



ILLUMINATOR LG2 FOR TEST TRANSPARENCIES

Serial no.



The illuminator LG2 was designed for illuminating test transparencies of any kind that are used for testing visual recording equipment, mainly electronic cameras. The transparency format is 360x280x4mm. Other transparency formats are possible by using an adapter.

Light sources are 4 vertically arranged OSRAM “Dulux” fluorescent tubes of 24 Watt each. They are started by two electronic loading devices. With conventional fluorescent tubes of 50Hz various CCD-Cameras show pictures interferences. Such interferences are avoided by the 32kHz voltage that is generated by the loading devices.

Since the illuminator does not exceed a temperature of 35°C (even if use for many hours), no ventilation system is necessary. Therefore there is no disturbing noise as many occur with illuminators working with halogen light.

Technical data of the light

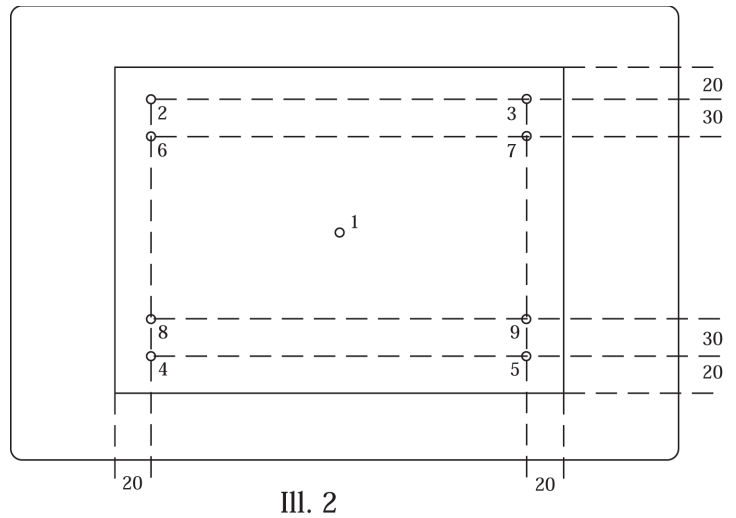
1. Density of light

The density of light was determined at nine points on the illuminated surface. The points are indicated in illustration 2. Operation voltage was $230 \pm 30V$.

	Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9
Density of light cd/m ²									



Point 1 to 5 mark the lighted area relevant for 4:3 test transparencies D280, point 1 and 6 to 9 mark the lighted area relevant for 16:9 test transparencies D280. All measurement are in mm. (The homogeneity is better than 80% for 4:3 and 90% for 16:9.)

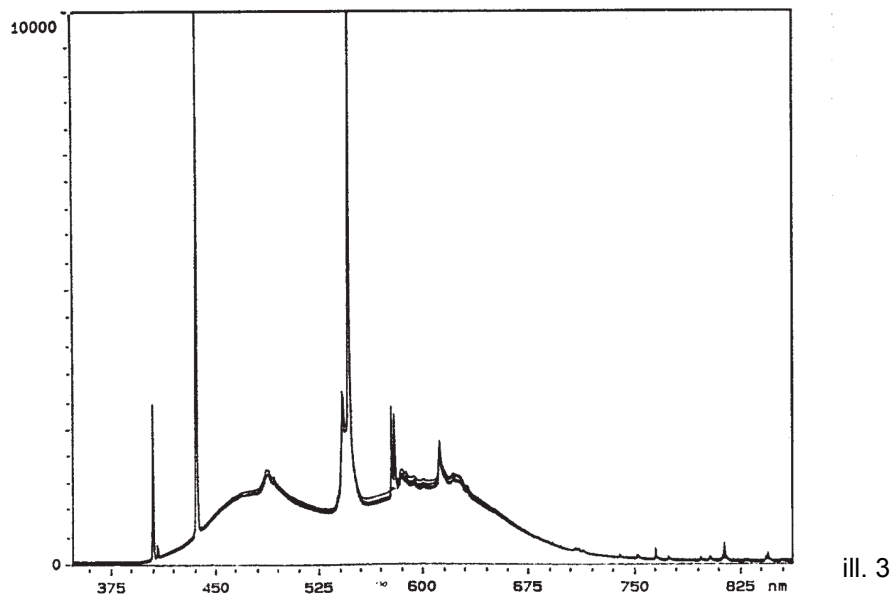


Measuring results

	4:3	16:9
Mean value	cd/m ²	cd/m ²
Max. deviation	cd/m ² = %	cd/m ² = %
Eveness	%	%

2. Spectral distribution of the emitted light

The spectral function (illustration 3) shows a continuous progression with a typical mercury line superimposition. As their peaks are very narrow they are of hardly any significance for the overall result.





