Helium Neon Laser Module for OEM Application (Customized)
Helium Neon Laser Module for OEM Application (customer-specific)

Manufacturer: LASOS Lasertechnik GmbH
Manufacturer: Franz-Loewen-Str. 2
07745 Jena
Germany
Phone: (+49) 3641 / 29 44-0
Fax: (+49) 3641 / 29 44-300
Internet: http://www.lasos.com
Email: info@lasos.com

1 Safety

1.1 Power supplies

The laser may only be operated with an approved power supply.
The operation of the laser is only allowed with a permissible power supply.

The following power supplies must be used to operate the laser:
For laser operation the following power supplies have to be used:

	Order number Order number	Input voltage Dimensions L x W x H [mm] Input voltage	Dimensions L x W x H [mm]
LGN 7460 A	577009-0712-000	115/230VAC 50/60Hz	107.9x76.2x30.5
LGN7462	577009-0746-203	12VDC	101.6x38.1x25.4
SAN 7460 A	577009-1302-000	115/230VAC 50/60Hz	231x212x70
SAN 7460 AJ	577009-1309-000	100VAC 50/60Hz	231x212x70

1.2 Contact protection / laser safety

Touch Guard / Laser safety

Contact protection and laser safety must be ensured by the user.
During installation and operation, the regulations applicable to the application, such as DIN EN 62368-1, EN 61010-1, EN 60825-1 and BGV B2 must be observed.
Before commissioning the module, the protective conductor connection must be connected to the protective conductor potential.
The protective conductor connection is marked with the symbol.
The plug for connecting the power supply to the module is not suitable, operationally connected or to be solved.
The touch guard and laser safety have to be guaranteed by user.
At installation and in operation pay attention to the applicable regulations, like DIN EN 62368-1, EN 61010-1, EN 60825-1 and BGV B2.
Before operation module must be connected to system ground. Connection for ground conductor is marked with the following label:
The connector between power supply and laser module is not suitable for connecting or disconnecting during operation.

	Date	name
edited	19.03.2020	LADKE
checked	27.03.2020	LAMLZ
released	30.03.2020	LADKE

Status: **Released**

0C 421	Status	19.03.2020	LADKE
Change		Date	Name

LASOS Lasertechnik GmbH
www.lasos.com

Data Sheet / Data Survey
LGK 7786 P with fiber optic cable

Document number / document # *577097-5102-013*
Sheet *1* of 6
Replacement for
Replaced by

Danger!
After switching off the power supply, residual charge (high voltage) may be present on the electrodes.
This can be eliminated by short-circuiting the electrodes.
Caution!
After switch-off of the power supply, residual charge (high voltage) may be present at the electrodes.
It can be removed by shorting the electrodes.

1.3 Laser class

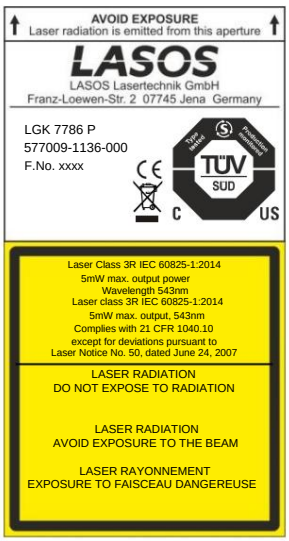
Attention! Laser class 3R according to DIN EN 60825-1:2014 and laser class 3R according to CDRH.
Avoid exposure of eyes or skin to direct or scattered radiation.
Attention! Laser class 3R according to DIN EN 60825-1:2014 and laser class 3R according to CDRH.
Avoid irradiation of eye or skin by direct or scattered radiation.

1.4 Disclaimer / Limited liability

Any interference with the device will void any warranty. LASOS accepts no liability for damages, which arise from non-observance of the safety instructions.
Guarantee expires by intervention in device. LASOS refuses any liability for damage at non-compliance of safety requirements.

1.5 Warning signs / Danger signs

Type label



Caution laser beam!

	Date	name
edited	19.03.2020	LADKE
checked	27.03.2020	LAMLZ
released	30.03.2020	LADKE

Status: **Released**

LASOS Lasertechnik GmbH
www.lasos.com

Data Sheet / Data Survey
LGK 7786 P with fiber optic cable

Document number / document # *577097-5102-013*

Sheet *2* of 6

0C 42	Status	19.03.2020 LADKE	
Change		Date	Name

Replacement for | Replaced by

1.6 Electromagnetic compatibility

If the laser module is operated with the power supply unit LGN 7460 A or LGN 7462, compliance with the limit values according to EN 61000-6-3 and EN 61000-6-4 cannot be guaranteed.
To comply with these limits, a suitable interference suppression filter must be installed in front of the power supply unit necessary.
If the laser module is operated with the laboratory power supply SAN 7460 A or SAN 7460 AJ, compliance with the limit values according to EN 61000-6-3 and EN 61000-6-4 is guaranteed.

