Microscopy Light Source MC-LS Quick-Start Manual

D20990.105 Rev A – DCN 24220

Intended Use

The SCHOTT Microscopy Light Source (MC-LS) is a variable intensity white LED light source intended for use with fiber optic light guides. This light source has a highly efficient, state of the art light engine, a simple user interface, and basic remote control capabilities. The MC-LS is compatible with SCHOTT ColdVision Series fiber optics.

Scope

This manual is designed to provide users with the technical information needed to safely operate the MC-LS, model #A20990.

Safety Information

If the equipment is not used in the manner specified by the manufacturer, the protection provided by the equipment may be impaired.

Symbol	Meaning
	**Warning, read the manual before operating the unit.**
	**Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eyes.**
	**Caution, hot surface**
	**Direct current**

Light-absorbing materials have the physical property of converting incident light into heat. Damage may occur to heat sensitive or flammable light absorbing materials. To avoid such thermal damage and the potential danger of fire or burns, please adhere to the following instructions:

- Never block the optical output aperture or place any part of the body in the light output path.
- Due to the high optical power in the focal area only fiber optic light guide with glass optical fibers should be used. Plastic optical fibers may be damaged due to the high temperatures.
- Do not cover any of the air vents when operating the unit.
- Use only the included power supply adaptor.
- Disconnect the power cord when the unit will be left unused for long periods of time.

- Do not use this unit near liquids, or in an area with excessive moisture. Do not spill liquids on the unit.
- Do not operate the MC-LS in an explosive environment. Do not place flammable materials on or near the unit.
- No not open or disassemble any part of the unit. There are no user-serviceable components inside the unit. Repairs must be carried out by an authorized service center. Contact your distributor or a SCHOTT sales representative for more information.

Operation

1. Place the MC-LS on a sturdy, flat surface. Ensure there is at least 2” of space between the top, rear, and sides of the unit and other equipment.
2. Insert the fiber optic into the nosecone. Gently tighten the thumbscrew by hand to secure the fiber optic. Over-tightening the thumbscrew may cause damage to both the MC-LS and the fiber optic.
3. Insert the power supply plug into the DC power receptacle on the rear of the MC-LS.
4. Plug the included AC power cord into the power supply and a grounded receptacle with the appropriate voltage and frequency.
5. Press the pushbutton on the front panel of the unit to turn it on. A blue light on the pushbutton will illuminate to indicate that the LED output is enabled.
6. Rotate the knob on the front panel to control the LED intensity.

Technical Specification

Power Supply Adaptor	Input: 100-240Vac (±10%), 50-60Hz 1.5A Output: 24VDC, 2.5A Manufacturer: GlobTek, Inc., Part Number: TR9CI2700LCP-N(R6B)
Overvoltage Category	Overvoltage category II
MC-LS DC Power Input	24VDC, 2.5A rated, 5.5mm x 2.5mm barrel connector, center is positive
Optical Output	850 lumens minimum, 1000 lumens typical, measured with an integrating sphere at the output of a reference light guide, 13mm active area, 1m length (SCHOTT P/N A08051.40)
Color temperature	5400K (typical)
Operating temperature	0°C to 40°C
Relative humidity	85% maximum
Pollution Degree	2
Altitude	0 – 2000m
Indoor or Outdoor Use	Indoor use only
Weight	5 lb. [2.3 kg]
Dimensions	5.8” [147mm] L x 5.7” [145mm] W x 3.9” [98mm] H

