

TruPulse 2007 nano

Edmund Part:
18308



Edmund
optics worldwide



Greater
flexibility



Superior
quality



Increased
productivity



Improved
profitability

+ Applications

- Ablation
- Engraving
- Precision Cutting
- Thin Film Patterning
- Cleaning
- Marking
- Scribing
- Thin Film Cutting
- Drilling
- Micro-Machining
- Solar Cell Processing
- Welding

TruPulse 2007 nano is ideal for:

- 01** High quality cutting & drilling
With higher power & pulse energy



- Cutting metal foils up to 0.8mm
- Drilling holes down to 80µm
- Reflective metal processing

- 02** High speed engraving
With peak power $\geq 10\text{kW}$



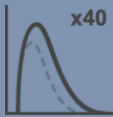
- Engraving Metals
- Surface texturing

- 03** High quality welding
With pulse energy 1.2mJ



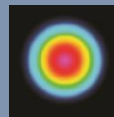
- Foils up to 0.4mm
- Dissimilar metals

TRUMPF



PulseTune Functionality (EP Series)

- Up to 48 optimized PulseTune waveforms
- Single shot to 4 MHz pulse repetition frequency



Beam Quality (Z Type M² ≤1.6)

- Higher peak power and pulse energy with only minor increase in spot size and good depth of focus

+ Laser Characteristics

Parameters		
Central emission wavelength	nm	1059 – 1065
Nominal average output power	W	70 (adjustable 0-100%)
M²		≤1.6 (1.3 typical)
Collimated beam diameter	mm	7.5 standard (other collimators available)
PulseTune waveforms		48
Maximum pulse energy	mJ	>1.2 (3%rms stability)
Maximum peak power	kW	≥10 (13 typical)
Pulse duration range	ns	3 – 2000 (see waveform table)
Pulse repetition frequency (PRF) range	kHz	1 – 4000 (see waveform table)
CW mode (with modulation)	kHz	YES (1 - 100)
Red alignment laser mode	mW	0.3

+ System Integration Details

Parameters		
Cooling		Air
Beam delivery cable length	m	3
Laser module dimensions	mm	377 x 249 x 95
Power supply voltage	V DC	24± 2
Power supply requirement	W	530
Operating temperature range	°C	0 to +40
Relative humidity range		5-95% RH (non-condensing)

Terms and Conditions

All product information is believed to be accurate and subject to change without notice. A complete product specification will be issued on request and also at time of order acknowledgement. The user assumes all risks and liability whatsoever in connection with the use of the product and its application. These lasers are designed as products for incorporation or integration into other equipment.

INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION
CLASS 4 LASER DEVICE

Wavelength: 1040 – 1200 nm
Pulsed output - Max average power < 60W
Max pulse energy < 2.0mJ
Repetition freq. 1–1000kHz
Pulse duration 1ns – 500ns
CW Output power < 60W
IEC EN 60825-1:2014

Component for Incorporation
This device 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 EN 60825-1 and
21CFR1040.10

VISIBLE LASER RADIATION
AVOID DIRECT EYE EXPOSURE
CLASS 3R LASER DEVICE
(ALIGNMENT PURPOSES ONLY)

Wavelength 630-670nm
OUTPUT < 5mW CW
IEC EN 60825-1:2014

+ Edmund Part: 18308

Parameters	Description	
Laser		TruPulse 2007 nano (FK10-EP)
Collimator		F75 removable beam expanding collimator without flange
Break-out-board		G4 Break-out board
RS232 Cable		9 pin to 9 pin RS232 Cable
Control Cable		I/O Control Cable
Power Supply Cable		Standard 24VDC Power Supply Cable

***Edmund Part does not include a power supply**

To learn more about our TruPulse nano Fiber Laser products visit our website: www.trumpf.com/s/trupulse-nano

Pulse Waveform Table (SP / TP-070P-A-EP-Z-[BF]-Y)

Waveform	PRF ₀ (kHz)	PRF _{max} (kHz)	Max. pulse energy, E _{max} (mJ)	Typ. FWHM pulse duration at E _{max} (ns)	Pulse duration at 10% (ns)	Typ. peak power at E _{max} (kW)
0	70	1000	1.00	46	240	13
1	88	1000	0.80	45	220	10
2	95	1000	0.74	42	200	10
3	102	1100	0.69	40	175	10
4	105	1300	0.67	38	160	11
5	112	1400	0.63	40	145	10
6	119	1600	0.59	35	130	11
7	126	1700	0.56	33	120	11
8	130	1800	0.54	32	115	11
9	137	2080	0.51	35	105	10
10	144	2170	0.49	30	100	10
11	151	2500	0.46	36	90	10
12	158	2940	0.44	37	80	11
13	168	3125	0.42	26	65	10
14	179	3333	0.39	33	58	10
15	189	3570	0.37	27	60	10
16	200	4166	0.35	34	55	10
17	214	4166	0.33	34	50	10
18	228	4166	0.31	33	45	10
19	245	4166	0.29	32	40	10
20	266	4166	0.26	26	36	10
21	291	4166	0.24	26	33	10
22	315	4166	0.22	25	30	10
23	350	4166	0.20	23	26	10
24	403	4166	0.17	19	23	9
25	490	4166	0.14	16	20	9
26	600	4166	0.12	13	16	9
27	850	4166	0.08	9	10	8
28	1000	4166	0.07	8	10	7
29	70	900	1.00	72	270	8
30	70	800	1.00	75	295	8
31	70	600	1.00	85	320	7
32	70	600	1.00	90	350	7
33	70	600	1.00	95	380	6
34	70	600	1.00	100	420	6
35	70	500	1.00	110	470	6
36	70	500	1.00	115	500	5
37 - 52	Not specified					
53	1300	4166	0.06	5	8	11
54	1800	4166	0.04	4	6	11
55	2631	4166	0.03	3	5	9
56	60	415	1.2	20	620	13
57	60	310	1.2	20	820	12
58	60	250	1.2	25	1020	10
59	60	205	1.2	30	1220	8
60	60	175	1.2	30	1420	7
61	60	155	1.2	40	1620	6
62	60	135	1.2	40	1820	6
63	60	125	1.2	40	2020	5

Note: The laser operates at discrete pulse repetition frequencies (PRF) associated with multiple integer clock cycles. The resulting difference between "permissible" frequencies may become noticeable above 2 MHz. Frequencies at which the laser will operate above 2 MHz are: 2.000, 2.082, 2.173, 2.272, 2.380, 2.500, 2.631, 2.777, 2.941, 3.125, 3.333, 3.571, 3.846 and 4.166 MHz. In software mode (internal trigger) the laser will automatically round to the next frequency up if the demanded PRF is not one of these discrete values. For example, if the demanded frequency is 3.2 MHz, the laser will operate at 3.333 MHz, not 3.125 MHz. In hardware mode (external trigger) the laser will jitter between the two permissible frequencies above and below the demanded PRF. The 'Laser_Has_Pulsed' monitor signal is available only for waveforms where PRF_{max} ≤ 1 MHz.

Pulsed Fiber Laser Specification

Pulse Waveform Shapes (SP / TP-070P-A-EP-Z-[BF]-Y)