When the module is operated with the power supply LGN 7460 A or LGN 7462 limit values of the DIN EN 61000-6-3 and DIN EN 61000-6-4 are not provided.
To meet the limit values the use of a suitable interference suppression element between line voltage and power supply is necessary.
When the module is operated with the power supply SAN 7460 A or SAN 7460 AJ limit values of DIN EN 61000-6-3 and DIN EN 61000-6-4 are provided.

1.7 Type test

The laser module complies with the applicable safety requirements and has been tested according to:
The laser module meets the relevant safety requirements and was tested according to:

EN61010-1
EN60825-1

UL61010-1:2012
CAN/CSA-C22.2 No. 61010-1:2012
CAN/CSA-E60825-1:2003

2 Characteristics

2.1 Wavelength	543	nm	
2.2 Power output after warm-up period	ÿ 0.7	mW	
2.3 Running-in period Warm-up period	20	min	
2.4 Mode purity TEM00 Mode purity TEM00	ÿ 95	%	
2.5 Beam diameter (1/e²) Beam diameter (1/e²)	0.73 ± 0.09	mm	[1]
2.6 Position of beam waist with respect to contact surface of connector	ÿ ± 31	cm	

[1] Beam waist Ø 0.76mm at a distance of 430 mm in front of the output mirror
Beam waist Ø 0.76mm at a distance of 430 mm in front of output mirror

	Date	name
edited	19.03.2020	LADKE
checked	27.03.2020	LAMLZ
released	30.03.2020	LADKE

Status: **Released**

Data Sheet / Data Survey
LGK 7786 P with fiber optic cable

LASOS Lasertechnik GmbH
www.lasos.com

Document number / document # 577097-5102-013

0C 42	Status	19.03.2020 LADKE	
Change		Date	Name

Replacement for | Replaced by

2.7 Constancy of output power during 8 hours after running-in	ÿ ± 5	%	1
Output power stability during 8h after warm-up			
2.8 Beam quality M² Beam quality M²	ÿ 1.2		
2.9 Ellipticity	< 1.2		
2.10 Polarization Polarization	ÿ 100:1		
2.11 Longitudinal mode spacing (c/2L) Longitudinal mode spacing (c/2L)	348	MHz	
2.12 Connector position error Position deviation of connector			
Parallel / Lateral	ÿ ± 10	µm	
Angle / Angular	ÿ ± 20	µrad	
2.13 Noise Noise			
25 Hz ... 1 MHz ÿ	ÿ 2	% PP	
500 Hz	ÿ 0.75	% PP	
2.14 Noise in single frequencies (FFT) Noise at single frequencies (FFT)			
2kHz ... 20kHz 0 ...	ÿ 0.3	%rms	
500Hz	ÿ 0.1	%rms	
2.15 Ignition voltage	ÿ 10	kV	
2.16 Operating voltage	2.2 … 2.6	kV	
2.17 Operating current	6.5 ± 0.2	mA	

[1] Under constant ambient conditions

	Date	name
edited	19.03.2020	LADKE
checked	27.03.2020	LAMLZ
released	30.03.2020	LADKE

Status: **Released**

0C 42	Status	19.03.2020	LADKE
Change		Date	Name

LASOS Lasertechnik GmbH
www.lasos.com

Data Sheet / Data Survey
LGK 7786 P with fiber optic cable

Document number / document # 577097-5102-013

Sheet 4 of 6

Replacement for | Replaced by

3 Environmental tests (non-operating)

3.1 Shock (IEC 68-2-27, Test Ea)

Test:	acceleration	150	m/s²
	Length of time		ms
	Number of impacts	11 3 each in the directions ± X, ± Y, ± Z	
	Impact shape	half-sine	
Test:	Acceleration	150	m/s²
	Duration		ms
	Number of shocks	11 3 in each direction ±X, ±Y, ±Z	
	Shock shape	half sine	

3.2 Oscillation / Vibration (IEC 68-2-6, Test Fc)

Test:	Frequency range	10 ... 55	Hz
	Amplitude of deflection	0.35	mm
	Feed		Octave/min
	Directions: X, Y, Z	1 6	Cycles/Axis
Test:	Frequency range	10 … 55	Hz
	Displacement amplitude	0.35	mm
	Sweep rate		octave/min
	Directions: X, Y, Z	1 6	cycles per axis

4 Environmental conditions

4.1 Temperature range

Operation	15 ... 45	°C
Storage	-20 ... 60	°C

4.2 Relative humidity

Operating (non-condensing)	ÿ 80	%
Storage	ÿ 95	%

4.3 Altitude

Operation	3000	m
Storage	12000	m

5 Mechanical data

Dimensions	see dimension drawing: Sheet 6
Dimensions	see Outline Drawing: Page 6
Mass / Mass	approx. 900 g
Mounting position	any / user-defined

