

# FliQ-Flat area light sources

## Fluorescent tube illumination

### General Solution

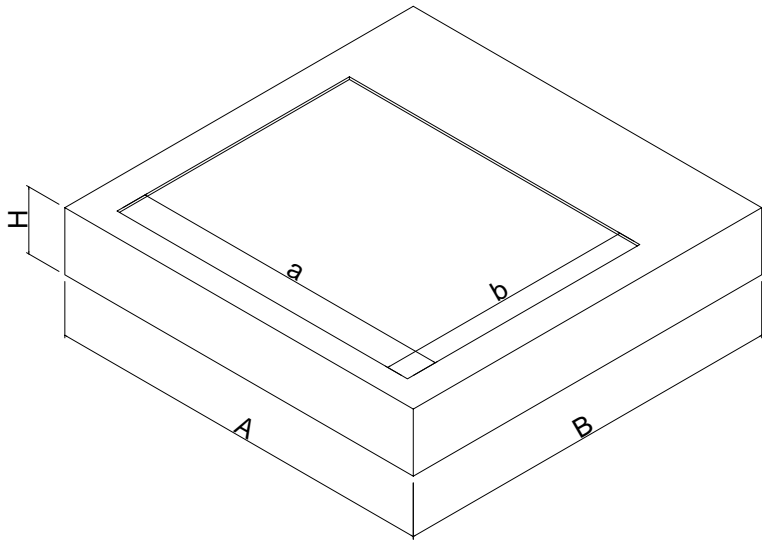
FliQ-Flat area light sources are made for the use with standard black-white or colour 2D-CCD-cameras. They are equipped with fluorescent tubes, driven by high-frequency ballasts.

The body is made from sheet metal. The ballast are inside beneath the tubes. In special cases you can order the ballasts in a separate box.

The size is AxBxH mm. H=85 mm with internal, H=60 mm with external ballasts

The measures "B" and "b" can be adapted to your special needs.

The total light flux can be increased by using more tubes with narrower spacing.



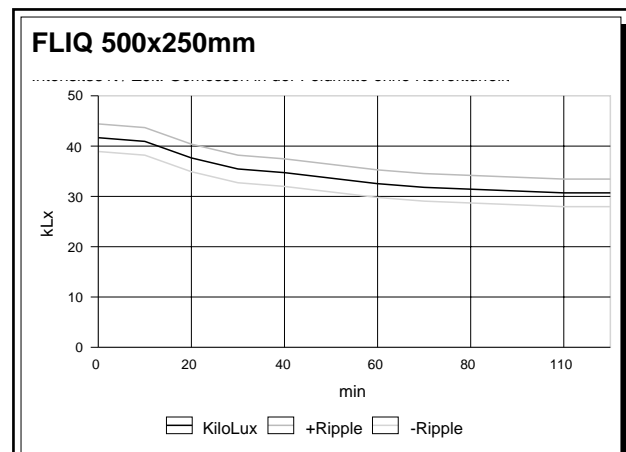
### Light intensity vs. time

The light intensity variation versus time is shown in the table and figure below. The light source was started cold and then we measured the light intensity in the center of the field over 120 minutes.

Bezeichnung	A	a	B	b
axb-#tubes	mm	mm	mm	mm
210x50-1	270	210	90	50
210x100-2	270	210	140	100
210x150-3	270	210	190	150
210x200-4	270	210	240	200
210x250-5	270	210	290	250
210x300-6	270	210	340	300
310x50-1	370	310	90	50
310x100-2	370	310	140	100
310x150-3	370	310	190	150
310x200-4	370	310	240	200
310x250-5	370	310	290	250
310x300-6	370	310	340	300
410x50-1	470	410	90	50
410x100-2	470	410	140	100
410x150-3	470	410	190	150
410x200-4	470	410	240	200
410x250-5	470	410	290	250
410x300-6	470	410	340	300
513x50-1	573	513	90	50
513x100-2	573	513	140	100
513x150-3	573	513	190	150
513x200-4	573	513	240	200
513x250-5	573	513	290	250
513x300-6	573	513	340	300

Table 1: Selection of standard FliQs

	KiloLux	100Hz Ripple	64kHz- Ripple
0	41.669	2.2%	4.4%
10	40.938	2.2%	4.5%
20	37.648	2.4%	4.9%
30	35.455	2.6%	5.2%
40	34.724	2.6%	5.3%
50	33.628	2.7%	5.4%
60	32.531	2.8%	5.6%
70	31.800	2.9%	5.7%
80	31.434	2.9%	5.8%
90	31.069	2.9%	5.9%
110	30.703	3.0%	6.0%
120	30.703	3.0%	6.0%



