

SNP High Performances IR Microchip Series

Key features

- ▶ Repetition rate up to 40kHz
- ▶ Ultrashort pulses down to 600ps
- ▶ Multi-kW peak power
- ▶ Excellent beam quality – TEM00, $M^2 < 1.1$
- ▶ Efficient, air-cooled
- ▶ Sealed package, extremely long life



For generating high peak power IR pulses of a few hundred picoseconds, microchip lasers are economical, compact, and reliable. 1064nm microjoule pulses are generated from a diode pumped passively Q-switched Nd:YAG microchip engine; the same package is used for either wavelength. The SNP series are designed for high average power, either from pulse energies of 20µJ at 1064nm, or from repetition rates up to 130kHz.

Applications

- ▶ Material processing
 - Cost effective marking solutions
 - Graphitization
- ▶ Instrumentation
 - Ranging
 - Differential absorption LIDAR
 - Super-continuum generation
 - Distributed temperature sensing
 - Raman spectroscopy
- ▶ Biophotonics
 - Nanosurgery
 - Protein cross-linking

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Technical specifications:

	SNP-08E-100	SNP-18E-100	SNP-20F-100	SNP-50F-100	SNP-130F-100
Wavelength	1064nm	1064nm	1064nm	1064nm	1064nm
Repetition Rate	>5kHz	>13kHz	>19kHz	>45kHz	>130kHz
Constant Pulse width range (FWHM) ⁽¹⁾	<1ns	>3ns	<1ns	<0.7ns	<1.4ns
Output power⁽²⁾	>40mW	>300mW	>140mW	>190mW	>200mW
Output energy	>8μJ	>18μJ	>7μJ	>4μJ	>1.5μJ
Peak Power	>8kW	N/A	>10kW	>5.5kW	>1.1kW
Short term (1min) power stability ⁽³⁾	<±1%	<±2%	<±1%	<±1%	<±1%
Long term (6 hrs) power stability⁽³⁾	<±3%	<±5%	<±3%	<±3%	<±3%
Beam profile	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00
Full angle divergence					
Horizontal@1/e²	12 ± 2 mrad	5.2±1 mrad ⁽⁶⁾	13±5mrad	17±2.5mrad	17±2.5mrad
Vertical@1/e²	14 ± 2 mrad	5.1±1 mrad ⁽⁶⁾	13±5mrad	17±2.5mrad	17±2.5mrad
M²⁽⁴⁾	<1.3	<1.3	<1.3	<1.3	<1.3
Beam ellipticity⁽⁵⁾	<1.3	<1.3	<1.3	<1.3	<1.3
Polarization	Linear PER>20dB	Elliptical ⁽⁷⁾	Linear PER>20dB	Linear PER>20dB	Linear PER>20dB
Package dimensions	115x29x36mm	145x42x36mm	145x42x36mm	145x42x36mm	145x42x36mm
Package weight	250g	300g	300g	300g	300g
Options (table p3)	None	None	F,M,S	F,M,S	F,M,S

Notes

(1)	Measured with 1Ghz photodiode and 1GHz/10GS/s oscilloscope.
(2)	Measurement performed with an OPHIR thermal power sensor (OPHIR 3A-FS-SH)
(3)	For temperature variation < ± 3°C and < 3°C/hour, stability is measured with calorimeter - detector band [DC, 2Hz]
(4)	Mean average value M = √(XY), X and Y being respectively the major and minor axis of the ellipse
(5)	Beam ellipticity is calculated as the ratio of the main axis far field divergence
(6)	Collimated beam available as an option
(7)	Linear polarization available as an option

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Complementary information & options:

Environment Parameters

Operating Temperature Range	0-50°C
Maximum Laser Head Baseplate Temperature	<50°C
Maximum Power Consumption	<40W
Laser Head Thermal Dissipation	<15W
Storage Temperature	0-50°C
Shock of 11ms according to IEC 68-2-27, non operating	25g
Vibration 5Hz to 500Hz sinusoidal according to IEC 68-2-6	2g

