

Cold light from Schott

In-depth expertise in stereomicroscopy and macroscopy

Cold light sources are devices for the intense illumination of objects with infrared-free "cold light". All heat radiation has been filtered out. The remaining visible light is then transmitted to the target using Schott's high transmission glass fiber light guides.

The main field of application is microscopy, but cold light sources from

Schott are also preferred for applications in the fields of medical technology, photography as well as in the laboratory.

Schott has over 30 years of experience in the production and processing of glass fibers. From optical glass manufacturing, individual fiber drawing, to final light guide assembly, everything remains in Schott's capable hands.

The benefit to you?

The most stringent demands during production at Schott guarantee the best in quality and production standards.

The latest devices, KL 1500 LCD and KL 2500 LCD, are setting new benchmarks in the field of cold light sources with their performance spectrum and unique design.

The new prominent display identifies color temperature along with various operating modes.

Now there are two options available for controlling light intensity:

- A voltage stabilized electronic dimmer which simultaneously adjusts light intensity and color temperature.

- A mechanical dimmer which controls the light intensity at a constant color temperature. The stepless control of the mechanical aperture optimizes uniform object illumination in all positions.

The new premium model KL 2500 LCD, offers a decisive advantage over its sister model for certain applications:

Fitted with a 250 Watt cold light reflector lamp, the KL 2500 LCD transmits more than twice the amount of light of the KL 1500 LCD.

This means that demanding applications, such as fluorescence microscopy or short exposure macro-photography, are easy tasks for the new KL generation from Schott.

Both models, the KL 1500 LCD and the KL 2500 LCD, are compact, easy to operate and require no maintenance. With their improved brightness, homogeneity and variability of light they are unmatched in the well-established fields of Schott's cold light source applications. This opens even more potential applications as found in medical technology, photography, laboratory and industrial environments.

Both light sources have been tested and approved to the relevant standards for electrical laboratory equipment (DIN EN 61010-1 and UL 3101-1) and electrical medical equipment (DIN EN 60601-1 and UL 2601-1). The 230 V version carries the **CE** conformity label.

The best light for the best results!



Functional solutions

New features and product advantages at a glance.



Liquid crystal display indicating color temperature and the various operating modes.

Now you can check and set the quality of the white light that you are using.



Stabilized electronic and mechanical control of the light amount.

Both function completely evenly and step-less.



Connector for electronic accessories such as remote control, tilt switch and RS 232 interface (KL 2500 LCD only).



Molded handle with logo strip:
The functional molded handle is interchangeable. The logo strip can be interchanged separately from the handle strap.

Flexible systems

Individual application and efficient use



*Stacking capability:
The light sources can be stacked
without impairing any function or
ease of operation.*



*Collet chuck for light
guides with fiber bundle
diameters up to 15 mm max.
(KL 1500 LCD up to 9 mm).*



*Functional lamp compartment:
The time tested technology ensures easy
lamp replacement without
using any tools.*



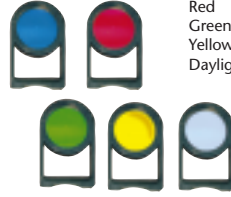
*Filter wheel with five filter positions:
You can change the wavelength region of your light
with just a turn of the knob (KL 1500 LCD: filter drawer
for one insert filter).*

KL 1500 LCD

Extensive range of accessories



230 Volt (150 200)
120 Volt (150 201)



Insert Filter with holder
Blue (158 302)
Red (158 303)
Green (158 304)
Yellow (158 305)
Daylight filter (158 306)



Holder with M6 thread (157 430)
for slit ring light
 $\varnothing_i = 58 \text{ mm}$, $\varnothing_o = 66 \text{ mm}$
for 4-point ring light
 $\varnothing_i = 30 \text{ mm}$, $\varnothing_o = 66 \text{ mm}$
for flexible light guide
 $\varnothing = 12 \text{ mm}$, $\varnothing = 15 \text{ mm}$



Slit ring light for incident dark field flexible length approx. 1000 mm
(157 405)



4-point ring light, flexible length approx. 1000 mm
 $\varnothing_i = 30 \text{ mm}$ (157 401)
 $\varnothing_i = 66 \text{ mm}$ (157 402)