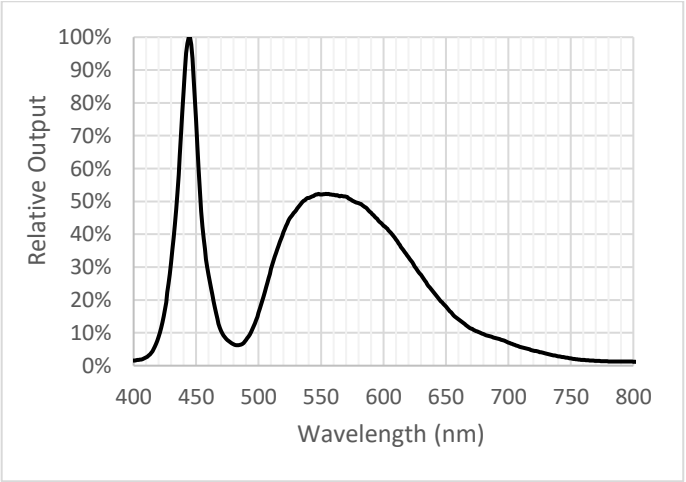

Figure 1: Typical Relative Spectral Output

Remote Operation

Basic use of the remote operation features are described in this section. Cable lengths must be limited to a maximum length of 3m.

Analog/Digital Controls

The MC-LS may be operated remotely using a potentiometer and a switch connected to the appropriate pins of the IN/OUT port as shown in Figure 3.

In the default configuration, the MC-LS must first be turned on using the front panel power switch. Connecting Pin 1 (Digital Input) to Pin 5 (Common) will then turn off the LED output.

Serial Control (USB or RS-232)

The MC-LS may be controlled remotely using simple text commands sent over the USB COM port or RS-232 serial port. The RS-232 port must be configured for 9600 baud, 8 data bits, 1 stop bit, and no parity.

All commands begin with an ampersand (&) and end with Carriage Return, ASCII code 0x0D (typically denoted as '\r').

Basic operating commands:

`&L1`	Enable LED output
`&L0`	Disable LED output
`&I##`	Adjust LED intensity ## must be a hexadecimal value between 0 and FF (decimal 0 to 255) where FF is maximum brightness. Example: `&I7F` for 50% brightness

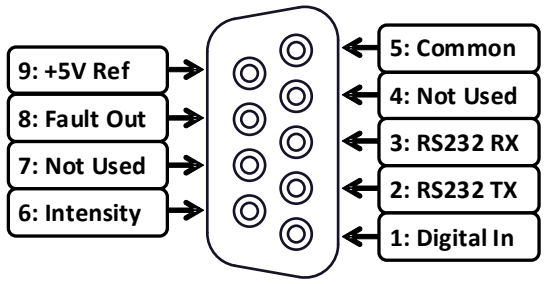

Figure 2: IN/OUT Port Pinout

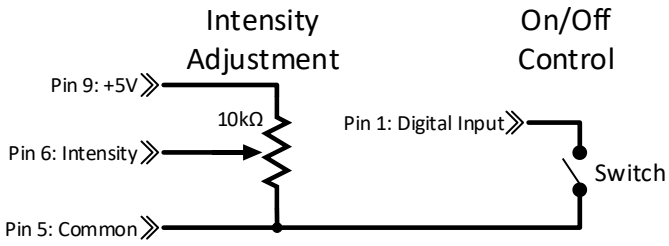

Figure 3: Analog/Digital Control, Typical Application

Pin	Description
1	Digital input, 0-5V, 24V tolerant
2	RS232 Transmit
3	RS232 Receive
4	Not connected
5	Common return for all signals
6	Intensity adjustment, 0-5V analog, 24V tolerant
7	Not connected
8	Fault output, open collector, 30V, 10mA
9	+5V output, 10mA maximum

Please refer to the MC-LS product page of the SCHOTT website for further information about remote operation.

