

Sub-Systems Pulsed Fiber Lasers

Key Features

Up to 5 W average power

Up to 100 μ J per pulse

PM version available up to 50 μ J

Excellent beam quality

Maintenance free operation

OEM format

Conductively cooled

Applications

LIDAR

2D/3D mapping

Range finding

Topography

Weather and pollutant detection

For more Info

Please contact us at:
Europe & Asia: +33 169 805 833
North America: +1 514 748 4848
+1 888 922 1044
sales@3spgroup.com

KARTENN

1.0 μ m Pulsed Fiber Laser

The KARTENN is a compact pulsed fibre laser delivering up to 5 W average output power and up to 100 μ J per pulse in standard versions or up to 50 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.

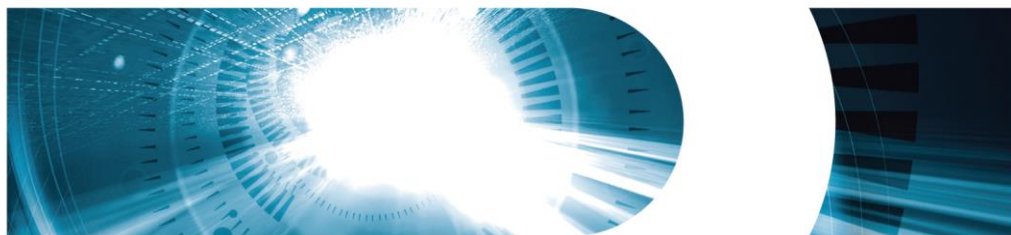
Our patented “Injection Technology” allows the use of highly reliable broad area laser diode pumps, for a cost-effective and maintenance-free operation.

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



1.0 μm Pulsed Fiber Laser



ELECTRO-OPTICAL CHARACTERISTICS

Parameters	Value		Unit
Operating mode	Pulsed		-
Central wavelength (1)	1064		nm
OEM housing	OEM20	OEM45	-
Average output power (max.)	0.1	5	W
Peak power	up to 1	up to 10	kW
Energy per pulse (2)	up to 30	up to 100	μJ
Output power tunability (3)	10 - 100		%
Long term stability (4)	< 1	< 2	% RMS
Pulse repetition frequency (5)	5 to 2000		kHz
Pulse duration (6)	0.5 to 250		ns
Signal linewidth (FWHM)	< 0.2	< 0.5	nm
Polarization *	Random or Linear (optional)		-
Polarization extinction ratio (PER)	> 20	> 17	dB
Output fibre length	50		cm
Output fibre termination	FC/APC connector	Collimator	-
Beam diameter (at $1/e^2$)	-	2.2	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		$^{\circ}\text{C}$
Operating temperature *(7)	0 to +50		$^{\circ}\text{C}$
Control interface	RS232		-
Operating voltage DC	5	12-24	V
Power consumption	< 25	< 80	W
Dimensions	108x70x20	150x150x45	mm^3
Weight	< 200	< 1.2	kg