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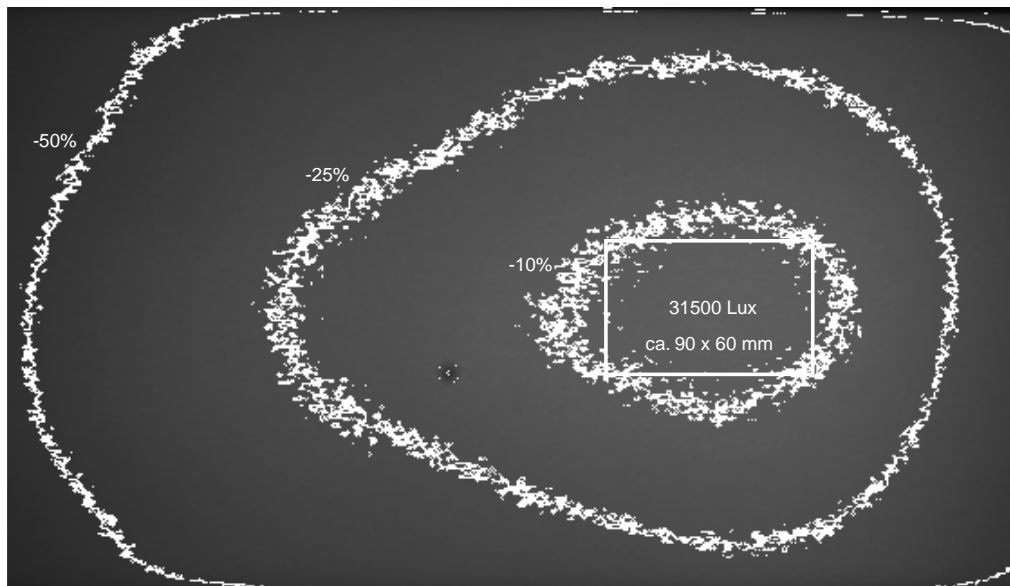
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### Intensity distribution across illuminated field

The fluorescent light tubes are covered by a diffusor screen, in general a standard ground glass.

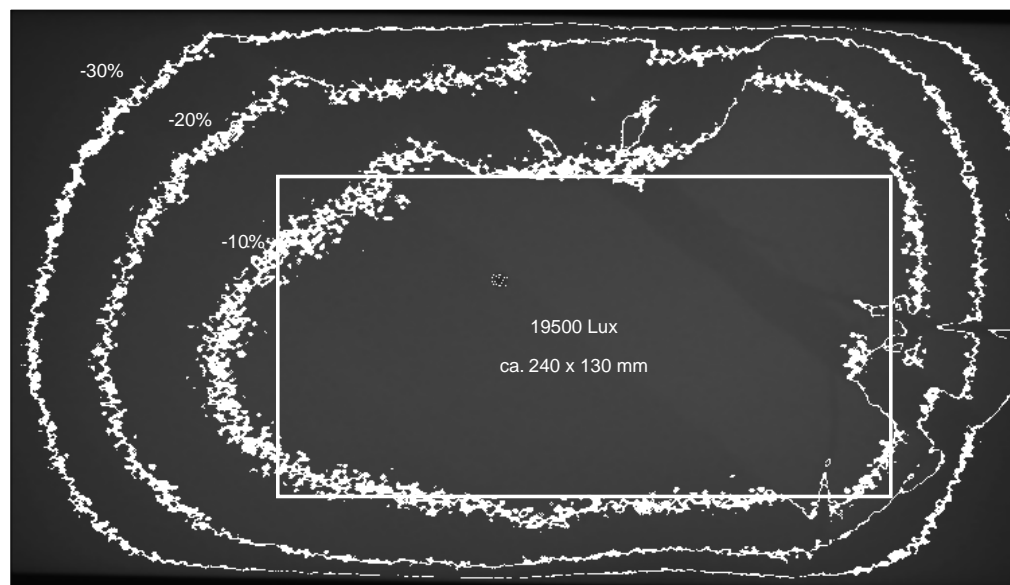
For special applications this can be combined with a intensity correction film or replaced by HOEs (=holographic optical elements [very expensive]). The figures below show the light intensity distribution without (upper figure) and with (lower figure) correction film.

Bildausschnitt: ca. 435x250 mm



Rohintensit tsverteilung

Bildausschnitt: ca.435x250 mm



Verteilung mit Korrekturfolie

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