SNV/U High Performances UV Microchip Series

KEY FEATURES

- **355 nm and 266 nm**
- **Repetition rate up to 30 kHz**
- **Ultrashort pulses down to 550 ps**
- **Multi-kW peak power**
- **Excellent beam quality**
- **Efficient, air-cooled**
- **Sealed package, extremely long life**

For generating high peak power ultraviolet pulses of a few hundred picoseconds, microchip lasers are economical, compact, and reliable. Micro-joule UV pulses are generated by harmonic conversion of the IR passively Q-switched Nd:YAG engine. Microchips are also easy to operate and service ; controllers can be used with every laser head model and swapped within minutes while conserving constant performances. The SNV and SNU series are designed for high average power, delivering multi-kW peak power at repetition rates up to 30 kHz.

APPLICATIONS

- Semiconductor inspection
- Laser-induced fluorescence (LIF)
- Micro-dissection
- Organic compound marking and micromachining
- Biohazard detection
- Time resolved fluorescence
- Laser Induced Breakdown Spectroscopy (LIBS)
- Biophotonics

TECHNICAL SPECIFICATIONS

	SNV-05P-100	SNV-20F-100(7)	SNV-40P-100	SNV-60P-100*	SNU-02P-100	SNU-20F-100
Wavelength	355nm	355nm	355nm	355nm	266nm	266nm
Repetition Rate	>5kHz	>19kHz	>19kHz	>29kHz	>6kHz	>19kHz
Pulse duration (FWHM) (1)	<0.6ns	<0.6ns	<0.6ns	<0.6ns	<0.6ns	<0.6ns
Output power(2)	>5mW	>10mW	>40mW	>58mW	>2mW	>10mW
Output energy	>0.5µJ	>0.5µJ	>2µJ	>2µJ	>0.3µJ	>0.5µJ
Peak Power	>0.7kW	0.7kW	> 5 kW	> 5 kW	>0.5kW	>0.7kW
Short term (10min) power stability (3)	<±2%	<±2%	<±2%	<±2%	<±2%	<±2%
Long term (6 hrs) power stability(3)	<±5%	<±5%	<±5%	<±5%	<±5%	<±5%
Beam profile	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00	Gaussian TEM00	See note (5)	See note (5)
Full angle divergence Horizontal@1/e² Vertical@1/e²	8.5±2mrad 6±2mrad	11±2mrad 7±2mrad	11±2mrad 7±2mrad	11±2mrad 7±2mrad	11±2mrad <1.5mm(6)	11.5±2mrad 0.65±0.25mrad
M²(4)	<1.3	<1.3	<1.3	<1.3	<1.3	<1.4
Gaussian fit in far field	N/A	N/A	N/A	N/A	N/A	>85%
Polarization	Linear PER>20dB	Linear PER>20dB	Linear PER>20dB	Linear PER>20dB	Linear PER>20dB	Linear PER>20dB
Package dimensions	180x55x36mm	186x60x36mm	186x60x36mm	186x60x36mm	180x55x36mm	210x60x36mm
Package weight	400g	750g	750g	750g	400g	750g
Options (table p3)	C	C	C	C	C	C
Options included	-	S	S	S	-	S

*** The specifications will be confirmed after the Beta phase only. For the moment, the specifications are preliminary, which means that the final laser parameters might be different than the current specifications.**

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 exhibits different profile in horizontal (Gaussian) and vertical ((sin x /x)² in far-field) plan
(6) 5%/95% diameter, at 300mm from laser output
(7) Contact factory for availability

