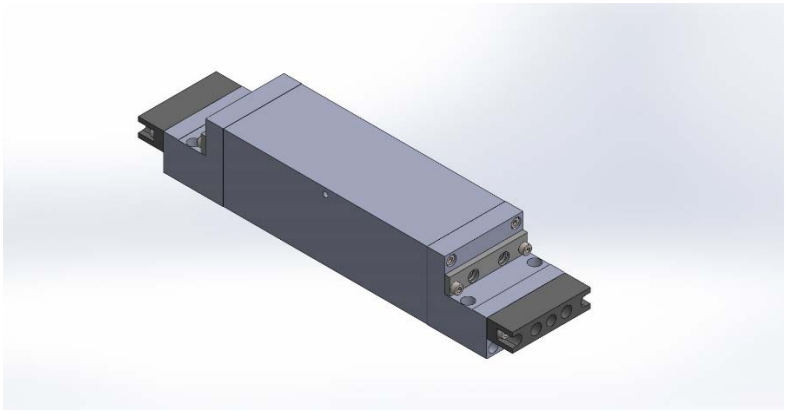
MegaWatt Lasers

90 Watt 2.13 µm D4X125C2 PUMP CHAMBER Dual Lamp Dual Rod



Holmium
67 164.93032
Ho
[Xe] $4f^{11}$ $6s^2$
175 pm 581.0 kJ·mol^{-1}
3 8790 kg·m^{-3}
1.23 1461/2720 °C

Compact, Dual-Channel, Water-Cooled, Flashlamp-Pumped Ho:YAG Pump Chamber

Table of Standard Specifications for D4X125C2-CTH			
Parameter	**Value**	**Unit**	**Notes**
Wavelength	2.13	µm	
Resonator Output	>90	W	Combined @ 10 Hz each & 500 µs
Lamp Voltage	800	V	@ 90 W & 500 µs typical
Pulse Width Range	200 – 800	µs	
Coolant Temp	20	°C	Typical (deionized H_2O)
Coolant Flow Rate	11	Liters/min	Minimum of 5.5LPM for each port
Repetition Rate	10 – 50	Hz	
Dimensions	19.1 x 4.0 x 3.45	cm	L x W x H
Pump Parameters Recommended Limits			
Energy	≤ 110	Joules	Per lamp
Power	≤ 1800	Watts	Per lamp
Peak Power	≤ 200	kW	Per lamp