Status: **Released**

	Date	name
edited	19.03.2020	LADKE
checked	27.03.2020	LAMLZ
released	30.03.2020	LADKE

LASOS Lasertechnik GmbH
www.lasos.com

Data Sheet / Data Survey
LGK 7786 P with fiber optic cable

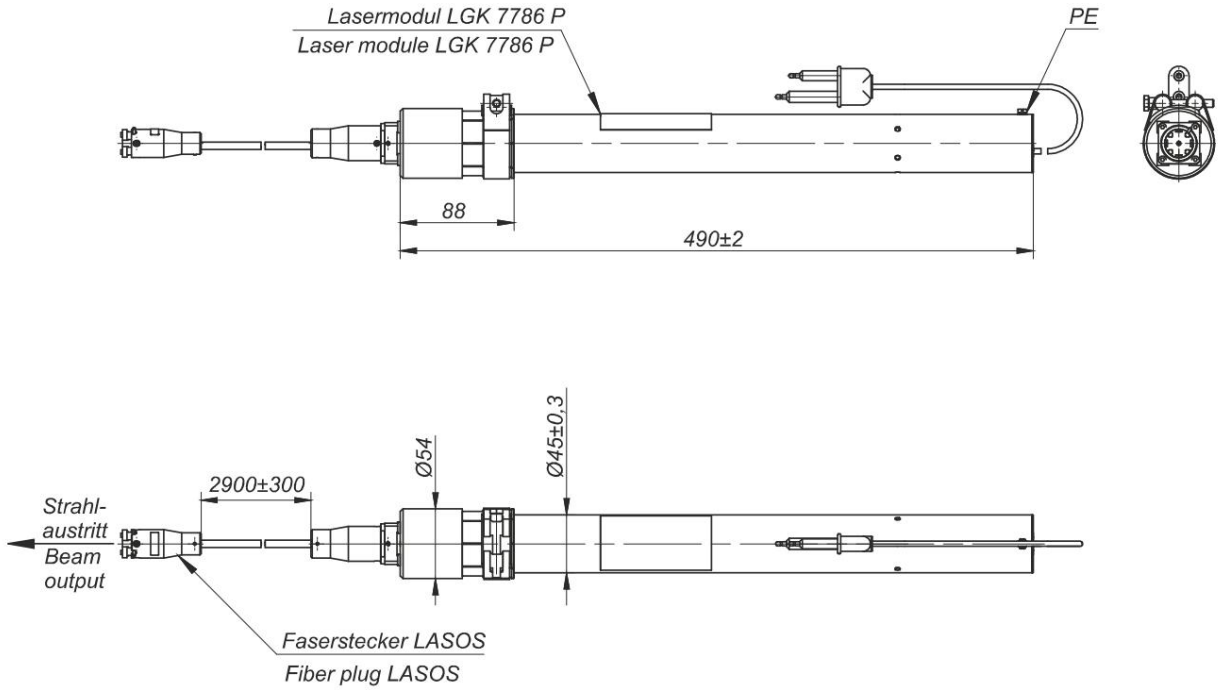
Document number / document # 577097-5102-013

0C 421	Status	19.03.2020 LADKE	
Change		Date	Name

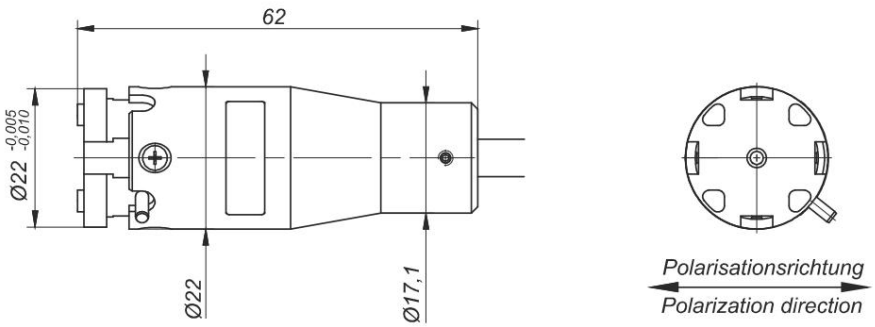
Replacement for | Replaced by

6 Dimension drawing

Outline Drawing



Faserstecker LASOS
Fiber plug LASOS



all dimensions in mm

	Date	name
edited	19.03.2020	LADKE
checked	27.03.2020	LAMLZ
released	30.03.2020	LADKE

Status: **Released**

Data Sheet / Data Survey
LGK 7786 P with fiber optic cable

LASOS Lasertechnik GmbH
www.lasos.com

Document number / document # 577097-5102-013

Sheet 6 of 6

0C 42	Status	19.03.2020 LADKE	
Change		Date	Name

Replacement for | Replaced by