



PHOTONICS INDUSTRIES INTERNATIONAL, INC.

390 Central Avenue, Bohemia, NY 11716
Tel.: (631) 218-2240 Fax: (631) 2182275

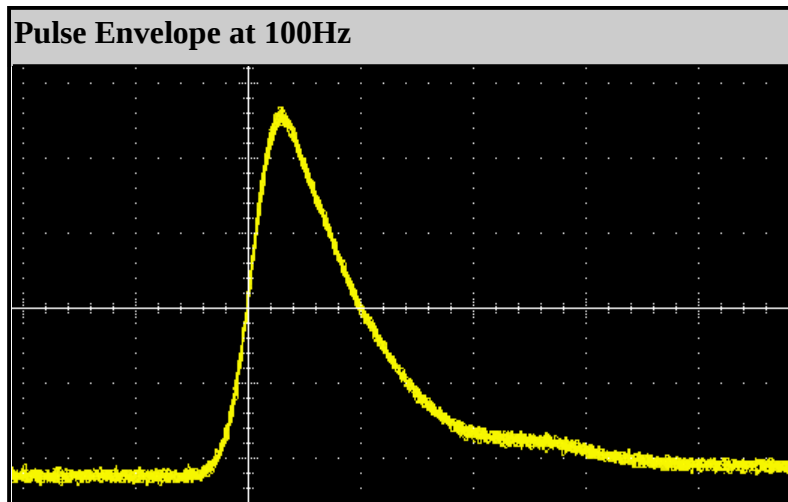
Test Data and Operational Parameters

Date: September 30th, 2013

Model Number: DP20-447

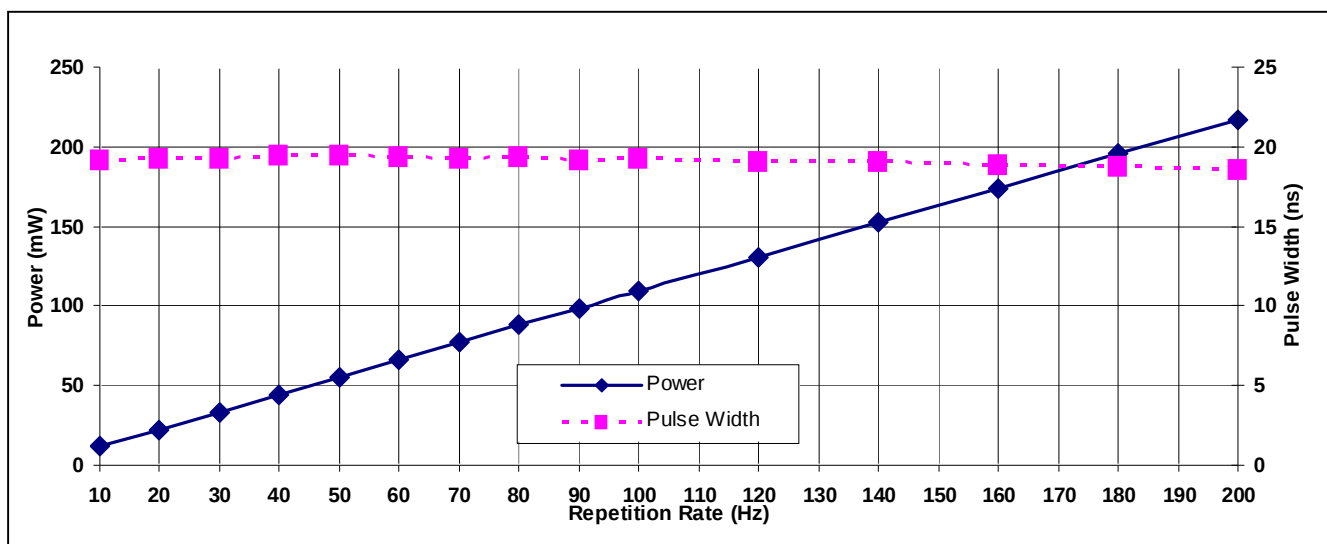
Serial Number: 12-658

Operational Parameters		
Parameter	Actual	Set Point
Operating Current (I_{op}) (A)	50.95	51.00
Chiller Temperature ($^{\circ}\text{C}$)	27.6	27.5
SHG Temperature ($^{\circ}\text{C}$)	49.9	49.8
THG Temperature ($^{\circ}\text{C}$)	49.9	49.8



Power / Pulse Data at Constant $I_{op} = 51.00\text{A}$		
P.R.F. (Hz)	Average Power (mW)	Pulse Width (ns)
10	12	19.2
20	22	19.3
30	33	19.3
40	44	19.5
50	55	19.5
60	66	19.4
70	77	19.3
80	88	19.4
90	98	19.2
100	109	19.3
120	131	19.1
140	153	19.1
160	174	18.9
180	196	18.8
200	217	18.6

Polarization Direction	Polarization Ratio	Operational P.R.F. Range	Wavelength
Vertical	>100:1	0-200Hz	447 nm





