

Areté produces diode pumped solid-state lasers that are more efficient, compact, and reliable than legacy systems. Areté's *TID* series compact laser is perfectly suited to Short Wave Infrared Imaging and other laser radar applications. The innovative resonator design provides high energy, short duration pulses at 1572nm. The laser was designed to meet the difficult packaging requirements of space constrained environments. The scalable resonator design permits customization for different wavelengths, output energies, and powers. Occupying just 144 in³, including power supply and electronics, this laser is one of a kind.

LIDAR/LADAR

Range Finding

Range-gated Imaging

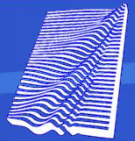
Marker

3D Laser Radar

Laser Ionization Breakdown

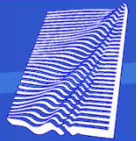
Spectroscopy

- ✓ *Ruggedized*
- ✓ *Designed for airborne vibration and temperature*
- ✓ *Novel thermal management*
- ✓ *Compact, light-weight construction*
- ✓ *High wall-plug efficiencies*
- ✓ *On board diagnostics and data-logging*
- ✓ *Based on 50 Years of laser design experience*

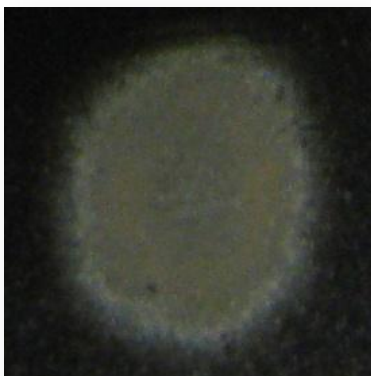
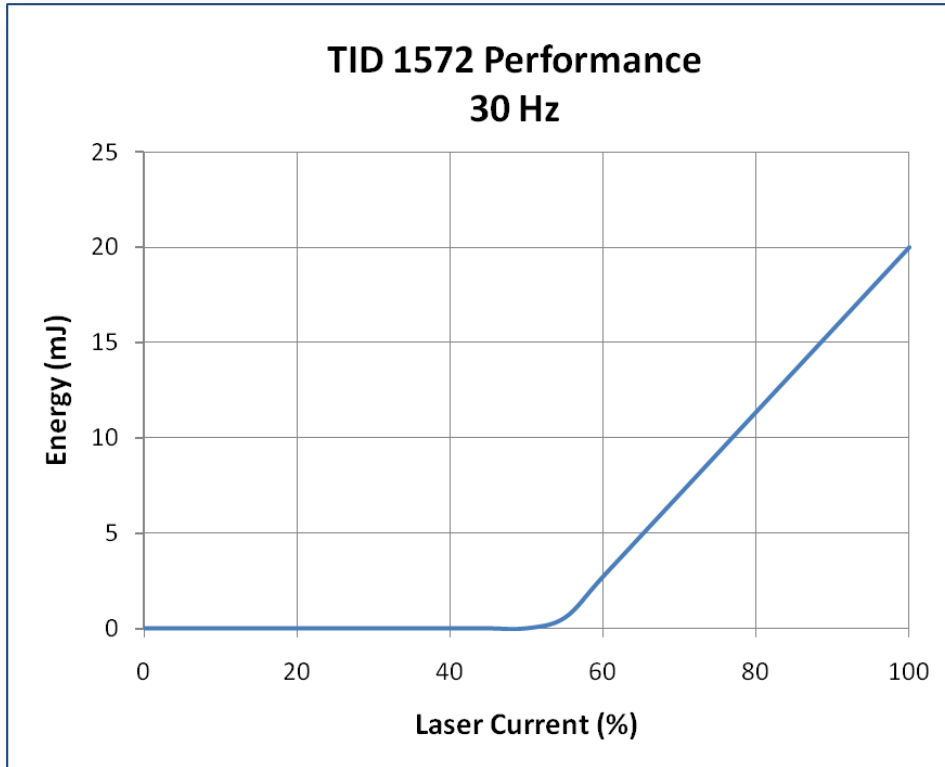


The TID-1572 was designed for laser radar and SWIR imaging applications where space constraints are extreme. The electronics and laser head can be packaged in alternate formats to fit in even tighter spaces. From conceptualization to final design the keyword has been extensibility. Areté can also provide alternate Nd:YAG harmonics (532, 355, 266 nm) and higher output energies. A customized version of the TID may be right for your application. Contact us today for more information.

