

Sub-Systems Pulsed Fiber Lasers

Key Features

- Up to 10 W average power
- Up to 200 μ J per pulse
- PM version available up to 100 μ J
- Excellent beam quality
- Maintenance free operation
- OEM format
- Conductively cooled or air cooled

Applications

- Material processing
- LIDAR
- 2D/3D mapping
- DTS
- Range finding
- Weather and pollutant detection

For more Info

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LUSKENN

1.5 μ m Pulsed High Power Fiber Laser

The LUSKENN is a compact pulsed fibre laser delivering up to 30 kW peak power and up to 200 μ J per pulse in standard versions or up to 100 μ J per pulse in its polarization maintaining versions, through a collimated output beam.

The design and configuration of this laser render it unique and reliable.

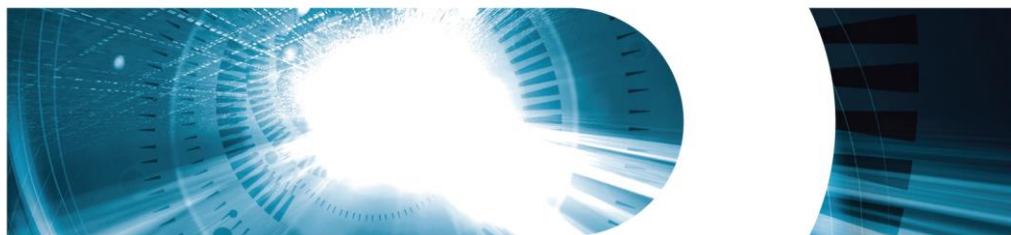
Our patented “Injection Technology” allows the use of highly reliable broad area laser diode pumps, for a cost-effective and maintenance-free operation.

The all fibre design guarantees the robustness of the laser, without any optical parts to align or to stabilize. The simple integration of the system requires no after-installation service.

The LUSKENN is the ideal solution for a broad range of industrial and scientific applications.



1.5 µm Pulsed High Power Fiber Laser



ELECTRO-OPTICAL CHARACTERISTICS

Parameters	Value			Unit
Operating mode	Pulsed			-
Central wavelength (1)	1550 ± 5			nm
OEM housing	OEM45	OEM40	OEM65	-
Average output power (max.)	7	5	10	W
Peak power	up to 17	up to 30		kW
Energy per pulse (2)	up to 85	up to 200		µJ
Output power tunability (3)	1 - 100			%
Long term stability (4)	< 1			% RMS
Pulse repetition frequency (5)	5 to 2000			kHz
Pulse duration (6)	0.5 to 250			ns
Signal linewidth (FWHM)	< 0.5			nm
Polarization *	Random or Linear	Random	Random or Linear	-
Polarization extinction ratio (PER)	> 17	N/A	> 17	dB
Output fibre length	30			cm
Output fibre termination	Collimator			-
Beam diameter (at 1/e ²)	2.2	5		mm
Beam quality	< 1.1	< 1.3		M ²
Output isolator *	Optional			-
Output monitor *	Optional			-
Control mode	ACC			-
Pulse trigger type *	Internal or TTL or LVDS			-
Storage temperature	-20 to +60			°C
Operating temperature *(7)	0 to +50			°C
Control interface	RS232			-
Operating voltage DC	12-24		24	V
Power consumption	< 70	< 50	< 150	W
Dimensions	150x150x45	180x180x40	230x178x65	mm ³
Weight	< 1.2	< 1.5	< 3.5	kg

* see the available options codification in the ORDERING **INFORMATION** section.

(1) other wavelengths available in the range 1535-1575 nm

(2) up to 100 µJ in PM version

(3) RS232 adjustment

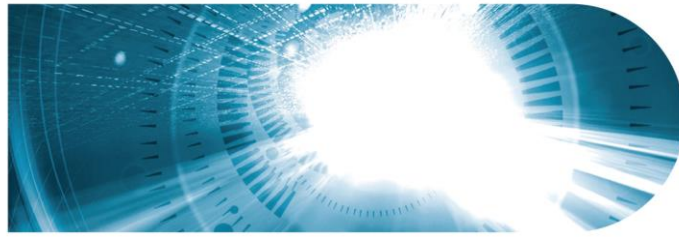
(4) over 1h@25°C, 1 sec sampling rate

(5) limited range depending on duty cycle (> 1 / 20 000)

