

# LNC-5LT-250-2+56CM-405-37-X15-A7.5-HP-4

Semi-telecentric Micro Line Generator



#### **FEATURES**

Semi-telecentric laser line with constant line length of 2.4 mm.

Line length: 2.4 mm
Line width: 30 μm
Wavelength: 405 nm
Working distance: 250 mm

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

- Micro Line Generator for small laser line widths and high power density in the focal plane
- 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-5LT-250-2+56CM-405-37-X15-A7.5-HP-4 produces a semi-telecentric laser line with 2.4 mm line length. In this case the line length is given on the 13.5%-level. The intensity profile is Gaussian in line direction and the line is truncated at 4.8 mm. The line width is constant along the laser line. Across the laser line the intensity distribution is Gaussian.

The laser has integrated electronics <u>type HP</u> with micro-controller 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 <u>modulation input ports (TTL and analog)</u> 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-5LT-250-2+56CM-405-37-X15-A7.5-HP-4

Line profile       Gaussian Intensity Distribution         Line type       Laser Micro Line         Wavelength       405 +5/-5 nr         Laser output power       37 mV         Laser safety class       38         Focussing range       250-250 mr         Working distance       250 mr         Line length       2.4 mr         Line width       0.03 mr         Rayleigh range       3.53 mr         Edge intensity       10 g         Diameter laser module       25/28 mr         Module length       82.6 mr         Installation length       362.6 mr         Cable length       1.5 r         Connector type       Lumberg SV40 IEC 61076-2-10         Supply voltage       12 ± 0.5¹         Max. current consumption       0.37         Working temperature       15 - 40 °c         Modulation inputs       Analog       TT         Input resistance       9 kOhm       9 kOhr         Max. modulation frequency       0.001 kHz       300 kH         Modulation delay ON/OFF       2000/500 μs       0.5/0.2 μ	Series		5LT
Line type         Laser Micro Lin           Wavelength         405 +5/-5 nr           Laser output power         37 mV           Laser safety class         38           Focussing range         250-250 mr           Working distance         250 mr           Line length         2.4 mr           Line width         0.03 mr           Rayleigh range         3.53 mr           Edge intensity         10 g           Diameter laser module         25/28 mr           Module length         82.6 mr           Installation length         362.6 mr           Cable length         1.5 r           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5¹           Max. current consumption         0.37           Working temperature         15 - 40 ° c           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhr           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Order Code	LNC-5LT-250-2+56CM-405-37-X15-A7.5-HP-4	
Wavelength         405 + 5/-5 nr           Laser output power         37 mV           Laser safety class         31           Focussing range         250-250 mr           Working distance         250 mr           Line length         2.4 mr           Line width         0.03 mr           Rayleigh range         3.53 mr           Edge intensity         10 9           Diameter laser module         25/28 mr           Module length         32.6 mr           Installation length         362.6 mr           Cable length         1.5 r           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5°           Max. current consumption         0.30           Working temperature         15 - 40 ° c           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhr           Max. modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Line profile	Gaussian Intensity Distribution	
Laser output power         37 mV           Laser safety class         31           Focussing range         250-250 mr           Working distance         250 mr           Line length         2.4 mr           Line width         0.03 mr           Rayleigh range         3.53 mr           Edge intensity         10 9           Diameter laser module         25/28 mr           Module length         82.6 mr           Installation length         362.6 mr           Cable length         1.5 r           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5°           Max. current consumption         0.37           Working temperature         15 - 40 ° c           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhr           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Line type	Laser Micro Line	
Laser safety class         31           Focussing range         250-250 mm           Working distance         250 mm           Line length         2.4 mm           Line width         0.03 mm           Rayleigh range         3.53 mm           Edge intensity         10 %           Diameter laser module         25/28 mm           Module length         82.6 mm           Installation length         362.6 mm           Cable length         1.5 mm           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5°           Max. current consumption         0.37           Working temperature         15 - 40 °C           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhm           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Wavelength	405 +5/-5 nm	
Focussing range         250-250 mm           Working distance         250 mm           Line length         2.4 mm           Line width         0.03 mm           Rayleigh range         3.53 mm           Edge intensity         10 9           Diameter laser module         25/28 mm           Module length         82.6 mm           Installation length         362.6 mm           Cable length         1.5 mm           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5 mm           Max. current consumption         0.37           Working temperature         15 - 40 mm           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhm           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Laser output power	37 mW	
Working distance         250 mm           Line length         2.4 mm           Line width         0.03 mm           Rayleigh range         3.53 mm           Edge intensity         10 9           Diameter laser module         25/28 mm           Module length         82.6 mm           Installation length         362.6 mm           Cable length         1.5 mm           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5°           Max. current consumption         0.37           Working temperature         15 - 40 °C           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhm           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Laser safety class	3В	