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

(1) other wavelengths available in the range 1030-1100 nm

(2) up to 50 μJ in PM version

(3) RS232 adjustment

(4) over 1h@25 $^{\circ}\text{C}$, 1 sec sampling rate

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

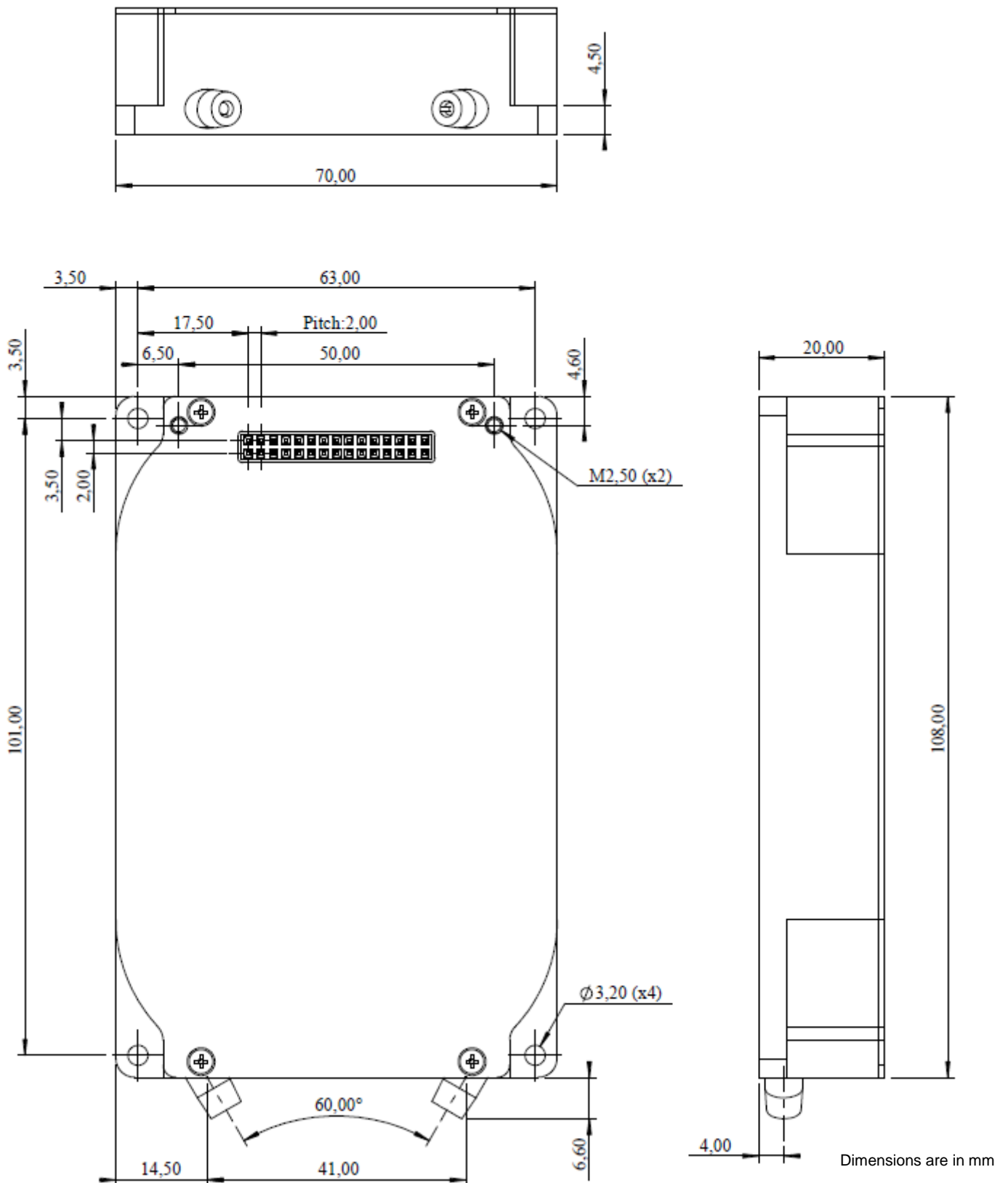
(6) fixed duration

(7) optional extended range from -35 $^{\circ}\text{C}$ to +65 $^{\circ}\text{C}$