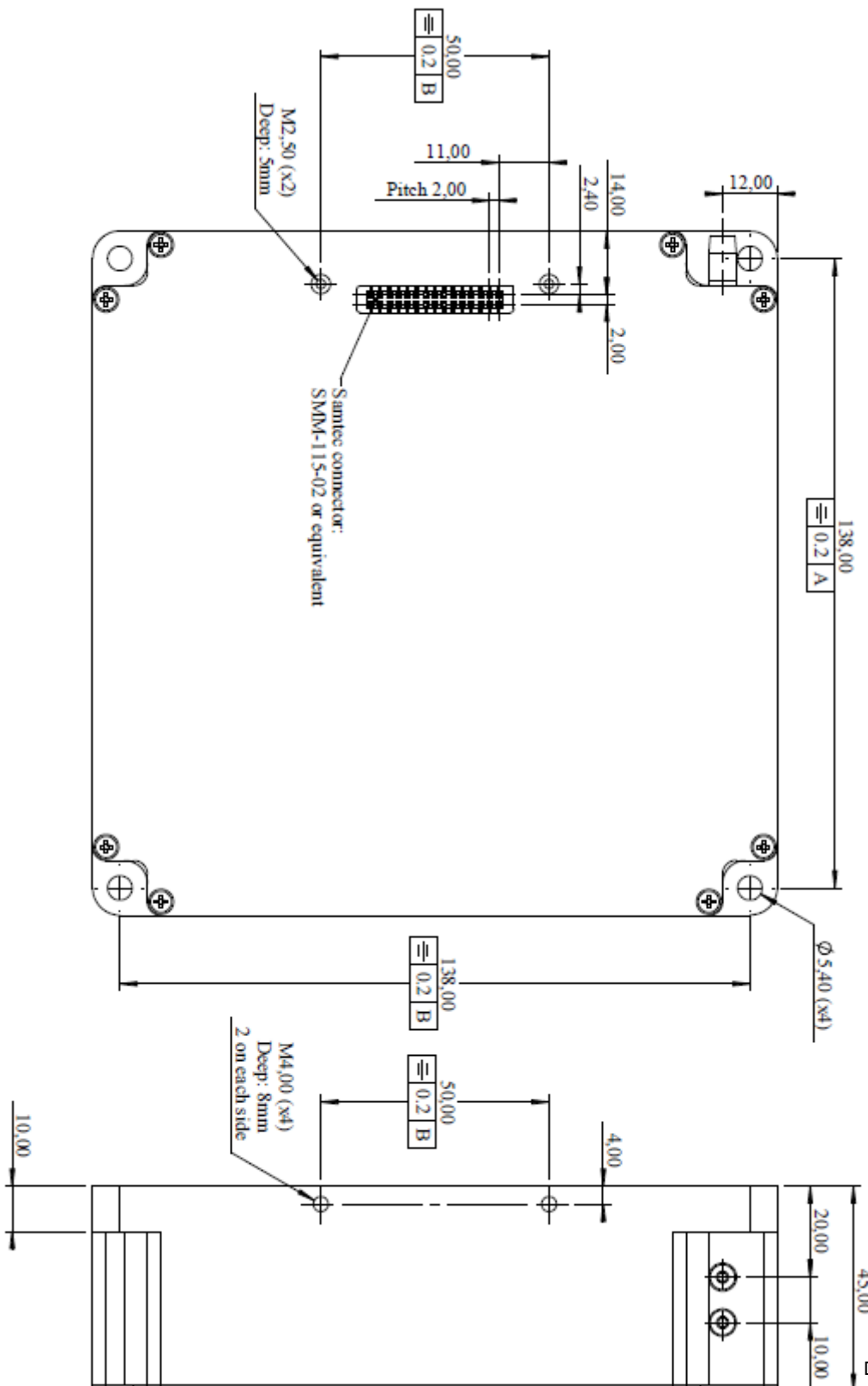
(6) fixed duration

(7) optional extended range from -35 °C to +65 °C

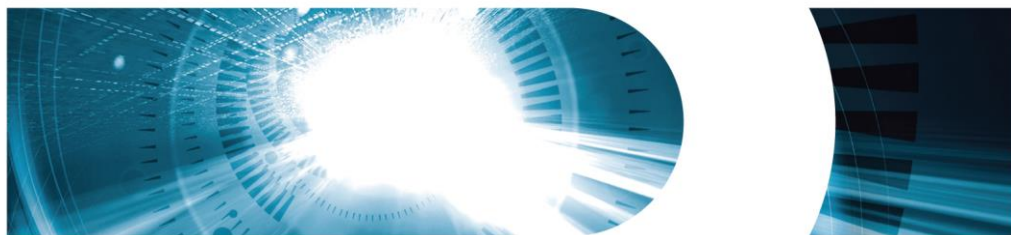
1.5 μ m Pulsed
High Power
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MECHANICAL DETAILS – OEM45



Dimensions are in mm



PIN ASSIGNMENT for OEM45 – TTL Trigger

SAMTEC SMM-115-02-S-D-30 female connector

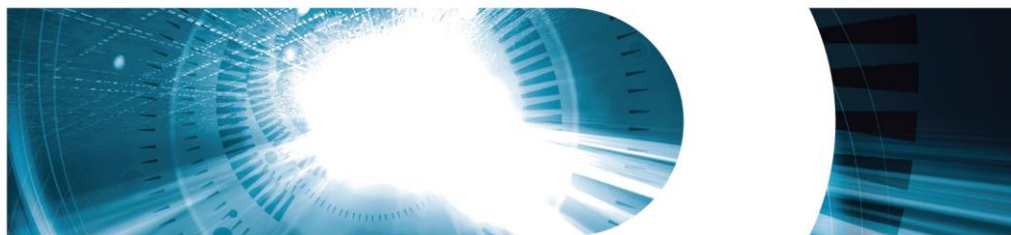
Description	Pin N°		Description
+12 V DC	2	1	+12 V DC
+12 V DC	4	3	+12 V DC
GND	6	5	GND
TX RS232 (TTL input)	8	7	RX RS232 (TTL output)
GND	10	9	GND
Reserved - do not connect	12	11	External trigger input (TTL, high impedance)
Burst input (TTL input)	14	13	Laser activation input ADI <i>TTL low : laser ON; TTL high or disconnected : laser OFF</i>
Reserved - do not connect	16	15	Unit case temperature alarm (TTL output)
Laser diodes current alarm (TTL output)	18	17	Laser temperature alarm (TTL output)
Laser operating status output (TTL output)	20	19	Trigger alarm (TTL output)
GND	22	21	GND
Reserved - do not connect	24	23	Reserved - do not connect
GND	26	25	GND
+12 V DC	28	27	+12 V DC
Void	30	29	+12 V DC

PIN ASSIGNMENT for OEM45 – LVDS Trigger

SAMTEC SMM-115-02-S-D-30 female connector

Description	Pin N°		Description
+12 V DC	2	1	+12 V DC
