

# LNC-5LTM-100-11+56CM-685-12-H13-A8-H-6

Semi-telecentric Macro Line Generator



#### **FEATURES**

Semi-telecentric laser line with constant line length of 4.8 mm and extended depth of focus.

Line length: 4.8 mm
Line width: 99 μm
Wavelength: 685 nm
Working distance: 91 mm
Depth of focus: 30.5 mm

Low noise laser module (0.1 % RMS, @<1 MHz)</li>

- Macro Line Generator for extended depth of focus
- Low noise, low coherence laser module (typ. < 0.15 % of P<sub>0</sub> (RMS, Bandwidth < 1 MHz))</li>





# **DESCRIPTION**

The laser diode beam source type LNC-5LTM-100-11+56CM-685-12-H13-A8-H-6 produces a semi-telecentric laser line with 4.8 mm line length and extended depth of focus. The intensity profile is Gaussian in line direction clipped by an aperture with an edge intensity of 15 %. The line width is constant along the laser line. Across the laser line the intensity distribution is approx. Gaussian.

The laser has integrated electronics <u>type H</u> for control of the laser output power. It is a low noise laser source (0.1 % RMS,@<1 MHz) with reduced coherence length and operates mode-hopping free. Due to the reduced coherence length the speckle contrast might be lowered. Please note that this effect is smaller for smaller lines and spots. The output power can be controlled using the  $\underline{\text{modulation input ports (TTL and analog)}}$  or manually using the potentiometer.



For this laser type the working distance is fixed. A fine-adjustment of the distance between laser and target is recommended for fine-focusing in order to achieve minimal line width.