1.0 μ m Pulsed
Fiber Laser

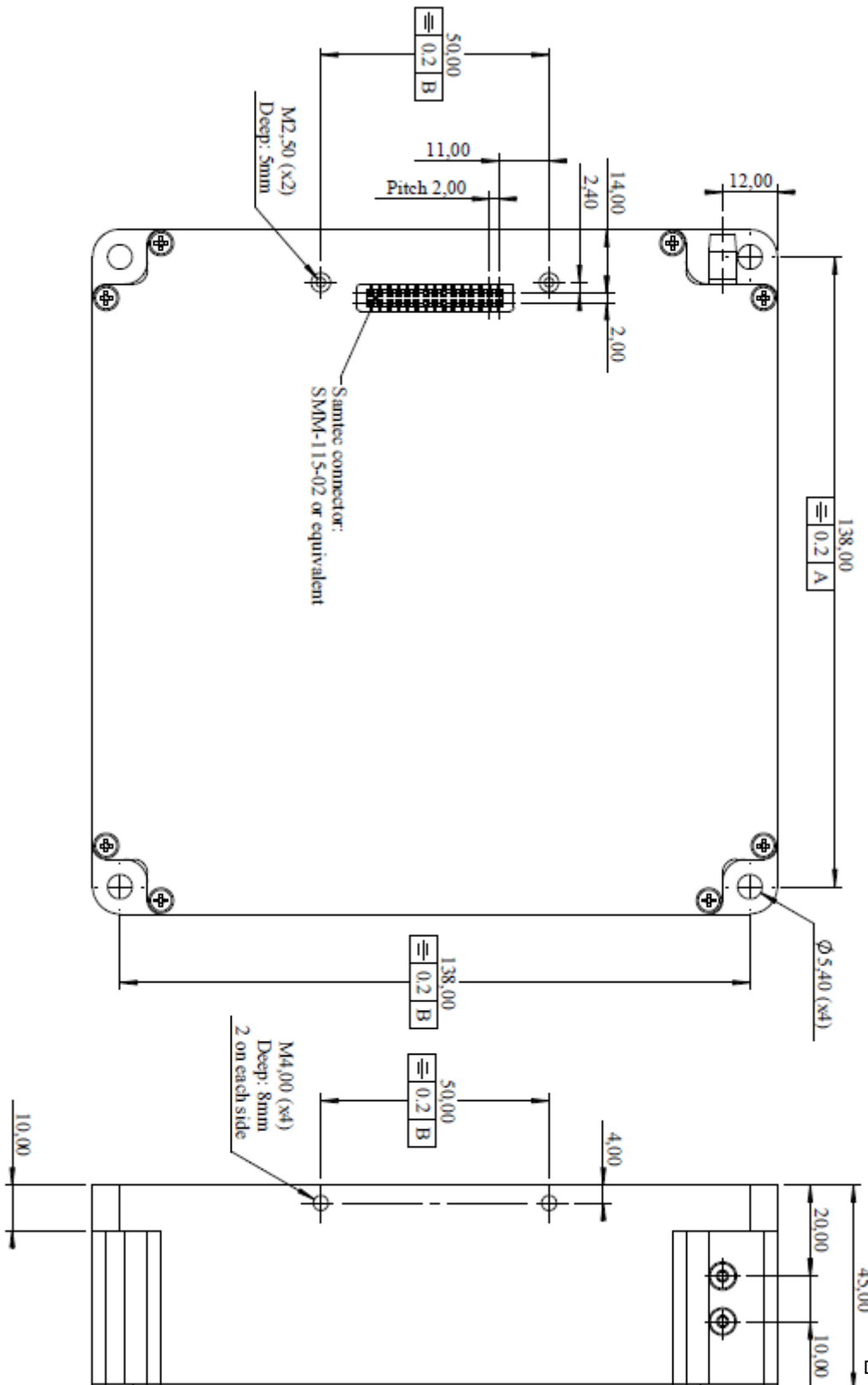


MECHANICAL DETAILS – OEM20

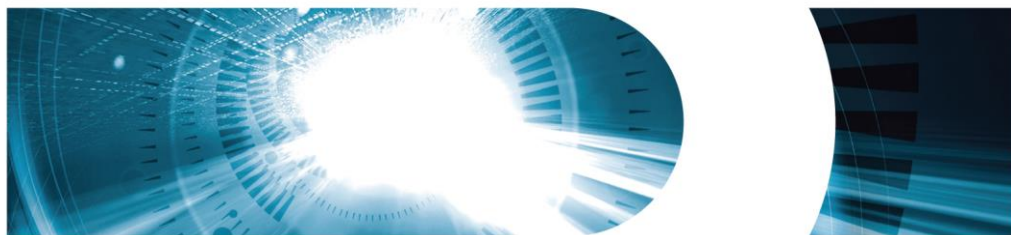




MECHANICAL DETAILS – OEM45



Dimensions are in mm



PIN ASSIGNMENT for OEM20 – TTL Trigger

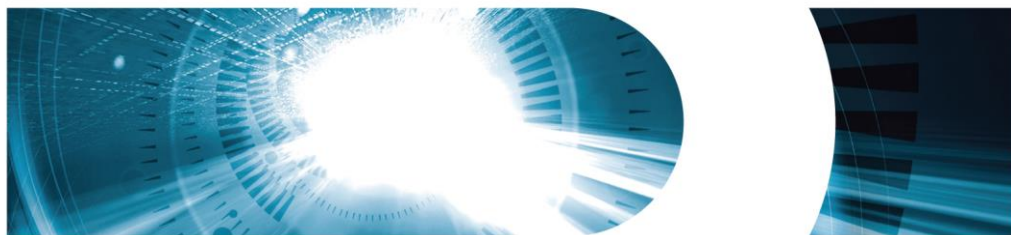
SAMTEC SMM-115-02-S-D-30 female connector