+12 V DC	4	3	+12 V DC
GND	6	5	GND
Reserved - do not connect	8	7	Reserved - do not connect
GND	10	9	GND
Reserved - do not connect	12	11	Reserved - do not connect
Burst input (TTL input)	14	13	Laser activation input ADI <i>TTL low : laser ON; TTL high or disconnected : laser OFF</i>
Reserved - do not connect	16	15	Unit case temperature alarm (TTL output)
Laser diodes current alarm (TTL output)	18	17	Laser temperature alarm (TTL output)
Laser operating status output (TTL output)	20	19	Trigger alarm (TTL output)
GND	22	21	GND
External trigger LVDS B	24	23	External trigger LVDS A
GND	26	25	GND
+12 V DC	28	27	+12 V DC
Void	30	29	+12 V DC

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PIN ASSIGNMENT for OEM40

MIX-BUW 17W2 connector

Pin N°	Description
A1	GND
1	External trigger input (TTL input)
2	Laser diodes current alarm (TTL output)
3	Unit case temperature alarm (TTL output)
4	Reserved - do not connect
5	Reserved - do not connect
6	Laser activation input ADI <i>TTL low : laser ON; TTL high or disconnected : laser OFF</i>
7	Laser temperature alarm (TTL output)
8	GND
9	RS232 TX
10	GND
11	RS232 RX
12	GND
13	Burst input (TTL input)
14	Trigger alarm (TTL output)
15	Laser operating status output (TTL output)
A2	+12 V DC

