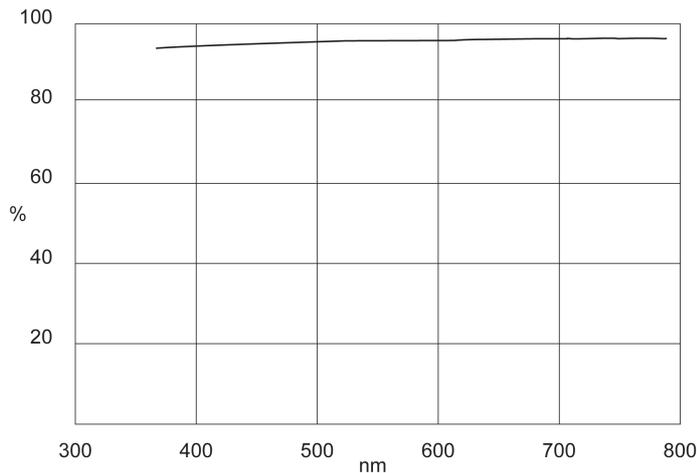
When the illuminator is used together with the tripod remove the frame first. Then take the round nut off the frame. Now lock wedges can be screwed loosely into the center position. The outer center position of the tripod is very short when folded and ends at the bottom of the guiding ring. Open legs of tripod and lock outer center position. Put fixation of inner center position on outer center position and lock with the screws. Then adjust and lock inner center position into the right height and insert the frame with the lock wedges. Tighten screw at the frame (see ill. 3). Please, note that the bevelled edges of the lock wedges have to be aligned parallelly with the frame (for a clearer demonstration this was not respected in ill. 3). Then fit in illuminator.



Technical information on the light

The light source is a halogen lamp of 100W which is inserted in the box underneath the sphere. The lamp aperture inside the sphere is screened towards the measuring window by a multi-folded metal plate. This screen plate prevents a direct radiation to the transparency window and reflects the light to the back of the sphere. Shadows inside the sphere that are caused by the screen plate are outside the window area and do not impair the uniformity of the lighted area.

The interior of the sphere is coated with a specific sphere coating showing a high degree of color neutrality in the relevant spectrum (> 95%); see ill. 3.



ill. 3 spectral remission of sphere colour

When delivered, the device is adjusted to a color temperature of 3250K in order to compensate the reduction of the color temperature cause by the film material of the test transparencies.



Technical data

Light source	Halogen (12 V/ 100 W) Osram HLX 64625 or similar
Durability of light source	90h *
Max. light density	(continuously adjustable 1:100)
Max. unevenness	4,00%
Color temperature	3200 K +/- 50 K
Mains voltage	100-230 V, 50-60 Hz
Stabilization factor	> 1 %
Power input	Approx. 120 W
Dimensions (w x h x d)	630 x 710 x 500 mm
Weight	11 kg

*when using 11,82V.
when using 12V, the Lifespan is ~50h (see datasheet LE6 lamp)

Important information

In order to impair the light intensity of the sphere as little as possible we intentionally did not insert a diffusing pane into the transparency window. To protect the interior of the sphere from dust we recommend to have a transparency always inserted in the inner slot. In addition to the slot for the test transparency there is a second slot that may take a conversion resp. neutral density filter. When using daylight filters it must be considered that the remaining light density may no longer meet the requirements of accurate measurements. To safeguard the halogen lamp we advise you to switch off the light after the measurement.

Maintenance

From time to time the halogen lamp has to be replaced

1. Interrupt mains supply.
2. Pull out carefully the sliding box with the electronics at its handle (it is hold by a spring lock).
3. Take out used halogen lamp and insert vertically into the ceramic socket both pins of the new lamp until stop. **Caution: Do not touch the halogen lamp with uncovered hands.**
4. Now proceed in reverse order: insert the sliding box (and fix safety screws).

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