COMPLEMENTARY INFORMATION & OPTIONS

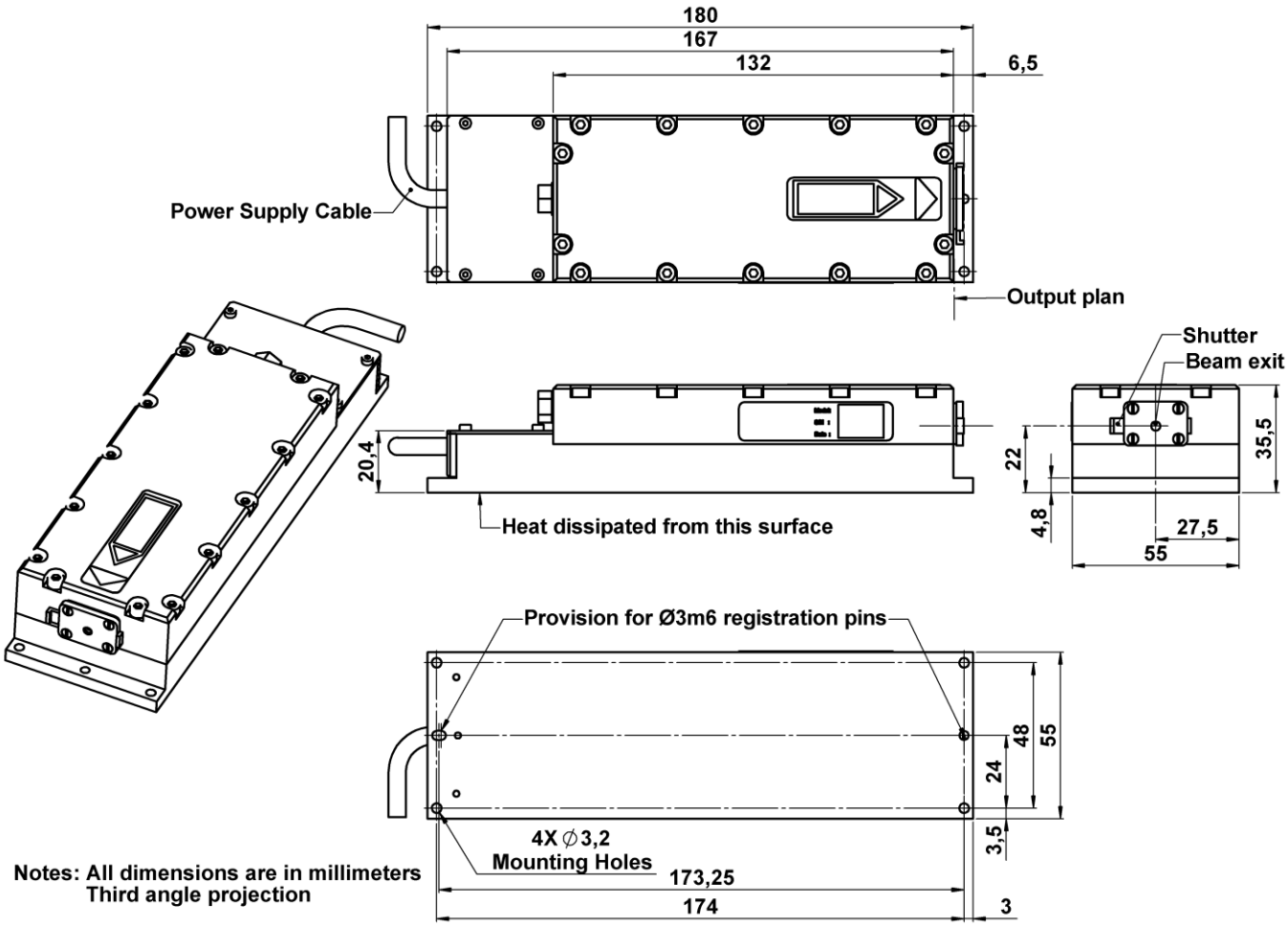
Environment Parameters	
Operating Temperature Range	15-35°C
Maximum Laser Head Baseplate Temperature	<50°C
Maximum Power Consumption	<40W
Laser Head Thermal Dissipation	<15W
Storage Temperature	0-50°C
Shock of 11ms according to IEC 68-2-27, non operating	25g
Vibration 5Hz to 500Hz sinusoidal according to IEC 68-2-6	2g

Certification	
Laser classification according to IEC 60825-1:2007	3B for SNV lasers 4 for SNU-02P and SNU-20F
CDRH	Yes, if used with a -DR1 controller
RoHS	Yes