PIN ASSIGNMENT for OEM65

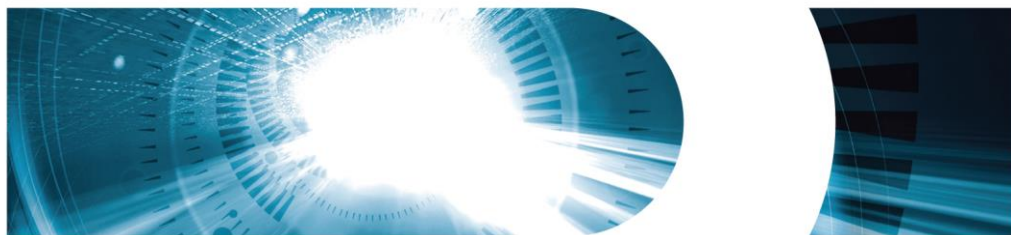
SUB-D 25 connector

Description	Pin N°	Description
GND	14 1	Reserved - do not connect
Trigger alarm (TTL output)	15 2	+24 V DC
Reserved - do not connect	16 3	+24 V DC
+5 V DC output	17 4	+24 V DC
Reserved - do not connect	18 5	+24 V DC
Burst input (TTL input)	19 6	+24 V DC
External trigger input (TTL input)	20 7	Reserved - do not connect
Laser temperature alarm (TTL output)	21 8	Reserved - do not connect
Reserved - do not connect	22 9	Reserved - do not connect
Laser activation input ADI <i>TTL low : laser ON; TTL high or disconnected : laser OFF</i>	23 10	GND
Laser operating status output (TTL output)	24 11	RS232 RX
GND	25 12	RS232 TX
		13 GND

SUB-D 2W2 connector

Description	Pin N°	Description
GND	A2 A1	+12 V DC

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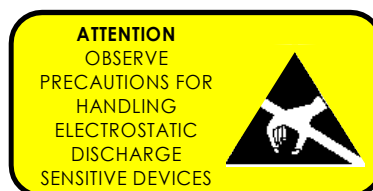


LASER SAFETY INFORMATION

This fiber laser emits invisible light. Take appropriate precautions to prevent undue exposure to naked eye when the laser is in operation. This product is classified Class 4 Laser Product according to IEC-60825-1. This laser is only intended for integration into other equipment. The system does not comply with CDRH 21 CFR 1040.10 or EN 60825-1. The customer is responsible for CDRH and/or 60825-1 compliance of their system.

HANDLING

Caution! Handle the sub-system by its package only; never hold it by its pigtail. Care should be taken to avoid supply transient currents and voltages. Drive voltage out of the specified electro-optical characteristics section may cause permanent damage to the device.



ORDERING INFORMATION

LUSKENN FIBER LASER PRODUCT FAMILY

Maximum Average Output Power	Maximum Peak Power	Part number
7 W	17 kW	MLT-PL-p-OEM45-x-y-z-i-m-b-t-1-0-g
5 W	30 kW	MLT-PL-R-OEM40-x-y-z-i-m-b-t-1-0-g
10 W	30 kW	MLT-PL-p-OEM65-x-y-z-i-m-b-t-1-0-g

p: polarization; R = random / P = linear

x: pulse duration in ns

y: pulse repetition frequency in kHz

z: energy in μJ

Available options codification:

Symbol	Description	0	1	2
i	output isolator	not installed	installed	NA
m	output monitor	not installed	installed	NA
b	burst mode	not installed	installed	NA
t	extended operating temperature range	no	T _{case} = -35 °C to +65 °C	NA
g	pulse trigger type	internal	TTL	LVDS

Other options upon request:

- Cooled seed laser
- Extended warranty
- Interface board

3SPGroup can also develop custom products to meet a wide range of technical requirements. Please contact your Sales Manager for details.

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CONTACT INFORMATION

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IMPORTANT NOTICE

Information in this document is typical and must be specifically confirmed in writing by your supplier before it becomes applicable to any order or contract.

Information is subject to change without notice.

NOTES