Slit ring light, flexible length approx. 1000 mm
 $\varnothing_i = 58 \text{ mm}$ (157 410)
 $\varnothing_i = 66 \text{ mm}$ (157 420)
Maximum annular light
 $\varnothing_i = 150 \text{ mm}$ (157 440)



Small slit ring light flexible length approx. 1000 mm M-PVC, with changeable adapter for connecting on KL 200/KL 750 or KL 1500 LCD/KL 2500 LCD
 $\varnothing_i = 18,5 \text{ mm}$ (157 018)
 $\varnothing_i = 22,0/25,0 \text{ mm}$ (157 025)
 $\varnothing_i = 30,0 \text{ mm}$ (157 030)
 $\varnothing_i = 40,0 \text{ mm}$ (157 040)



Spot to line assembly with adjustable front lens, flexible length approx. 1000 mm, M-PVC
Slit 50 mm x 1,2 mm (160 100)
Slit 100 mm x 0,6 mm (160 110)
Slit 200 mm x 0,3 mm (160 120)
Slit 300 mm x 0,3 mm (160 130)



Flexible light guide 3-branch, M-PVC
 $\varnothing = 4,5 \text{ mm}$ / 1000 mm
(155 206)



Objective adapter for IL/DF (Order No. 157 405) on $\varnothing_i = 58 \text{ mm}$ and GZ 6

for ZEISS Achromat S	1,0x (157 550)
for ZEISS Achromat S	1,6x (157 549)
for ZEISS Achromat S	2,5x (157 551)
for ZEISS Duo DS	1,0x (157 550)
for ZEISS Plan S	1,0x (157 550)
for ZEISS Planapo	1,0x (157 555)
for ZEISS Planapo	1,6x (157 564)
for LEICA Achromat M3	1,0x (157 552)
for LEICA Achromat M3	1,5x (157 552)
for LEICA Achromat M3	2,0x (157 553)
for LEICA Achromat GZ 6	2,0x (157 554)

Objective adapter for IL/DF (Order No. 157 405) on $\varnothing_i = 66 \text{ mm}$

for LEICA Planachromat M3Z	1,0x (157 560)
for LEICA Planapo M3C, MZ8	1,0x (157 561)
for LEICA Plan M3Z, MZ8	1,0x (157 562)
for LEICA Planapo M10, MZ12, MZAPO	1,0x (157 562)
for LEICA Planapo M10, MZ12, MZAPO	1,6x
for LEICA Planapo M3C, MZ8	1,6x
for LEICA Planachromat M3Z, MZ8	1,6x
for LEICA GZ 6	—

No adapter required (157 563)



Holder for Maxi ring light
 $\varnothing_i = 58 \text{ mm}$
(157 445)



Objective adapter for 4-point ring light and slit ring light $\varnothing_i = 66 \text{ mm}$

for Leica M1 - M7 (when using a protective lens glass) (157 421)
for LEICA Macroscope (157 422)
for LEICA M1 - M7 (157 450)
for LEICA GZ6, MZ8, } no adapter required
for M10, MZ12, MZ APO }

Objective adapter for slit ring light $\varnothing_i = 58 \text{ mm}$

for LEICA M1 - M7 (no adapter required)
for ZEISS Stemi 1000, 2000, SV 6, SV 11 } Supplied by ZEISS



Polarisation filter
for slit ring light $\varnothing_i = 66 \text{ mm}$ (158 430)
for slit ring light $\varnothing_i = 58 \text{ mm}$ (158 440)

s for all fields of application*

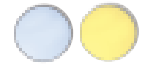
KL 2500 LCD



Insert filter Ø 28 mm for filter wheel
 Blue (258 302)
 Red (258 303)
 Green (258 304)
 Yellow (258 305)
 Daylight filter (258 306)