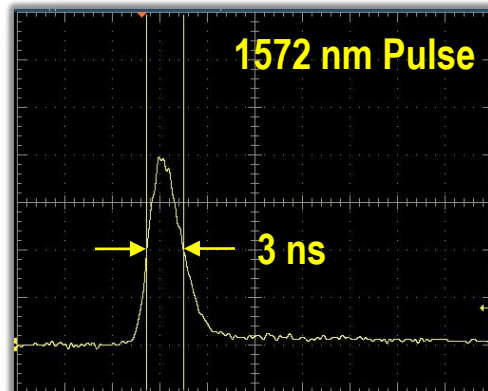
DEVICE SPECIFICATIONS **		TID -1572	
Repetition Rate †		50 Hz	100 Hz
Optical Characteristics	Output Power	1W	1W
	Pulse Energy	20 mJ	10 mJ
	Pulse Duration	~ 3 ns	~ 3 ns
	Beam Quality	$M^2 < 5$	$M^2 < 10$
	Beam Size	4 mm	4 mm
Wavelength		1572 ± 1 nm	
Electrical Characteristics	Input Power (Typical / Max)	120/260 W	170/260 W
	Voltage	24-36 VDC	
Thermal Characteristics	Cooling Method	Conduction	
	Heatsink Dissipation	< 260 W	< 260 W
	Heatsink Temperature	10-30°	10-20°
	Storage Temperature	-40 to 80°	
Mechanical Characteristics	Weight	< 7 lbs	
	Dimensions (LxWxH)	7.3" × 7.3" × 4"	
<p>** As part of our continuous product improvement, all specifications are subject to change without notice</p> <p>† Devices can be factory-built to operate at repetition rates between 0 and 100 Hz. Some performance characteristics vary with repetition rate. The specifications above are examples of two lasers.</p>			



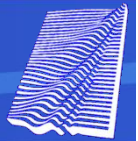
Optical Properties



Near field 1572 nm beam
burn pattern at 20mJ

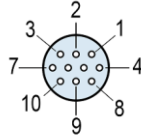


Pulse-capture of 1572 nm
beam at 20 mJ

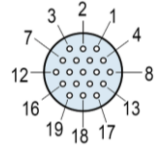


Electrical Interface

Power



Control



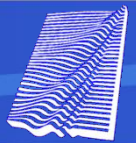
Glenair - Series 801 Circular, 10 Pin

Pin No.	Description
1	Power In
2	Power In
4	Power In
5	Power In
8	Power In
3	Power Return
6	Power Return
7	Power Return
9	Power Return
10	Power Return

- Laser bulkhead connector
 - P/N 801-009-07M7-10PA
- Mating cable connector
 - P/N 801-008-16M7-10SA