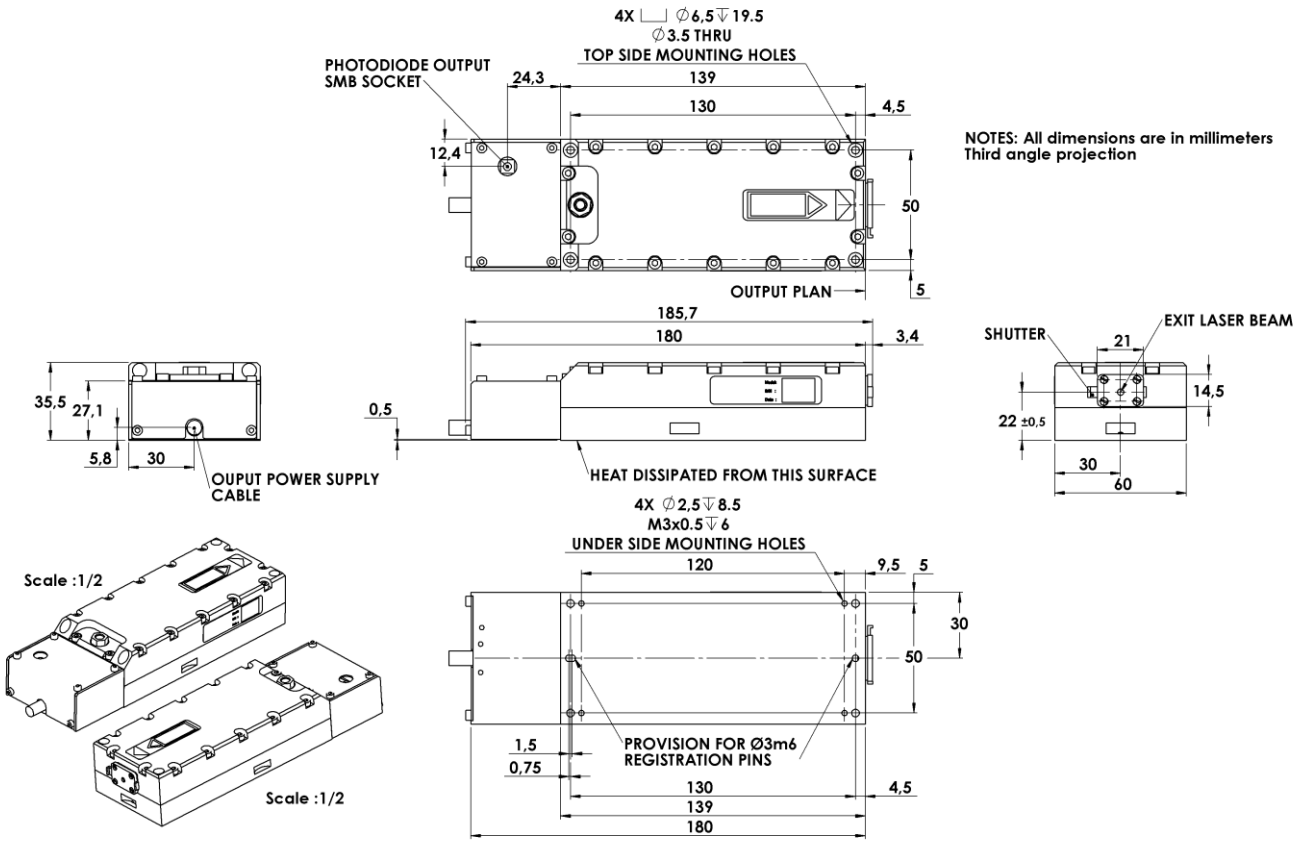
Options	
Collimation (C)	With collimated beam
Synchronization output (S)	TTL compatible output signal for synchronization/monitoring

Available Controller Types			
Controller 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