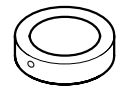
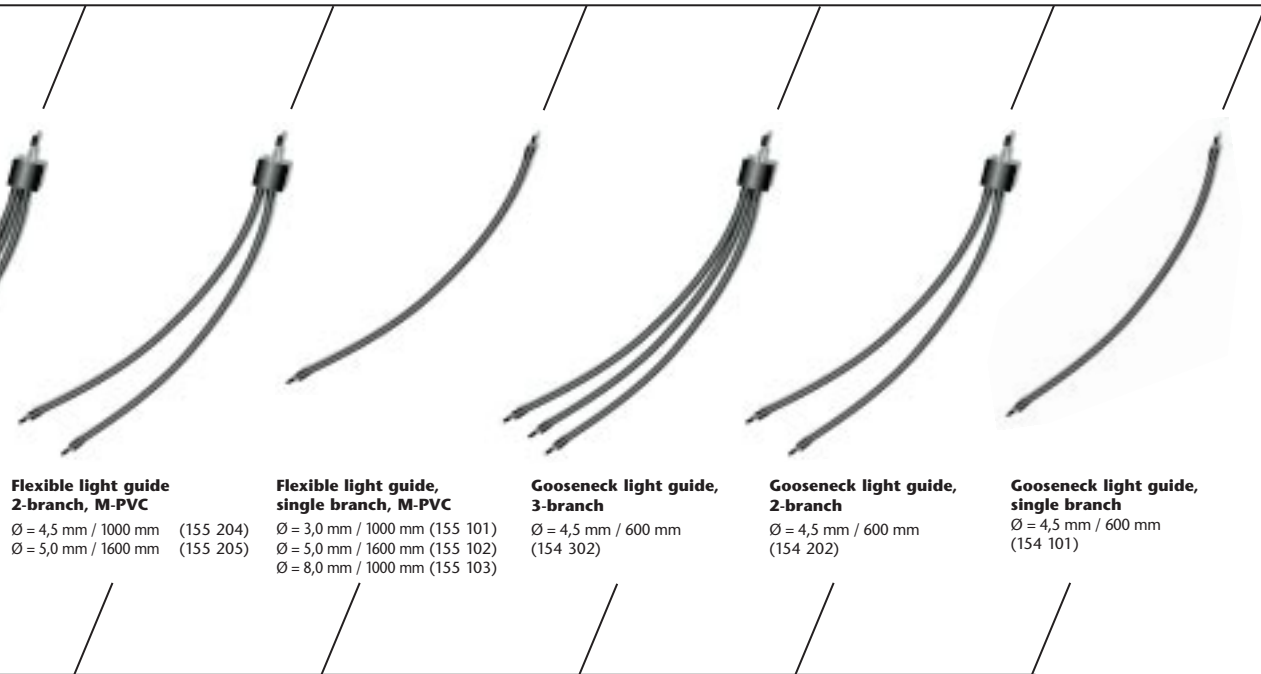
230 Volt (250 200)
120 Volt (250 201)



Insert filter Ø 28 mm for fluorescence excitation for filter wheel and filter slider (KL 1500 LCD)
 blue $\lambda = 484 \text{ nm}$ (258 313)
 green $\lambda = 515 \text{ nm}$ (258 314)



Flexible light guide
 M-PVC $\varnothing = 12 \text{ mm} / 1000 \text{ mm}$ (250 101)
 M-PVC $\varnothing = 15 \text{ mm} / 1000 \text{ mm}$ (250 102)



Transmitted light stage
 $\varnothing 84 \text{ mm}$,
 for flexible light guide
 up to $\varnothing 5 \text{ mm}$
 (122150)

Flexible light guide 2-branch, M-PVC
 $\varnothing = 4,5 \text{ mm} / 1000 \text{ mm}$ (155 204)
 $\varnothing = 5,0 \text{ mm} / 1600 \text{ mm}$ (155 205)

Flexible light guide, single branch, M-PVC
 $\varnothing = 3,0 \text{ mm} / 1000 \text{ mm}$ (155 101)
 $\varnothing = 5,0 \text{ mm} / 1600 \text{ mm}$ (155 102)
 $\varnothing = 8,0 \text{ mm} / 1000 \text{ mm}$ (155 103)

Gooseneck light guide, 3-branch
 $\varnothing = 4,5 \text{ mm} / 600 \text{ mm}$
 (154 302)

Gooseneck light guide, 2-branch
 $\varnothing = 4,5 \text{ mm} / 600 \text{ mm}$
 (154 202)