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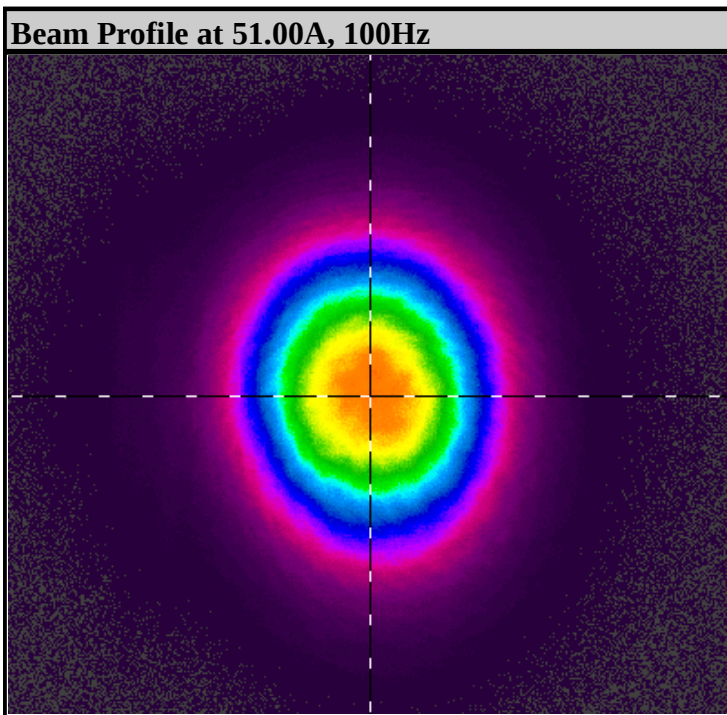
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Beam Characteristics and Stability

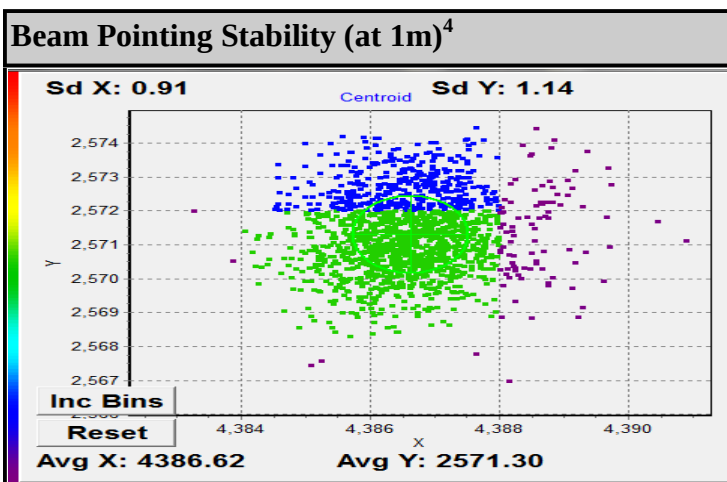
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Beam Characteristics ³ 51.00A, 100Hz	
Parameter	Measurement
Beam Diameter (at exit)	0.7 mm
Beam Diameter (at 500mm)	1.6 mm
Beam Diameter (at 1000mm)	2.7 mm
Full-Angle Far-Field Divergence	2.1 mRad
Pointing Stability (Full-Angle)	3.4 uRad
Astigmatism ¹	0.08
Asymmetry ² (at focus)	1.25
M ²	1.17



Optional Features	
☐ Pulse Energy Control	☐ Power Monitor
☐ First Pulse Suppression	☐ Twin Pulses
☐ Power Attenuator	☐ Other
☐ Beam Expander	

1. Astigmatism: A figure of merit that gauges severity of on axis astigmatism, measured as: $2 * \frac{|Z_{ox} - Z_{oy}|}{Z_{rox} - Z_{rox}}$
2. Asymmetry: Circularity of beam at focus, measured as: (Roundness)⁻¹ or the greater of $\frac{W_{ox}}{W_{oy}}$ or $\frac{W_{oy}}{W_{ox}}$
3. All Beam measurements are taken using "second moment method" or "4σ"
4. Standard Deviations in X and Y directions are listed in microns

Long Term Stability	Pulse-Pulse Stability	Warm-Up Time (standby)	Warm-Up Time (Cold Start)
< 3%	1.4% RMS	< 2 minutes	< 5 minutes

Inspector (Print): Rajendra Gurdial

Signature (Sign): _____



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Pulse Characteristics at 51.00 A					
PRF (Hz)	Pulse Width (ns)	Pulse Width Stability (%)	Pulse Jitter (ns)	Pulse Intensity (mJ)	Pulse Intensity Stability (%)
10	19.2	1.3	1.0	1.2	0.4
20	19.3	1.6	1.0	1.1	0.4
30	19.3	1.6	1.3	1.1	0.4
40	19.5	1.5	1.2	1.1	0.4
50	19.5	1.3	1.1	1.1	0.4
60	19.4	1.3	1.2	1.1	0.4
70	19.3	1.3	1.1	1.1	0.4
80	19.4	1.6	1.2	1.1	0.4
90	19.2	1.5	1.4	1.1	0.4
100	19.3	1.4	1.3	1.1	0.4
120	19.1	1.2	1.4	1.1	0.4
140	19.1	1.5	1.6	1.1	0.4
160	18.9	1.4	1.6	1.1	0.4
180	18.8	1.4	1.6	1.1	0.4
200	18.6	1.4	1.7	1.1	0.4

Inspector (Print): Rajendra Gurdyal

Signature (Sign): _____



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Pulse Characteristics at constant 100Hz PRF	
Current (A)	Power (mW)
51	109
49	106
47	104
45	103
43	101
41	99
39	96
37	92
35	88
33	83
31	78
29	72
27	65
25	58
23	50
21	41
19	32
17	24
15	16
13	9