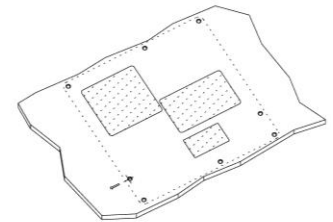
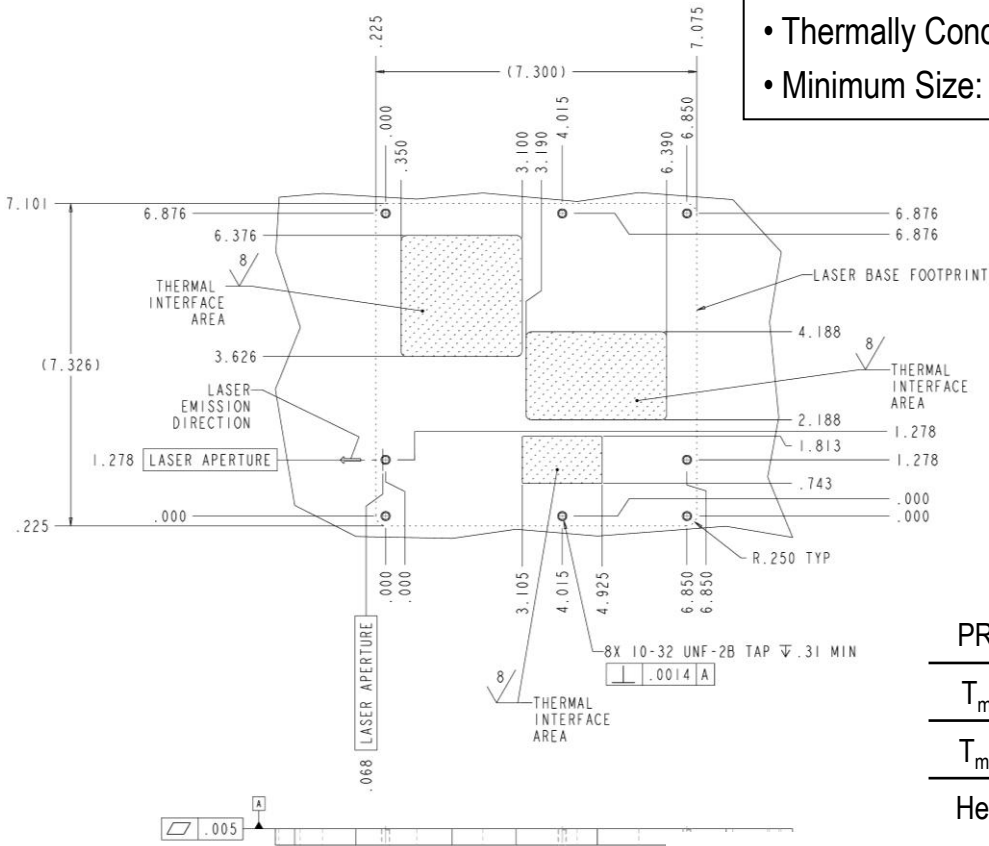
Pin No.	Description	
1	Host, RS-232, Receive	
2	Host, RS-232, Transmit	
5	Host, RS-232, Ground	
3	Debug, RS-232, Receive	Do not connect
7	Debug, RS-232, Transmit	Do not connect
6	Debug, RS-232, Ground	Do not connect
10	Interlock	Connect to Interlock Return
15	Interlock Return	
18	Laser Power Set Point - Analog	Analog voltage
17	Shield - Analog Ground	
12	External Trigger	High-Z TTL Input
16	External Trigger Return	
4	Laser Enable	High-Z TTL Input
8	Q-Switch Sync	High-Z TTL Output
9	External Return	Return for digital I/O
11	Fault Status	High-Z TTL Output
13	Laser Ready	High-Z TTL Output
14	Sync Out	High-Z TTL Output
19	External Return	Return for digital I/O

- Laser bulkhead connector
 - P/N 801-009-07M9-19SA
- Mating cable connector
 - P/N 801-008-16M9-19PA



Thermal Interface

- Thermally Conductive Flat Plate
- Minimum Size: 7.326 x 7.300 in. area



PRF	50 Hz	100 Hz
T _{min}	10°C	10°C
T _{max}	30°C	20°C
Heat	< 260 W	< 260W

INDEX	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY PER ASS'Y
1	TID-20/50-P LASER ASS'Y	ALUMINUM ALLOY PACKAGE	1
2	MOUNTING SURFACE	ALUMINUM ALLOY	1
3	10-32 X 5/8 SHCS	STAINLESS STEEL ALLOY	8
4	#10 HI-COLLAR LOCK WASHER	STAINLESS STEEL ALLOY	8
5	#10 FLAT WASHER	STAINLESS STEEL ALLOY	8
6	THERMAL PAD 1	TennMax GP8025	1
7	THERMAL PAD 2	TennMax GP8050	1
8	THERMAL PAD 3	TennMax GP8050	1