Gooseneck light guide, single branch
 $\varnothing = 4,5 \text{ mm} / 600 \text{ mm}$
 (154 101)



Focussing lens
 for light guides up to $\varnothing = 5 \text{ mm}$
 (158 210)



Holder for focussing lens (158 341)



Articulating arm with 2x M6 connecting threads (158 345)



Base for articulating arm 3x M6 threads (158 340)



Holder with M6 thread
 for flexible light guides up to $\varnothing = 5 \text{ mm}$ (158 330)
 for flexible light guides up to $\varnothing = 8 \text{ mm}$ (158 335)



Focussing lens and filter set
 for light guides up to $\varnothing = 5 \text{ mm}$
 blue, red, green, yellow
 (158 200)



Polarisation filter for focussing lens
 (158 205)



Daylight filter for focussing lens
 (158 211)

NEW

* Special accessories on request

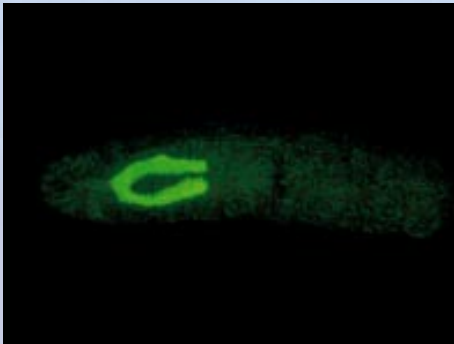
- Mini ringlight
- Transmitted light stage

*All specified light guide diameters are diameters of the active fiber bundle.

The best light for the best results

The KL 2500 LCD in practice.

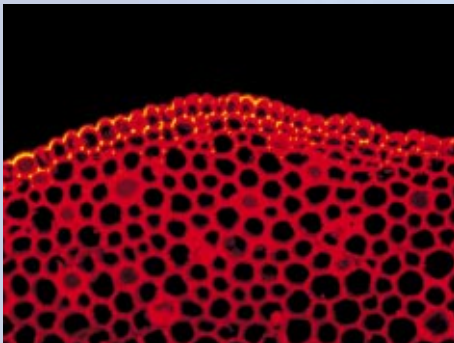
- Special application
Fluorescence microscopy
(blue and green excitation)
- Special application
Dark-field microscopy
(Incident dark field)



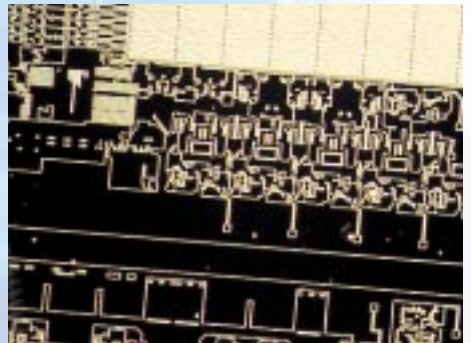
Drosophila (blue excitation)



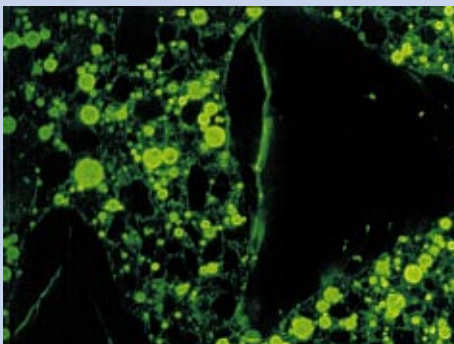
Fingerprint (blue excitation)



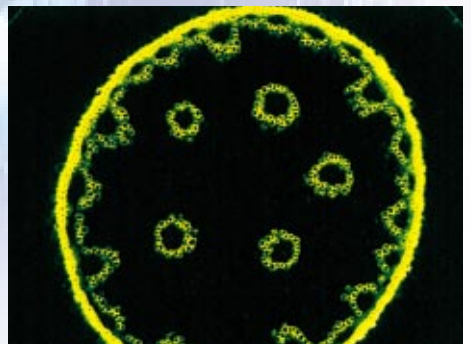
Lily of the valley (green excitation)



Wafer (incident dark field)



Concrete (blue excitation)



Lily of the valley (blue excitation)

The KL 2500 LCD

Twice the amount of light – ideal for special applications

The KL 2500 LCD is the performance leader in cold light sources from Schott.

