

PIB 23-06

PowerLine F 20 Varia and F 50 Varia Beam Source Update

Introduction

The PowerLine F 20 Varia and PowerLine F 50 Varia sub-systems are subject of a technical upgrade. In first place plug and play backward compatibility can be expected if all required upgrade steps are maintained.

What's New?

Please compare also with **PIB 20-19 PowerLine F Series**

- New models come with increased optical cable length (now identical with other members of the PowerLine F family), see table 1.
- Increased Range of pulse duration parameter options (now 10 values instead of 8)
- Now there is a unified pulse duration range for both, the PowerLine F 20 Varia and PowerLine F 50 Varia models

Advantages

Due to specification change of the optical cable length, less integration restrictions into large laser system enclosures apply. The homogenization of the pulse duration range allows to change between models without the necessity of repeated application verification.

Specifications

Laser Marker Model	PowerLine F 20 Varia	PowerLine F 50 Varia
P/N New Fiber Source	New: 2221621 (Old: 101130607)	New: 2221622 (Old: 131100547)
New Cable Length (free section) [m]	New: 2.6 (Old: 1.6)	New: 2.6 (Old: 1.6 m)
New Pulse Duration [ns] (Old Pulse Durations)	New: 1,5/2,5/4/8/16/30/50/120/200/350 (Old: 4/8/14*/20*/30/50/100/200)	New: 1,5/2,5/4/8/16/30/50/120/200/350 (Old: 1*/2*/4/8/16/30/50/120)
Emission Wavelength Bandwidth	New: 1055-1070 (Old: 1050-1075)	New: 1055-1070 (Old: 1050-1070)
Required VLM Version	5.3.25.302.12 (or younger)	5.3.25.302.12 (or younger)
Weight Rack Supply [kg]	New: 25 (Old:21)	New: 25 (Old:25)

Table 1: New vs. Old Features

*: In case 14 ns, 20 ns resp. 1 ns, 2 ns are requested by the system, 16 ns, 30 ns rep. 1,5 ns, 2,5 ns will be used

Pulse width τ [ns]	Pulse energy Q [μ] @ $\leq f_{nom}$	Pulse repetition rate f_p [kHz]			
		min	nom F20 Varia	nom F50 Varia	max
1,5	13	2	1400	3600	4000
2,5	22	2	870	2200	4000
4	34	2	560	1400	4000
8	67	2	280	700	3000
16	135	2	140	350	3000
30	197	2	95	240	1500
50	291	2	65	160	1500
120	503	2	34	85	500
200	940	2	20	50	500
350	940	2	20	50	200

Table 2: Overview Pulse Energy at Repetition Rates vs. selected Pulse duration

The two above mentioned tables exhibit the major changes: The pulse duration range is now extended towards 10 selectable values, the corresponding repetition rate limitations apply differently. Hereby the upper rep rate limit is significantly extended for the short pulse durations up to 4 MHz. Narrow Bandwidth applications may need manual intervention after there are differences.

Pricing

There will be no changes in list prices caused by the new module for PowerLine F 20/50 Varia sub-systems (Model Family MOD00702-XXXX). Please see also PowerLine E/F/Prime/Avia/Rapid NX – Section in Product Information Center (PIC).

Availability Timelines

Actual production is already changing to the new module type.

Service Strategy

For retrofitting old models with new models following service kits need to be used:

For the PL F 20 Varia:

2265344 PowerLine F 20 Varia - Kit Service

For the PL F 50 Varia:

2265345 PowerLine F 50 Varia - Kit Service

In addition, a software upgrade to VLM 5.3 is required.

For more information about this PIB, please contact:

Martin Roetzer

Product Line Manager

+49 8105 3965 4312

martin.roetzer@coherent.com