Certification

Laser classification according to IEC 60825-1:2007	3B
CDRH	Yes, if used with a -DR1 controller
ROHs	Yes

Options

Multimode fibering (M)	Contact factory for availability
Single mode fibering (F)	Contact factory for availability
Synchronization output (S)	TTL compatible output signal for synchronization/monitoring

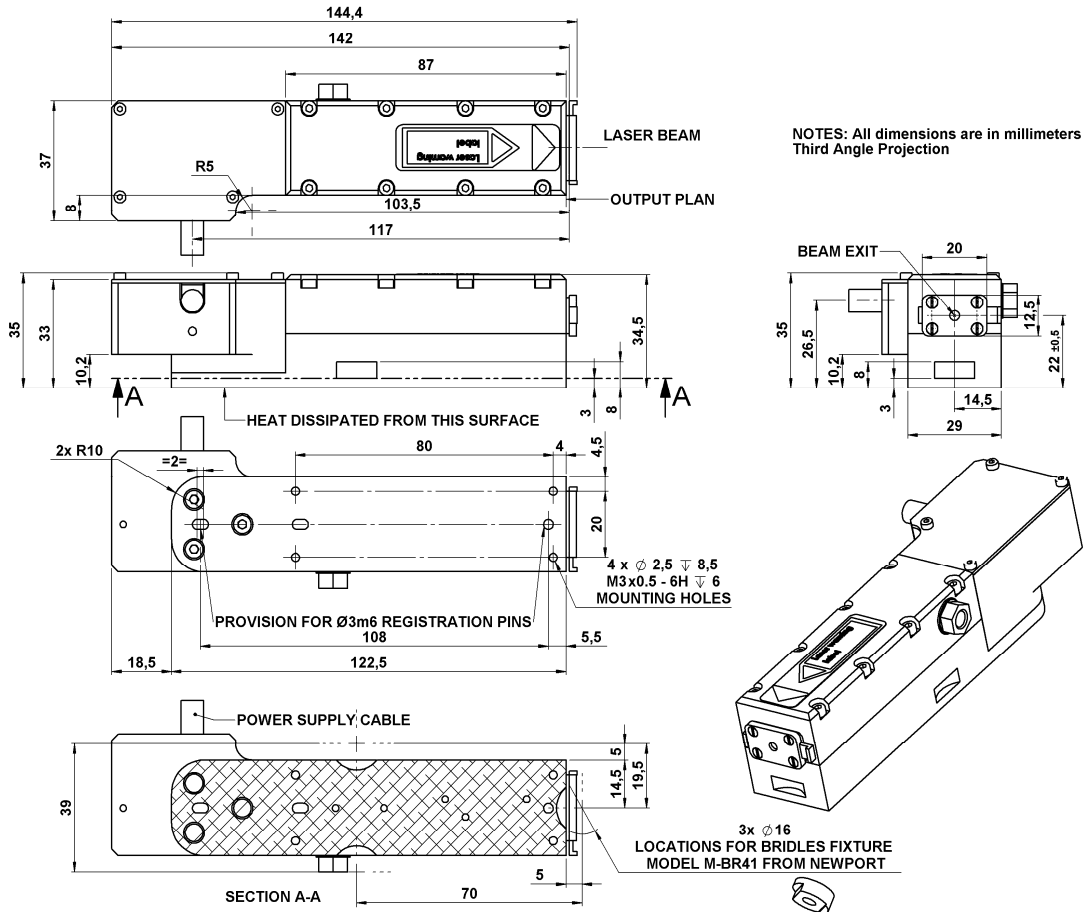
Available Controller Types

Model	Type	Input Power	CDRH
MLC-03A-DR1	Desktop	100-240 V AC	Yes
MLC-03A-MR1	Module	12 V DC	No
MLC-03A-BR1	Board	12 V DC	No