With its 250 Watt cold light reflector lamp, the KL 2500 LCD exceeds twice the amount of light given by the KL 1500 LCD. It produces many-fold the amount of light currently available from other 150 Watt devices.

Unparalleled performance of the KL 2500 LCD makes it the instrument of choice for all applications in microscopy which demand a higher

light output.

Whether meeting macro-photography's shorter exposure requirements, light reserves for dark-field

microscopy or high energy levels for forensic & GFP fluorescence applications, the KL 2500 LCD is the right device.

When it comes to ease of use, the KL 2500 LCD can be justifiably described as the top model:

The KL 2500 LCD is supplied with a filter wheel which accommodates up to five insert filters. Filter selection is as simple as a turn of the knob. In addition, electronic accessories, such as remote control or tilt switch, can be connected to the front panel of the device enabling light source operation in difficult access areas.

With the modified collet chuck light guides up to 15 mm fiber bundle diameter can be used with optimum results. Design compatibility allows KL 1500 LCD light guides to also be used on the KL 2500 LCD.

All other functions, including the approvals are identical to the KL1500 LCD.



Euro check
(Blue excitation, fluorescence)



Technical Data

The KL 1500 LCD and KL 2500 LCD compared

Type designation:		KL 1500 LCD	KL 2500 LCD
General Data			
Dimensions (W x D x H)	(mm)	approx. 200 x 265 x 170	ca. 200 x 265 x 170
Weight	(kg)	approx. 4.8	approx. 6,0
Cooling		Low-noise fan	Low-noise fan
Electrical Data			
Operating voltage			
120 Volt version		100 V ~ 50/60 Hz 120 V ~ 60 Hz	100 V ~ 50/60 Hz 120 V ~ 60 Hz
230 Volt version		220 V...240 V ~ 50/60 Hz	220 V...240 V ~ 50/60 H
Protection		Class II	Class II
Lamp type		Halogen reflector lamp	Halogen reflector lamp
Lamp voltage rating	(V)	15	24
Lamp power rating	(W)	150	250
Average lamp service life			
Level 4	(h)	1500	1500
Level 5	(h)	150	150
Illumination Data			
Luminous flux	(lm)	600	1300
Light control		electrical and mechanical	electrical and mechanical
Active light guide diam.	(mm)	max. 9	max. 15
Certification Marks			
120 Volt version		CSA (C/US)	CSA (C/US)
230 Volt version		VDE/EMV	VDE/EMV
<p>Both light sources are approved and certified to the relevant standards for electrical laboratory devices (DIN EN 61010-1, UL 3101-1) and medical electrical instruments (DIN EN 60601-1, UL 2601-1). The certification acc. to the medical standards enables manufacturers simplified approval while integrating Schott's cold light sources in their medical device.</p> <p style="text-align: center;"><small>Modifications in the manufacture and supplied items are reserved due to on-going technical development.</small></p>			

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SCHOTT
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Cold light from Schott

KL 1500 LCD and KL 2500 LCD



SCHOTT
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The KL 1500 LCD

Cold light from Schott – the better light for your application

The KL 1500 LCD is setting new benchmarks in the field of 150 Watt cold light sources.

Cold, compact and cost-effective, with outstanding design and excellent function and performance parameters – these are the main features of the KL 1500 LCD.

Display, electronic and mechanical light control as well as a new maximum light level are just a few of the special advantages of this light source.

Of course, the time tested features of Schott cold light sources have been implemented again in the new KL 1500 LCD: functional lamp compartment for quick lamp replacement, filter drawer, swivel optics and unrestricted stacking capability without impairment of functions.

Easy and reproducible operation is being continued with the new generation of our cold light sources.

The design of a low-noise fan in combination with optimum air venting at the back of the unit helps contribute to quiet and pleasant working conditions.

Of course, the new KL 1500 LCD has been approved and certified by VDE and CSA (C/US) (120 Volt version). The 230 V version carries the **CE** conformity label.