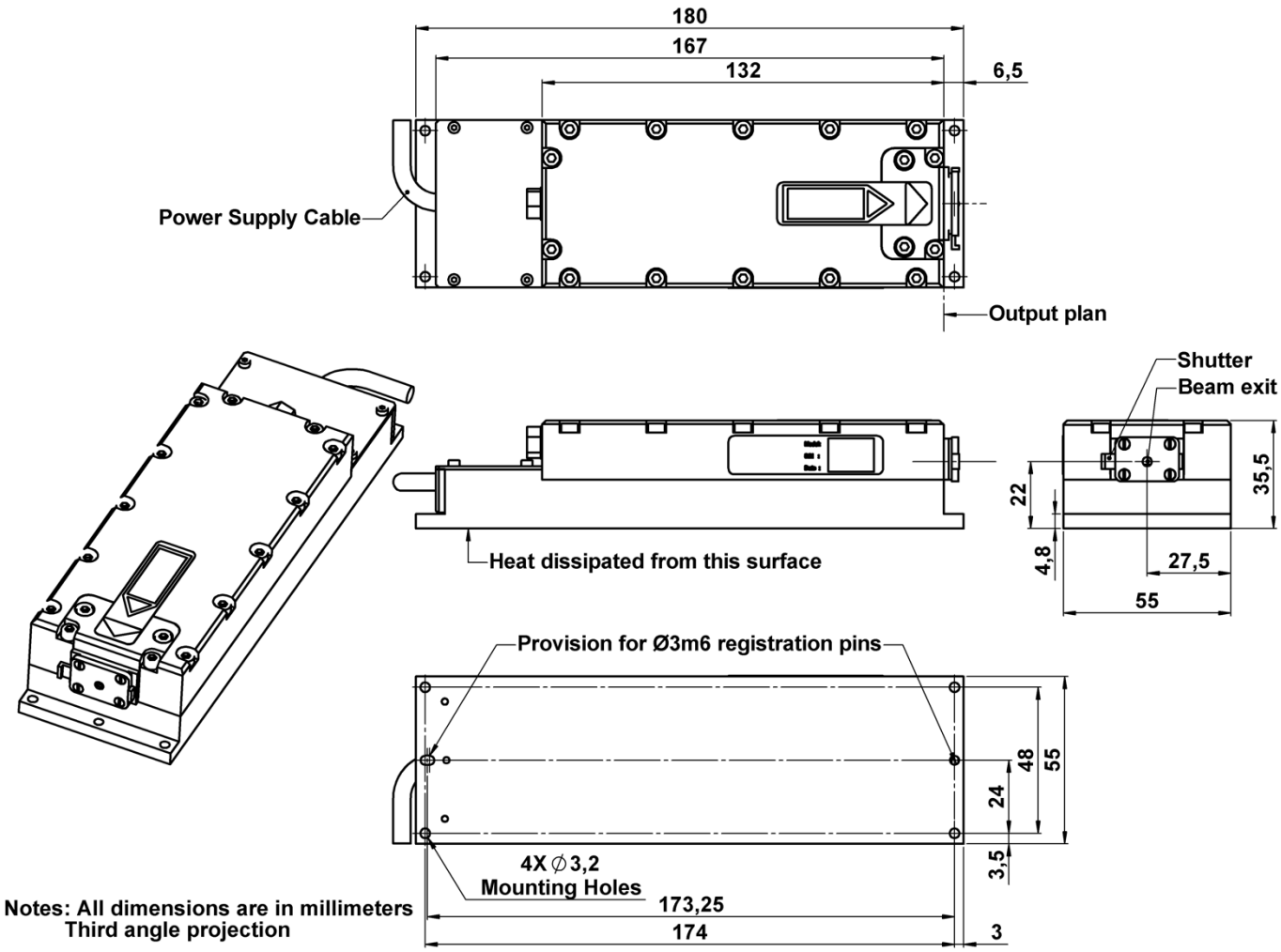
CDRH LASER HEAD MECHANICAL DRAWINGS: SNV-05P-100



CDRH LASER HEAD MECHANICAL DRAWINGS: SNV-20F-100, SNV-40P-100 & SNV-60P-100



CDRH LASER HEAD MECHANICAL DRAWINGS: SNU-02P-100



CDRH LASER HEAD MECHANICAL DRAWINGS: SNU-20F-100