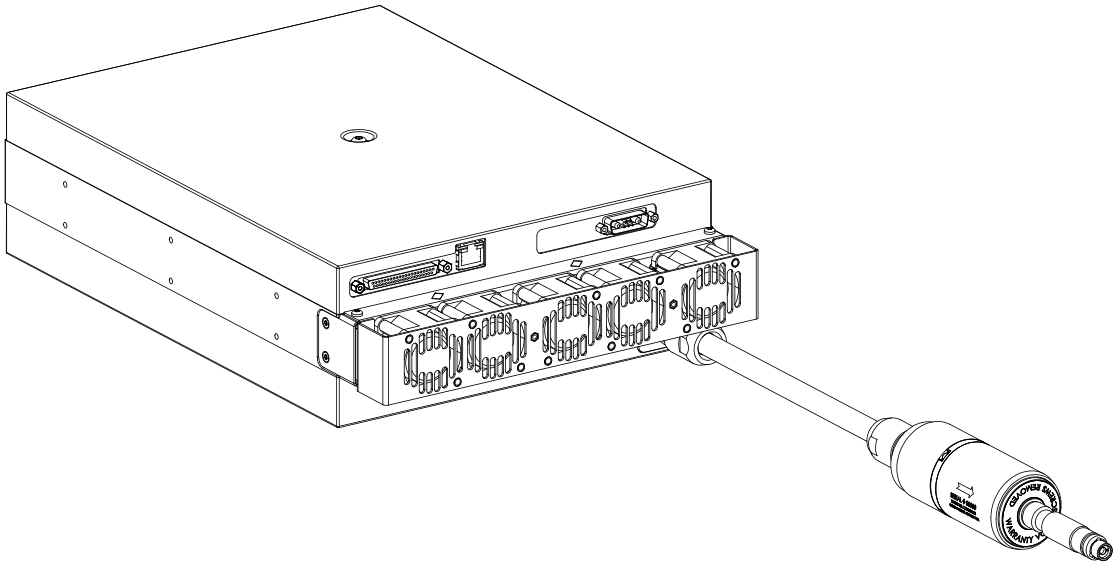
G4 Pulsed Fibre Laser Specification

Applicable Part numbers

Part number	**Options**
SP-070P-A-HS-H-B-Y	3m optical cable, with pilot laser
SP-070P-A-HS-H-C-Y	5m optical cable, with pilot laser



System Integration Details

parameter	**unit**	**range**
Laser Module type		B1
Laser Module Dimensions	mm	377 x 249 x 95
Beam delivery type		ILLK
Control interface version		V8
Power Supply Voltage	V DC	24 ± 2
Logic Power Supply Requirement	W	50
Laser Diode Power Supply Requirement	W	480
Operating temperature range	C	0 to +40
Storage temperature range	C	-10 to +60

Related Documents

Document number	**Description**
SM-S00310	OEM Safety and System Integration Manual: Module Types B1 and B2
SM-S00360	V8 Control Interface Manual
SM-S00220	G4 Accessories Datasheet

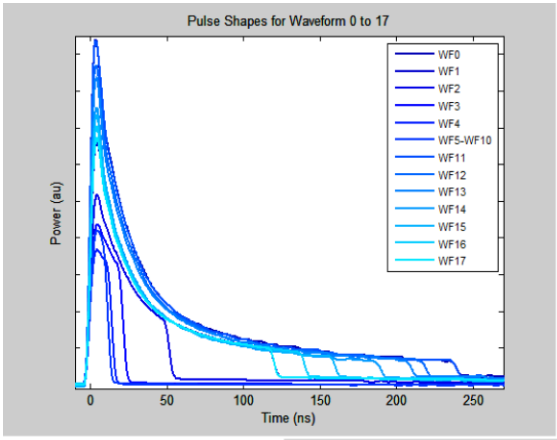
Laser Characteristics

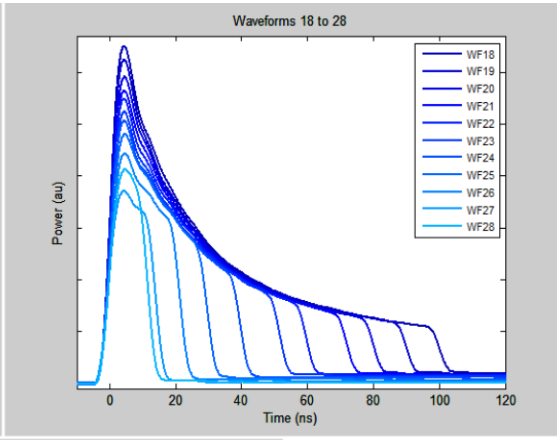
All parameters specified at wfm 0 (at PFR 0) rated power, over operating temperature range unless otherwise stated.