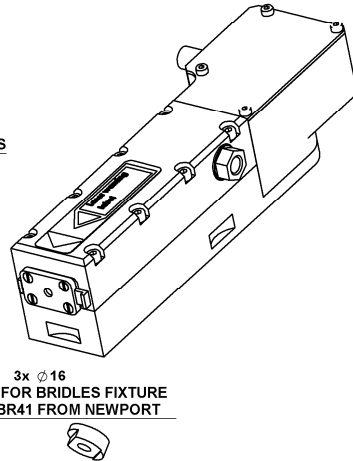
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CDRH Laser Head Mechanical Drawings : SNP-18E-100, SNP-20F-100, SNP-50F-100 and SNP-130F-100



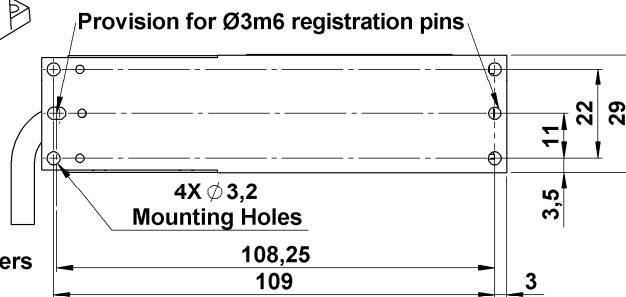
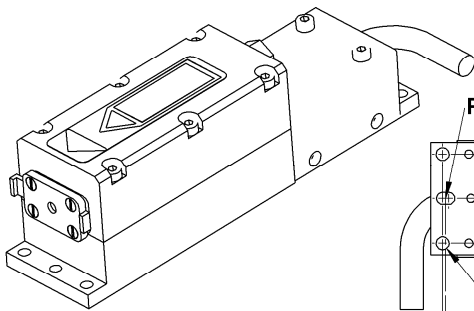
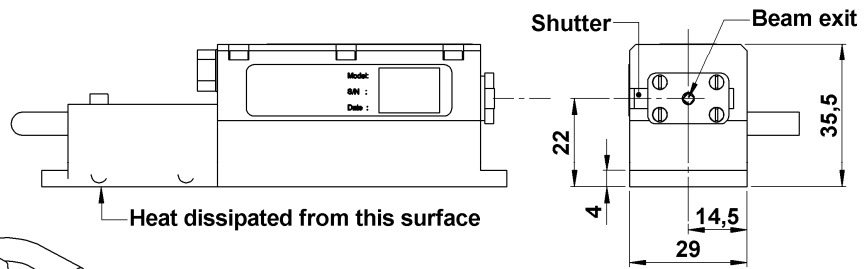
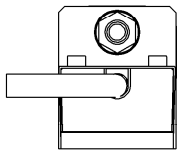
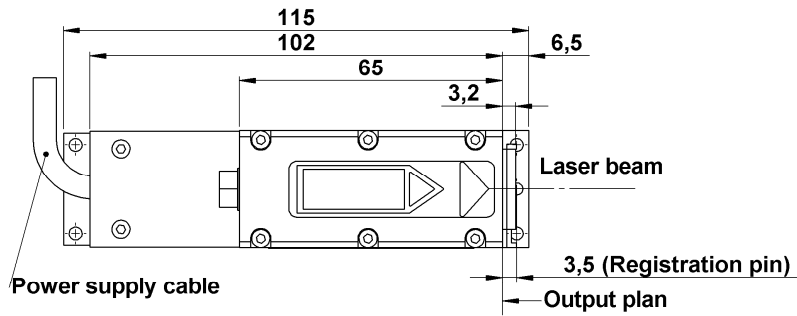
NOTES: All dimensions are in millimeters
Third Angle Projection



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CDRH Laser Head Mechanical Drawings : SNP-08E-100



Notes: All dimensions are in millimeters
Third angle projection