Description	Pin N°		Description
+5 V DC	2	1	+5 V DC
+5 V DC	4	3	+5 V DC
GND	6	5	GND
RS232 TX (TTL input)	8	7	RS232 RX (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</i> <i>TTL high or disconnected : laser OFF</i>
Reserved - do not connect	16	15	Reserved - do not connect
Reserved - do not connect	18	17	Reserved - do not connect
Laser operating status output (TTL output)	20	19	Reserved - do not connect
GND	22	21	GND
Reserved - do not connect	24	23	Reserved - do not connect
GND	26	25	GND
+5 V DC	28	27	+5 V DC
Void	30	29	+5 V DC

PIN ASSIGNMENT for OEM20 – LVDS Trigger

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

Description	Pin N°		Description
+5 V DC	2	1	+5 V DC
+5 V DC	4	3	+5 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</i> <i>TTL high or disconnected : laser OFF</i>
Reserved - do not connect	16	15	Reserved - do not connect
Reserved - do not connect	18	17	Reserved - do not connect
Laser operating status output (TTL output)	20	19	Reserved - do not connect
GND	22	21	GND
External trigger LVDS B	24	23	External trigger LVDS A
GND	26	25	GND
+5 V DC	28	27	+5 V DC
Void	30	29	+5 V DC



PIN ASSIGNMENT for OEM45 – TTL Trigger

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

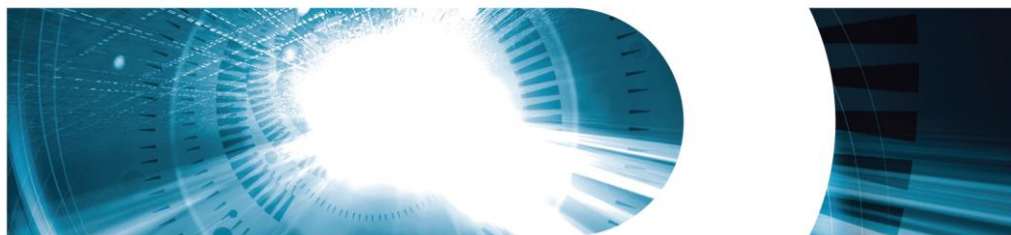
Description	Pin N°		Description
+12 V DC	2	1	+12 V DC
+12 V DC	4	3	+12 V DC
GND	6	5	GND
TX RS232 (TTL input)	8	7	RX RS232 (TTL output)
GND	10	9	GND
Reserved - do not connect	12	11	External trigger input (TTL, high impedance)
Burst input (TTL input)	14	13	Laser activation input ADI <i>TTL low : laser 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

1.0 μm Pulsed Fiber Laser



LASER SAFETY INFORMATION

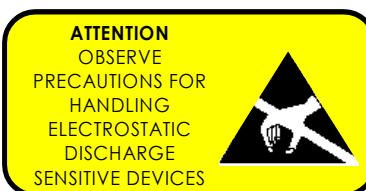
This fiber laser emits invisible light. Take appropriate precautions to prevent undue exposure to naked eye when the laser is in operation. This product is classified Class 4 Laser Product according to IEC-60825-1. This laser is only intended for integration into other equipment. The system does not 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

KARTENN FIBER LASER PRODUCT FAMILY

Maximum Average Output Power	Part number
0.1 W	MLT1-PL-p-OEM20-x-y-z-i-m-b-t-0-0-g
5.0 W	MLT1-PL-p-OEM45-x-y-z-i-m-b-t-1-0-g

p: polarization; R = random / P = linear

y: pulse repetition frequency in kHz

x: pulse duration in ns

z: energy in μJ

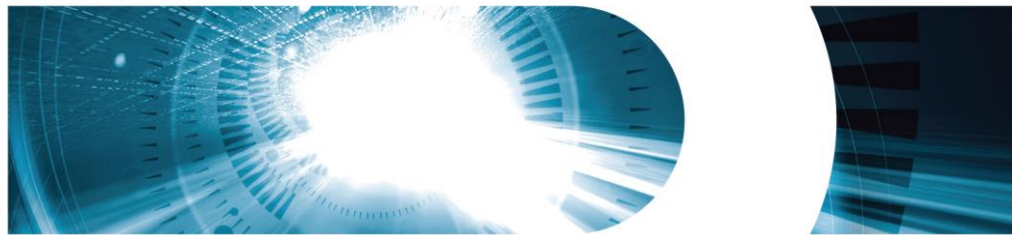
Available options codification:

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.



CONTACT INFORMATION

Europe & Asia: +33 169 805 833
North America: +1 514 748 4848
+1 888 922 1044

sales@3spgroup.com
www.3spgroup.com

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