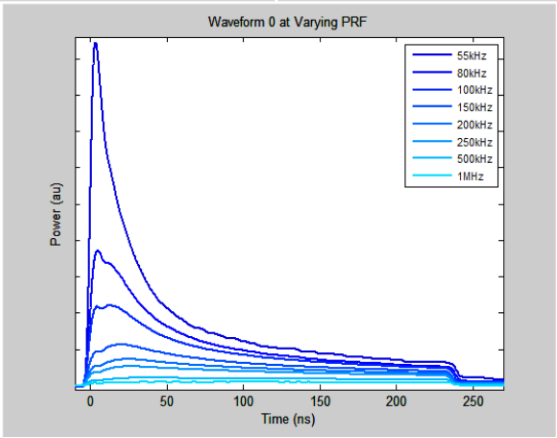
parameter	unit	range
Average Output Power	W	> 70
Output Power Stability	% p-p	< 5
Maximum Pulse Energy	mJ	> 1.25
Maximum Peak Power	kW	> 20
Pulse Width Range (see pulse waveform table)	ns	10 – 250
Pulse-to-Pulse Energy Stability (at stable temperature)	% rms	< 3
CW Mode		yes
Central Emission Wavelength	nm	1059 – 1065
Emission Bandwidth	nm	< 12
Fraction of power within λ_0 ± 20 nm	%	> 80
M^2		2.5 – 3.5
Full-angle divergence	mrad	85 – 120
Circularity	%	> 85
Beam pointing error	mrad	< 10
Beam offset	mm	< 0.1
Astigmatism	$1/z_R$	< 0.3
Degree of polarisation	%	< 20

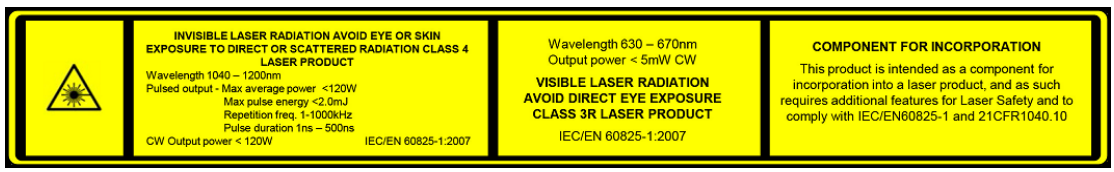
Pulse Waveform Table

wfm	PRF0 (kHz)	PRFmax (kHz)	Max. pulse energy, Emax (mJ)	Typ. FWHM pulse width at Emax (ns)	Pulse width at 10% (ns)	Typ. peak power at Emax (kW)
0	55	1000	1.27	24	250	25
1	86	1000	0.81	26	130	20
2	139	1000	0.50	27	60	17
3	266	1000	0.26	20	30	13
4	422	1000	0.17	13	20	12
5	458	1000	0.15	12	10	11
6-10	Duplicates of wfm 5					
11	55	1000	1.27	24	250	25
12	59	1000	1.19	25	230	24
13	62	1000	1.13	25	220	23
14	70	1000	1.00	24	200	22
15	75	1000	0.93	24	170	22
16	80	1000	0.88	24	150	21
17	86	1000	0.81	25	130	21
18	93	1000	0.75	25	110	20
19	99	1000	0.71	25	100	19
20	106	1000	0.66	26	90	19
21	114	1000	0.61	28	80	18
22	126	1000	0.56	28	70	17
23	139	1000	0.50	28	60	17
24	163	1000	0.43	29	50	16
25	198	1000	0.35	24	40	12
26	266	1000	0.26	20	30	13
27	422	1000	0.17	13	20	12
28	458	1000	0.15	12	15	11
29-63	Duplicates of wfm 28					


Pulse Shapes for Waveform 0 to 17
Power (au)
Time (ns)
WF0
WF1
WF2
WF3
WF4
WF5-WF10
WF11
WF12
WF13
WF14
WF15
WF16
WF17


Waveforms 18 to 28
Power (au)
Time (ns)
WF18
WF19
WF20
WF21
WF22
WF23
WF24
WF25
WF26
WF27
WF28


Waveform 0 at Varying PRF
Power (au)
Time (ns)
55kHz
80kHz
100kHz
150kHz
200kHz
250kHz
500kHz
1MHz


INVISIBLE LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS 4 LASER PRODUCT
Wavelength 1040 – 1200nm
Pulsed output - Max average power <120W
Max pulse energy <2.0mJ
Repetition freq. 1-1000kHz
Pulse duration 1ns – 500ns
CW Output power < 120W
IEC/EN 60825-1:2007
Wavelength 630 – 670nm
Output power < 5mW CW
VISIBLE LASER RADIATION AVOID DIRECT EYE EXPOSURE CLASS 3R LASER PRODUCT
IEC/EN 60825-1:2007
COMPONENT FOR INCORPORATION
This product is intended as a component for incorporation into a laser product, and as such requires additional features for Laser Safety and to comply with IEC/EN60825-1 and 21CFR1040.10