

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 laser protection features are incorporated.

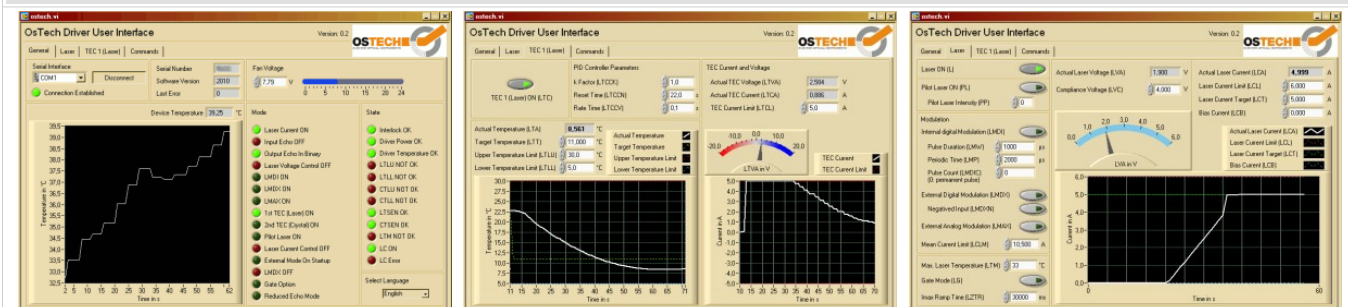
As user interface we provide the front panel display, RS232 and an isolated industrial interface. The following modes are available: cw-mode, external analogue modulation, external digital modulation, internal modulation, internally generated pulses and pulse bursts, externally triggered internal pulses 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>"

dst11-t192-series diode laser system

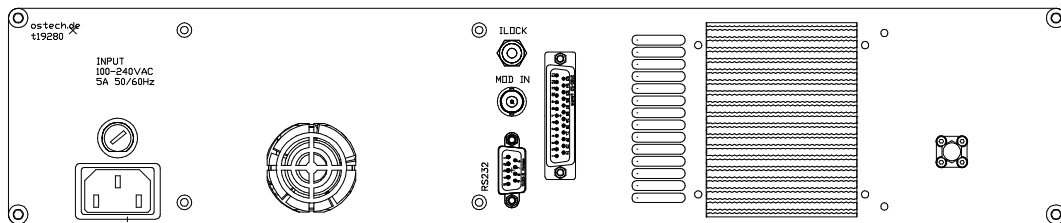
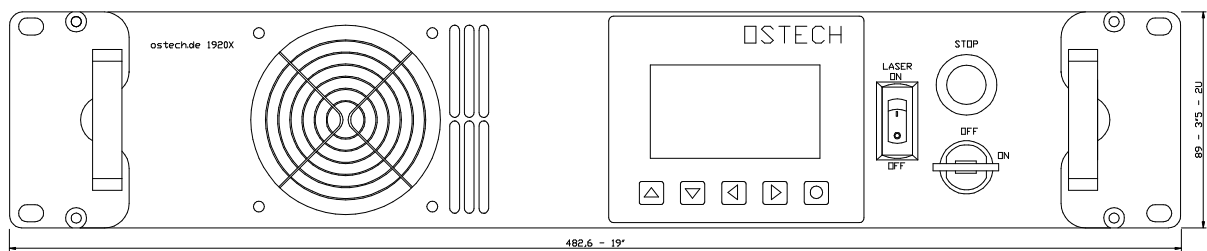
integrated fiber coupled laser diodes with lasers up to 50W cw optical output power

Features:

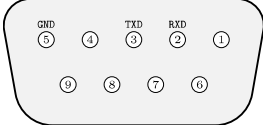
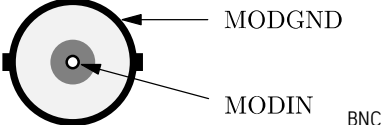
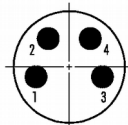
- up to 45W cw optical output power (typical qcw power up to 120W or more)
- housing 19" rack mount, 2HU, depth 260mm-11"-with no plugs
- input 110V-240V AC
- typical optical output - SMA fiber receptacle, NA 0.22, fiber core diameter 100µm - 600µm, others on request
- key switch, emergency stop, Interlock 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