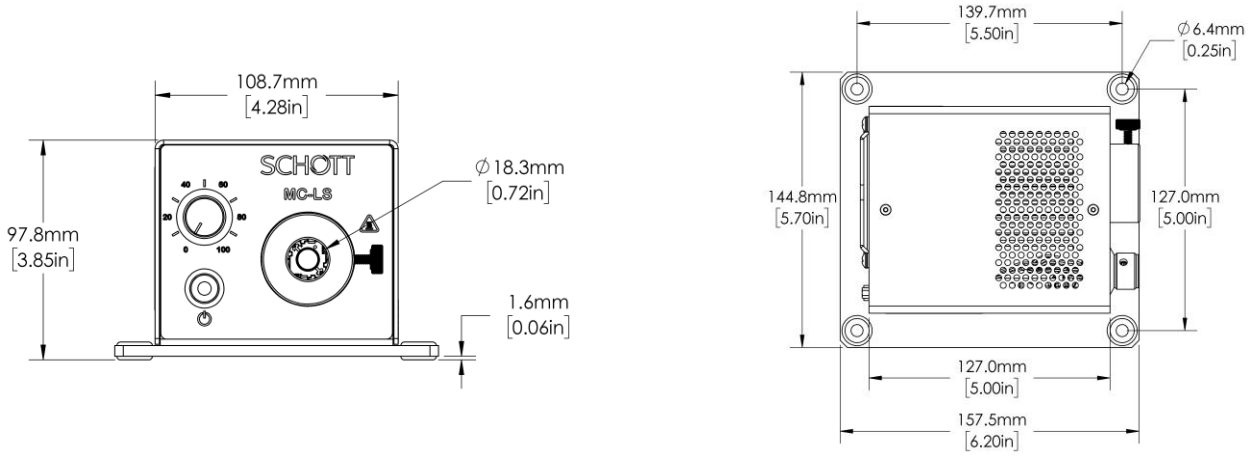

Figure 4: Outline Dimensions

Figure 5 – Front Controls

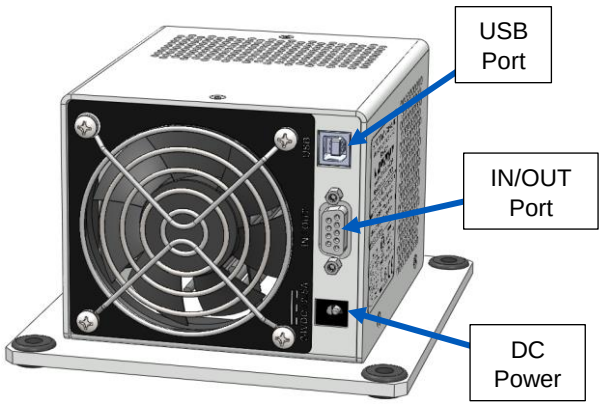

Figure 6 – Rear Controls

Warranty and Liability

SCHOTT warrants our light sources to be free from defective workmanship and materials. If, within two (2) years from shipment date, any product and/or part thereof are determined by SCHOTT to be defective, we will repair or replace it with a new or reconditioned product and/or part.
Warranty is void if:

- We determine the product has been subjected to neglect or misuse, or has been installed following procedures not in accordance with our instruction manual.
- Unauthorized repairs or modifications have occurred.
- The warranty seal has been broken or the serial number label has been altered.

Our obligation is limited to repair or replacement. SCHOTT will not be held responsible for consequential damages, transportation, installation, adjustment or other expenses arising in connection with our products or parts. This warranty is in lieu of all other statements or guarantees, written or implied, by SCHOTT or SCHOTT authorized representatives.

Servicing

There are no user-serviceable components inside the MC-LS. All repairs must be made by an authorized repair facility. Opening the housing of the unit will void the warranty. Please contact your distributor or SCHOTT sales representative for technical support.

Contact Information

Customer Support

Lighting and imaging
SCHOTT North America, Inc.
122 Charlton Street
Southbridge, MA 01550
Phone: (508) 765-9744
Fax: (508) 765-1299
E-Mail: lightingimaging@us.schott.com
Website: www.us.schott.com/lightingimaging

Technical Support

For technical support, please contact your distributor, SCHOTT sales representative, or email lightingimaging@us.schott.com.

The latest product information can be found on the SCHOTT website at www.us.schott.com/lightingimaging

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