3. Color temperature

The spectral measurements lead to the following coordinate of the CIE-xy-scheme

$$x = 0,349 \pm 0,002$$

$$y = 0,369 \pm 0,002$$

The color temperature closest to that is 4700K. The point on the color triangle lies only slightly above the function of the black radiator.

Color rendition

The color rendition index of the illuminator lies on the average for the 15 test color (according to DIN 6169) at Ra 95 and thus corresponds to the color rendition level 1A (CIE) resp. 1 (DIN), i. e. it is suited for color comparison.

It was mentioned above that the peaks which are characteristic for fluorescent tubes are very narrow. So they usually have no significant influence on the color rendition of electronic cameras. Illustration 4a and 4b show vectorscope image of the color bar test chart TE106 taken with the same camera. The left image was illuminated with a halogen illuminator, the right one with LG2. In both cases the white balance was established on the white field of the test transparency.

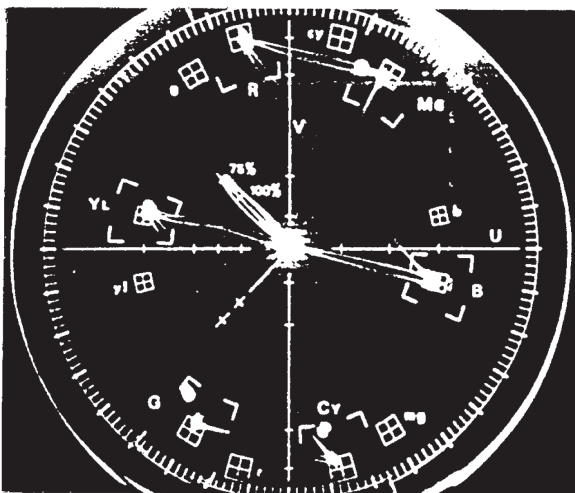


Illustration 4a



Illustration 4b

Conversion filters

The color temperature of the illuminator can be changed by using conversion filter. The filters have the same format at the test transparencies and can be inserted into second slot. Besides the filter which reduced the temperature to 3100-3200K as is commonly used for artificial light measurements, filters for the following color temperature are available:

2700	3300	3900
2800	3400	
3900	3500	
3000	3600	
3100	3700	
3200	3800	

(All specifications in K +/- 100K)



Neutral density filters (ND-filters)

The illuminator LG2 can not be regulated. An external dimmer may regulate its brightness to a certain extent. This leads, however, to a different color temperature. To reduce light density step by step, ND-filters can be used. They are available in five different versions and reduce the brightness by 50% respectively. Filters with other reducing can be supplied on demand.

Dimensions

width x height x depth = 590 x 450 x 110 mm

Due to its small dimensions, particularly its small depth, the device is best suited for use in lab and studio. A thread at its bow allows the case to be fixed to any usual tripod. To ensure a safe upright standing we recommend to use the bow as shown in illustration 1.

Special instruction

During the first 10 minutes of use the light density differs between the upper and lower part of the surface. We therefore advise you to allow a warm-up phase of about 10 minutes in order to achieve stable measurements.

Slight deviations in light density may occur during the first 50 hours of operation due to the heating-up of the fluorescent tubes.

Opening the illuminator: first disconnect the plug from the socket. To open turn the illuminator carefully down. One hand holds it at the bow screw, the other hand takes the slots for the transparencies and carefully pulls up the front panel (the front panel is held in position only by springs). Then operate accordingly on the other side and take off the front panel.

For replacing the fluorescent tubes the metal insert may be unscrewed but it is not necessary: The tube placed on the left side has to be taken out first and the one on the right side at last. Replace the tubes in opposite sequence.

Caution!

During transportation the fluorescent tubes may loosen slightly in their holders. In case the tubes do not work or only work on one side, open front panel and set back tubes into their holders.

Accessories

- Transportation case (optional)
- Set of fluorescent tubes
- Adapter for deviating transparency formats (please indicate outside format of transparency)