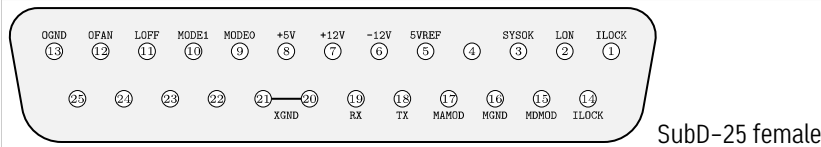
19" 2HU, 260mm depth, air cooled

RS232 Connector	AMOD/DMOD Connector	Interlock Connector
 <p>SubD-9, female</p>	 <p>MODGND MODIN 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 - 1st version



PIN.No	Abbr.		Function
1	ILOCK	out	Interlock Output max. 12V 100mA
2	LON	out	Laser On - TTL- Output High = Laser On (pull-up resistor at 5V with 270R for LED f.e.)
3	SYSOK	out	System Ok - TTL-Output High = Laser, Temp. & System OK (pull-up resistor at 5V with 270R)
4		n.c.	
5	5VREF	sup	External Reference 5V +-1% max. 20mA - as potentiometer supply f.e.
6	-12V	sup	External Supply Output -12V max. 250mA for free usage
7	+12V	sup	External Supply Output+12V max. 250mA for free usage
8	+5V	sup	External Supply Output 5V max. 250mA for free usage
9	MODE0	in	TTL-Input - multipurpose mode select input
10	MODE1	in	TTL-Input - multipurpose mode select input
11	LOff	in	TTL-Input - Laser OFF = TTL-High (internally pulled up)
12	OFAN	out	Universal Supply - 2V..22V up to 800mA for external Fan etc. (! not isolated)
13	OGND	out	Universal Supply GND (! not isolated)
14	ILOCK	in	Interlock Input - has to be connected to XO_ILOCK
15	MDMOD	in	Modulation Digital Input TTL-high=Laser ON (ref. to MGND)
16	MGND	sup	Modulation GND
17	MAMOD	in	Modulation Analog Input 0-4V → 0A-I _{max} (ref. to MGND)
18	TX	in	RS232-Tx
19	RX	out	RS232-Rx
20,21	GND	sup	GND
22,23,24,25	n.c.		

Configuration Examples

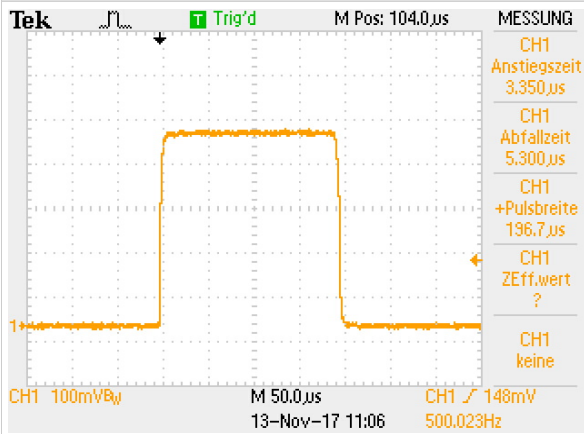
Type	Device Name	Laser Assembled
455	dst11-JOLD-30W-808nm-200µ-NA0.22-t19280-v0-455	JOLD-30-FC
456	dst11-JOLD-45W-808nm-400µ-NA0.22-t19280-v0-456	JOLD-45-FC
469	dst11-DILAS-14W-1064nm-MF-Serie-t19280-v0-469	M1F1S22-1064.10-14C-T25-ss2.1
473	dst11-JOLD-30W-808nm-400µ-NA0.22-FCM-19280-v0-473	JOLD-30-FCM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

Laser Safety

INVISIBLE LASER RADIATION.
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION!
CLASS 4 LASER PRODUCT
FN60875-1-2001

$P_0=10-50W$
 $\lambda= 808nm - 1060nm$

Fast Pulse Option



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

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.