# **TECHNICAL DATA**

LNC-5LTM-100-11+56CM-685-12-H13-A8-H-6

Line type Laser Macro Line Wavelength 685 +10/-10 m Laser output power 12 m Laser safety class Focussing range 91-91 m Working distance 91 m Line width 0.099 m Depth of focus 30.5 m Edge intensity Diameter laser module Module length 88 m Installation length 209 m Cable length 1.56 Connector type Lumberg SV50 IEC 61076-2-10 Supply voltage 5 ± 0.25 Max. current consumption 0.25 Max. description of the current same and the curre	Series		5LTM
Line type         Laser Macro Lin           Wavelength         685 + 10/-10 m           Laser output power         12 m           Laser safety class         3           Focussing range         91-91 m           Working distance         91 m           Line length         4.8 m           Line width         0.099 m           Depth of focus         30.5 m           Edge intensity         15 m           Diameter laser module         25/28 m           Module length         88 m           Installation length         209 m           Cable length         1.5 m           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Order Code	LNC-5LTM-100-11+56CM-685-12-H13-A8-H-6	
Wavelength         685 + 10/-10 m           Laser output power         12 m           Laser safety class         3           Focussing range         91-91 m           Working distance         91 m           Line length         4.8 m           Line width         0.099 m           Depth of focus         30.5 m           Edge intensity         15 m           Diameter laser module         25/28 m           Module length         88 m           Installation length         209 m           Cable length         1.5 m           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 µs         1.5/0.1 µ	Line profile	Gaussian Intensity Distribution	
Laser output power         12 mV           Laser safety class         3           Focussing range         91-91 mm           Working distance         91 mm           Line length         4.8 mm           Line width         0.099 mm           Depth of focus         30.5 mm           Edge intensity         15 mm           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 µs         1.5/0.1 µm	Line type	Laser Macro Line	
Laser safety class         3           Focussing range         91-91 mm           Working distance         91 mm           Line length         4.8 mm           Line width         0.099 mm           Depth of focus         30.5 mm           Edge intensity         15 cm           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Wavelength	685 +10/-10 nm	
Focussing range         91-91 mm           Working distance         91 mm           Line length         4.8 mm           Line width         0.099 mm           Depth of focus         30.5 mm           Edge intensity         15 mm           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Laser output power	12 mW	
Working distance         91 mm           Line length         4.8 mm           Line width         0.099 mm           Depth of focus         30.5 mm           Edge intensity         15 cm           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Laser safety class	3B	
Line length         4.8 mm           Line width         0.099 mm           Depth of focus         30.5 mm           Edge intensity         15 mm           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Focussing range	91-91 mm	
Line width         0.099 mm           Depth of focus         30.5 mm           Edge intensity         15 graph           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Working distance	91 mm	
Depth of focus         30.5 mm           Edge intensity         15.9           Diameter laser module         25/28 mm           Module length         88 mm           Installation length         209 mm           Cable length         1.5 mm           Connector type         Lumberg SV50 IEC 61076-2-10           Supply voltage         5 ± 0.25           Max. current consumption         0.25           Working temperature         0 - 40 °           Modulation inputs         Analog         TT           Input resistance         22 kOhm         22 kOhm           Max. modulation frequency         100 kHz         100 kHz           Modulation delay ON/OFF         2/0.3 μs         1.5/0.1 μ	Line length	4.8 mm	
Edge intensity15 cmDiameter laser module25/28 mmModule length88 mmInstallation length209 mmCable length1.5 mmConnector typeLumberg SV50 IEC 61076-2-10Supply voltage5 ± 0.25Max. current consumption0.25 mmWorking temperature0 - 40 °Modulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μm	Line width	0.099 mm	
Diameter laser module25/28 mmModule length88 mmInstallation length209 mmCable length1.5 mmConnector typeLumberg SV50 IEC 61076-2-10Supply voltage5 ± 0.25Max. current consumption0.25 mmWorking temperature0 - 40 °Modulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Depth of focus	30.5 mm	
Module length88 mmInstallation length209 mmCable length1.5 mmConnector typeLumberg SV50 IEC 61076-2-10Supply voltage5 ± 0.25Max. current consumption0.25 mmWorking temperature0 - 40 mmModulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μm	Edge intensity	15 %	
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Cable length1.5 mConnector typeLumberg SV50 IEC 61076-2-10Supply voltage5 ± 0.25Max. current consumption0.25 mWorking temperature0 - 40 mModulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Module length	88 mm	
Connector type  Supply voltage  5 ± 0.25  Max. current consumption  0.25  Working temperature  0 - 40 °  Modulation inputs  Analog  TT  Input resistance  22 kOhm  Max. modulation frequency  Modulation delay ON/OFF  2/0.3 µs  1.5/0.1 µ	Installation length	209 mm	
Supply voltage $5 \pm 0.25$ Max. current consumption $0.25$ Working temperature $0 - 40^{\circ}$ Modulation inputsAnalogTTInput resistance $22 \text{ kOhm}$ $22 \text{ kOhm}$ Max. modulation frequency $100 \text{ kHz}$ $100 \text{ kHz}$ Modulation delay ON/OFF $2/0.3 \mu \text{s}$ $1.5/0.1 \mu$	Cable length	1.5 m	
Max. current consumption0.25.Working temperature0 - 40 °Modulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Connector type	Lumberg SV50 IEC 61076-2-106	
Working temperature0 - 40 °Modulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Supply voltage	5 ± 0.25 V	
Modulation inputsAnalogTTInput resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Max. current consumption	0.25 A	
Input resistance22 kOhm22 kOhmMax. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Working temperature	0 - 40 °C	
Max. modulation frequency100 kHz100 kHzModulation delay ON/OFF2/0.3 μs1.5/0.1 μ	Modulation inputs	Analog	TTL
Modulation delay ON/OFF 2/0.3 μs 1.5/0.1 μ	Input resistance	22 kOhm	22 kOhm
	Max. modulation frequency	100 kHz	100 kHz
Rise / Fall time $1/1 \mu s$ $1/1 \mu s$	Modulation delay ON/OFF	2/0.3 μs	1.5/0.1 μs
	Rise / Fall time	1/1 μs	1/1 μs
Noise (< 1 MHZ RMS) 0.19	Noise (< 1 MHZ RMS)	0.1%	



### **ACCESSORIES**

9D-12 Screwdriver WS 1.2

13MK-25-36-10-F Mounting Console with flat base plate

Mounting Console with base plate with dovetail 13MK-25-36-10-M

profile

PS051003E Power Supply 5 V

# **RELATED PRODUCTS**

LASER MODULES ■ Semi-telecentric Micro Line **SERIES LNC-5LT-2** Gaussian intensity distribution

Constant line length ca. 2 mm

Low noise

**LASER MODULES**  Semi-telecentric Macro Line **SERIES 5LTM-2** Gaussian intensity distribution

Constant line length ca. 2 mm

Extended depth of focus

Semi-telecentric Macro Line LASER MODULES

**SERIES** Uniform intensity distribution LNC-13LTM Constant line length 15 mm

Extended depth of focus

Low noise

LASER MODULES Semi-telecentric Macro Line **SERIES LNC-5LTM-1** 

Gaussian intensity distribution

Constant line length ca. 4.8 mm

Extended depth of focus

Low noise



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