

dst11-t192-series diode laser system

integrated fiber coupled laser diodes with lasers up to 50W cw optical output power

The product series dst11-t192 combines the features and reliability of our Laser sources and TEC controllers with diode laser modules to a turn key laser source. It is powered by standard line voltages of 110~230VAC. In standard configuration the optical power output is located at the back panel. The optical power could be chosen up to 50W. The lasers are air cooled with stabilised temperature control. Multiple and redundant laser protection features are incorporated.

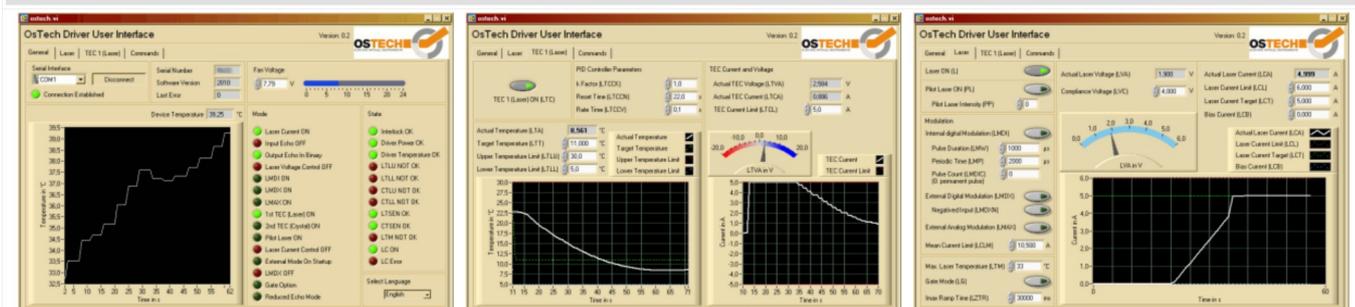
As user interface we provide the front panel display, RS232 and an isolated industrial interface. The following modes are available: cw-mode, external analogue modulation, external digital modulation, internal modulation, internally generated pulses and pulse bursts, externally triggered internal pulses and bursts. Typical rise time is about 25µs, shorter rise times on request.

It is possible to provide your own laser diode to OsTech for integration. Otherwise we choose the best suited laser for your application.

Any questions or requests are welcome to be discussed with our engineers.



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PC-LabView interface for remote control. The list of serial commands you find here: "<http://www.ostech.de/en/downloads/manuals/ds-en.pdf>"

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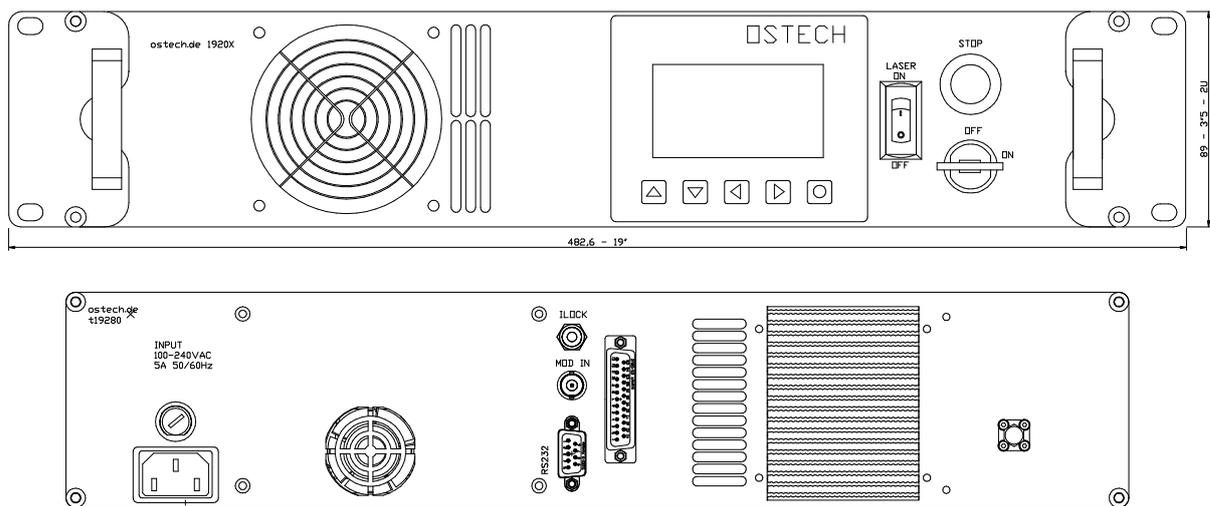
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Features:

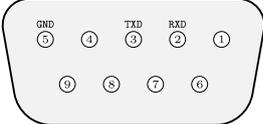
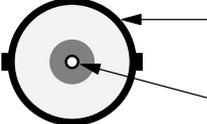
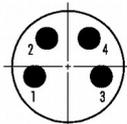
- up to 45W cw optical output power (typical qcw power up to 120W or more)
- housing 19" rack mount, 2HU, depth 260mm- 11"-with no plugs
- input 110V-240V AC
- typical optical output - SMA fiber receptacle, NA 0.22, fiber core diameter 100µm - 600µm, others on request
- key switch, emergency stop, Interlock and LaserOn signal
- operation modes: cw, internal digital modulation, external analog or digital Modulation, pulse or pulse burst mode internally or externally triggered
- rise/fall-time ~ 25µsec
- active TEC cooling of laser device
- front panel display with touch keys
- RS232-Interface, control software and labview VI is provided for download
- isolated industrial interface, SystemOk and LaserOn-Output, LaserOn-and modulation input
- various protection features for safety of the laser diode

Options:

- dual wavelength
- USB or Ethernet
- low noise optical output
- short rise- / fall-time (1..10µs)
- pilot-laser if available on laser
- optical power monitor
- fiber detection sensor, depending on laser diode
- metal armoured fiber cable, variable length
- laser diode provided from customer



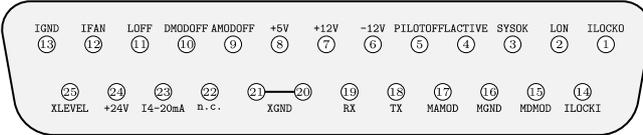
19" 2HU, 260mm depth, air cooled

RS232 Connector	AMOD/DMOD Connector	Interlock Connector
 <p>SubD-9, female</p>	 <p>BNC</p>	 <p>M8-round connector Binder Sensor series 768 · 718 ordering# 09-3391-00-04 fits with ordering# 99-3376-00-04</p>
Standard RS232-Connector connected to PC 9600-Baud-8N1(No Null-Modem Cable !)	Input-Impdanz 10kOhm Digital Modulation with TTL-Pegel Analog Modulation 0-4[V] => 0-I _{max} [A]	2 circuit Interlock - Laser runs only if both circuits are closed IL1+Pin1, IL1-Pin2, IL2+Pin3, IL2-Pin4

Laser data

Laser Module Type	Laser Modules from Jenoptik, Dilas, Lumics, Oclaro and others asRequested by the customer
Optical Output Power	10W - 45W
Wavelength	808nm / 880nm / 915nm / 938nm / 976nm / 1064nm (others on request)
Fiber Core Diameter, Numerical Aperture	105µm, NA (0.15) 0.22 / 200 µm, NA 0.22 / 400 µm, NA 0.22 / 600 µm, NA 0.22
Fiber Connector	F-SMA 905, potential free, (others on request)
Diode Laser Operating Temperature	Diode Laser Operating Temperature 15 ... 30 °C, measured with internal temperature sensor

Support Connector - Isolated Industrial Interface - 2nd version



SubD-25 female

PIN.No	Abbr.		Function
1	ILOCKO	out	Output Interlock Output max. 12V 10mA (connect to pin14) to close Interlock
2	LON	out	Output Laser On - High = Laser is in On State ¹⁾
3	SYSOK	out	Output System Ok - High = System OK - Laser Ready for Operation ¹⁾
4	LACTIVE	out	Output Laser Active - High = Laser Is Emitting ¹⁾
5	PILOTOFF	in	If your Laser has a pointer device it's switched ON when - LOW ³⁾
6	-12V	sup	Supply Output -12V max. 250mA for free usage ²⁾
7	+12V	sup	Supply Output +12V max. 250mA for free usage ²⁾
8	+5V	sup	Supply Output +5V±1% max. 250mA for free usage ²⁾
9	AMODOFF	in	Input if LOW = xternal analogue modulation is ON (is changable) ³⁾
10	DMODOFF	in	Input if LOW = xternal digital modulation is ON (is changable) ³⁾
11	LOFF	in	Input Laser-OFF - Low = Laser is ON ³⁾
12	IFAN	sup	optioinal (Fan) Supply - 2V..22V up to 1A for external Fan vs. IGND ⁷⁾
13	IGND	sup	optional internal GND ⁷⁾
14	ILOCKI	in	Interlock Input - has to be connected to ILOCKO (PIN1) to close Interlock
15	MDMOD	in	Input Digital Modulation ⁴⁾
16	MGND	sup	Modulation GND
17	MAMOD	in	Input Analog Modulation ^{4) 5)}
18	TX	in	RS232-Tx ²⁾
19	RX	out	RS232-Rx ²⁾
20,21	XGND	sup	Xternal GND
22	n.c.		
23	I4-20mA	in	Additional 4..20mA Analogue Modulation Input vs. IGND ⁷⁾
24	+24V	sup	Supply Output +24V max. 80mA for free usage ²⁾
25	XLEVEL	in	Input for Logical Output Level ⁶⁾