Line length         2.4 mm           Line width         0.03 mm           Rayleigh range         3.53 mm           Edge intensity         10 9           Diameter laser module         25/28 mm           Module length         82.6 mm           Installation length         362.6 mm           Cable length         1.5 mm           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5 mm           Max. current consumption         0.37           Working temperature         15 - 40 mm           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhm           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Focussing range	250-250 mm	
Line width         0.03 mm           Rayleigh range         3.53 mm           Edge intensity         10 %           Diameter laser module         25/28 mm           Module length         82.6 mm           Installation length         362.6 mm           Cable length         1.5 mm           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5 %           Max. current consumption         0.37           Working temperature         15 - 40 ° c           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhm           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Working distance	250 mm	
Rayleigh range3.53 mmEdge intensity10 9Diameter laser module25/28 mmModule length82.6 mmInstallation length362.6 mmCable length1.5 mmConnector typeLumberg SV40 IEC 61076-2-10Supply voltage12 ± 0.5 mmMax. current consumption0.37Working temperature15 - 40 mmModulation inputsAnalogTTInput resistance9 kOhm9 kOhmMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Line length	2.4 mm	
Edge intensity10 %Diameter laser module25/28 mrModule length82.6 mrInstallation length362.6 mrCable length1.5 rConnector typeLumberg SV40 IEC 61076-2-10Supply voltage12 ± 0.5 vMax. current consumption0.3 rWorking temperature15 - 40 ° cModulation inputsAnalogTTInput resistance9 kOhm9 kOhrMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Line width	0.03 mm	
Diameter laser module25/28 mmModule length82.6 mmInstallation length362.6 mmCable length1.5 mmConnector typeLumberg SV40 IEC 61076-2-10Supply voltage12 ± 0.5 mmMax. current consumption0.3 mmWorking temperature15 - 40 mmModulation inputsAnalogInput resistance9 kOhmMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Rayleigh range	3.53 mm	
Module length         82.6 mm           Installation length         362.6 mm           Cable length         1.5 mm           Connector type         Lumberg SV40 IEC 61076-2-10           Supply voltage         12 ± 0.5 mm           Max. current consumption         0.3 mm           Working temperature         15 - 40 mm           Modulation inputs         Analog         TT           Input resistance         9 kOhm         9 kOhm           Max. modulation frequency         0.001 kHz         300 kH           Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Edge intensity	10 %	
Installation length  Cable length  1.5 r  Connector type  Lumberg SV40 IEC 61076-2-10  Supply voltage  12 ± 0.5 v  Max. current consumption  Working temperature  15 - 40 ° c  Modulation inputs  Analog  TT  Input resistance  9 kOhm  9 kOhr  Max. modulation frequency  0.001 kHz  362.6 mr  1.5 r  1	Diameter laser module	25/28 mm	
Cable length1.5 mConnector typeLumberg SV40 IEC 61076-2-10Supply voltage12 ± 0.5 mMax. current consumption0.3 mWorking temperature15 - 40 mModulation inputsAnalogTTInput resistance9 kOhm9 kOhmMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Module length	82.6 mm	
Connector typeLumberg SV40 IEC 61076-2-10Supply voltage12 ± 0.5 °VMax. current consumption0.3 °VWorking temperature15 - 40 °CModulation inputsAnalogTTInput resistance9 kOhm9 kOhmMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Installation length	362.6 mm	
Supply voltage12 ± 0.5 NMax. current consumption0.3 AWorking temperature15 - 40 °CModulation inputsAnalogTTInput resistance9 kOhm9 kOhmMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Cable length	1.5 m	
Max. current consumption0.3 /rWorking temperature15 - 40 °CModulation inputsAnalogTTInput resistance9 kOhm9 kOhrMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Connector type	Lumberg SV40 IEC 61076-2-106	
Working temperature15 - 40 °CModulation inputsAnalogTTInput resistance9 kOhm9 kOhrMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Supply voltage	12 ± 0.5 V	
Modulation inputsAnalogTTInput resistance9 kOhm9 kOhrMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Max. current consumption	0.3 A	
Input resistance9 kOhm9 kOhrMax. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Working temperature	15 - 40 °C	
Max. modulation frequency0.001 kHz300 kHModulation delay ON/OFF2000/500 μs0.5/0.2 μ	Modulation inputs	Analog	TTL
Modulation delay ON/OFF         2000/500 μs         0.5/0.2 μ	Input resistance	9 kOhm	9 kOhm
	Max. modulation frequency	0.001 kHz	300 kHz
Rise / Fall time         200000/200000 μs         0.8/0.3 μ	Modulation delay ON/OFF	2000/500 μs	0.5/0.2 μs
	Rise / Fall time	200000/200000 μs	0.8/0.3 μs
Noise (< 1 MHZ RMS) 0.19	Noise (< 1 MHZ RMS)	0.1%	



#### **DOWNLOADS**



# **ACCESSORIES**

**9D-12** Screwdriver WS 1.2

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

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

profile

**PS120516E** Power Supply 12 V

### **RELATED PRODUCTS**

LASER MODULES SERIES LNC-5LTM-2 Semi-telecentric Macro Line

Gaussian intensity distribution

Constant line length ca. 2 mm

Extended depth of focus

Low noise

LASER MODULES SERIES 5LTM-2

Semi-telecentric Macro Line

Gaussian intensity distribution

Constant line length ca. 2 mm

Extended depth of focus

**LASER MODULES** 

SERIES LNC-13LT Semi-telecentric Micro Line

Uniform intensity distribution

Constant line length 15 mm

Low noise

LASER MODULES SERIES LNC-5LT-1 Semi-telecentric Micro Line

Gaussian intensity distribution

Constant line length ca. 4.8 mm

Low noise



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#### **CONTACT**

For more information please contact: Schäfter + Kirchhoff GmbH Kieler Str. 212 22525 Hamburg Germany

Tel: +49 40 85 39 97-0 Fax: +49 40 85 39 97-79

info@sukhamburg.de www.sukhamburg.com

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