¹⁾ Logic Output, High Level = XLEVEL (default =5V), LOW Level < 1V, see ⁶⁾

²⁾ vs. XGND

³⁾ Input internally pulled-up, Input is tolerant up to 24V for High-level

⁴⁾ vs. MGND

⁵⁾ 0-4V → 0A-Imax (Ri=10kOhm, for a 0-10V input signal put 15kOhm in series)

⁶⁾ XLEVEL is default 5V = TTL-Level, to change Output High level to 12V connect XLEVEL to +12V or to change Output High level to 24V connect XLEVEL to +24V

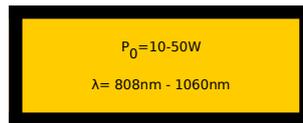
⁷⁾ vs. IGND Signals are NOT! isolated! Take care!

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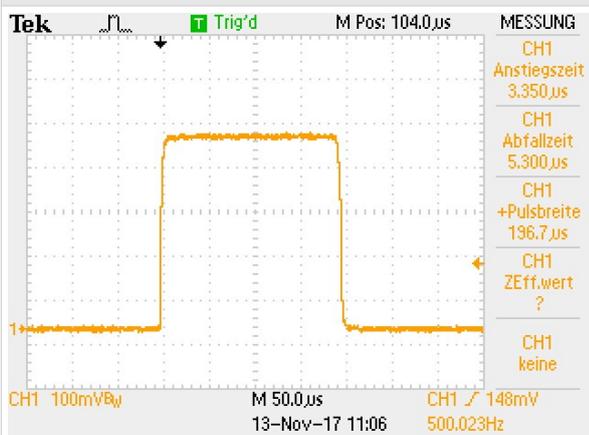
Some Configuration Examples

Type	Device Name	Laser Assembled
455	dst11-JOLD-30W-808nm-200μ-NA0.22-t19280-v0-455	JOLD-30-FC
473	dst11-JOLD-30W-808nm-400μ-NA0.22-FCM-19280-v0-473	JOLD-30-FCM
456	dst11-JOLD-45W-808nm-400μ-NA0.22-t19280-v0-456	JOLD-45-FC
469	dst11-DILAS-14W-1064nm-MF-Serie-t19280-v0-469	M1F1S22-1064.10-14C-T25-ss2.1
700	dst11-DILAS-30W-808nm-400μ-NA0.22-SMA-t19286-700	M1F4S22-808.5-30C-SS5.2
707	dst11-DILAS-40W-808nm-400μ-0.22NA-t19286-707	M1F2S22-807.1-40C-SS2.6T302
750	dst11-DILAS-40W-808nm-200μ-0.22NA-t19286-750	M1F2S22-807.1-40C-SS2.6T302
503	dst11-DILAS-50W-808nm-400μ-0.22NA-t19286-503	M1F4S22-808.5-50C-SS5.2
751	dst11-LUMICS-10W-793nm-105μ-0.22NA-t192xx-755	LuOcean Mini4 LU0793D100-U
491	dst11-LUMICS-50W-976nm-400μm-0.22NA-t19285-491	LU0976D500 cw-30W, pulse-50W-5μs
703	dst11-QPC-17W-1470nm-400μ-NA0.22-t19286-703	QPC Brightlase Ultra-50 Medica
715	dst11-REALLIGHT-4W-808nm-62.5μ-0.22NA-HHL-t19286-715	Reallight-R808±3-4WF-09HHL-T-713
755	dst11-LUMENTUM-10W-976nm-105μ-0.22NA-t192xx-751	L4-9897603-100B

Laser Safety



Fast Pulse Option



example for speed up rise (3.35μs) and fall (5.3μs) times

new! on some devices we have trise - tfall < 1μs , pls. request

Revision overview:

2013.10.10: "v0" - series setup

2017.01.23: "v1" - new types integrated f.e. JOLD-45, cooling improved, alternatively-new industrial interface with additional SPS-compatibility as option

2018.01.29: "v2" - new layout and new types integrated

References:

<http://www.ostech.de/de/produkte/diodenlasersysteme/dst11-t192>

<http://www.ostech.de/en/downloads/manuals/ds-en.pdf>

<http://www.ostech.de/en/downloads/labview>

All product information is believed to be accurate and is subject to change without notice. Some specific combinations of options may not be available.