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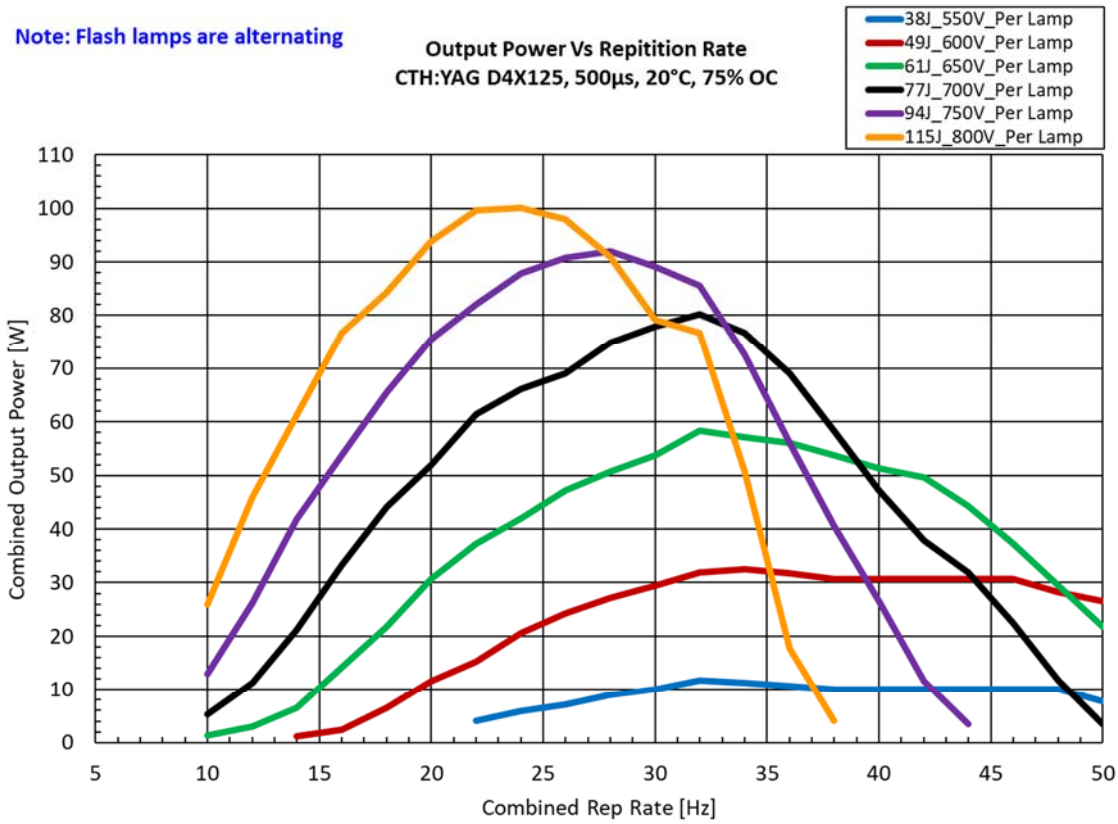
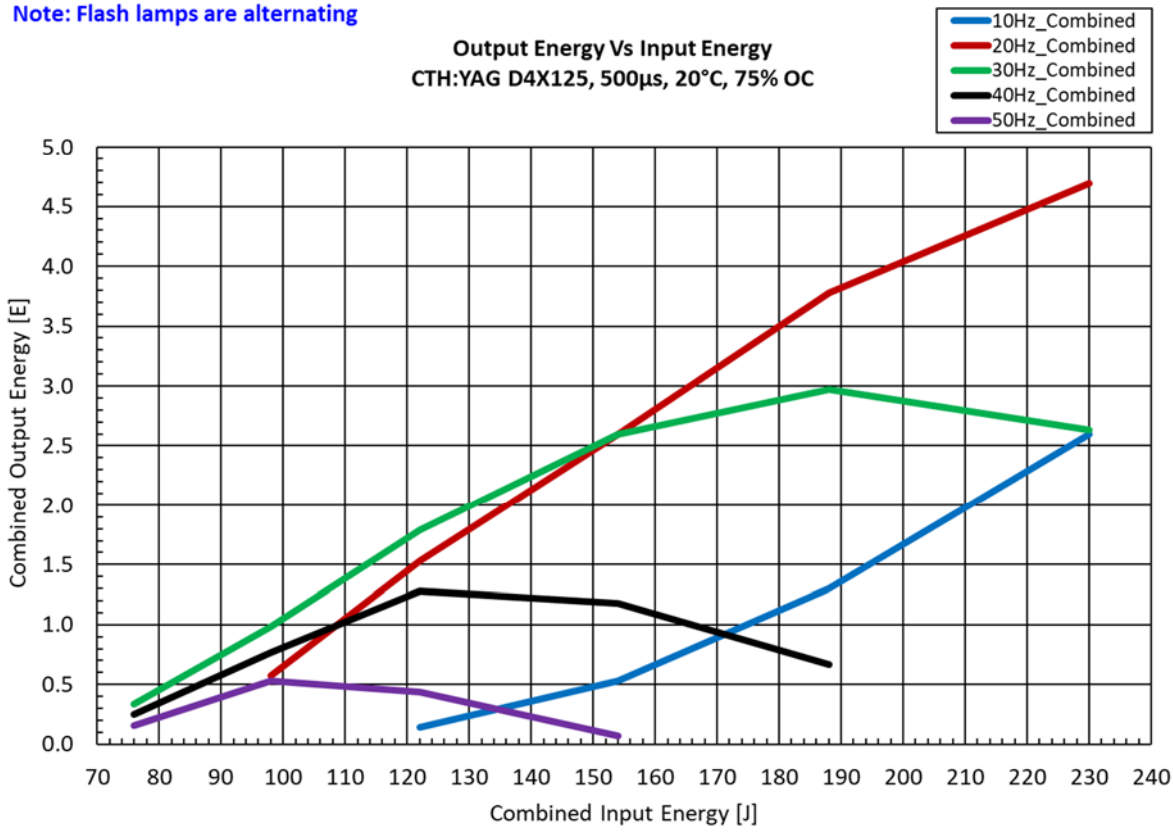
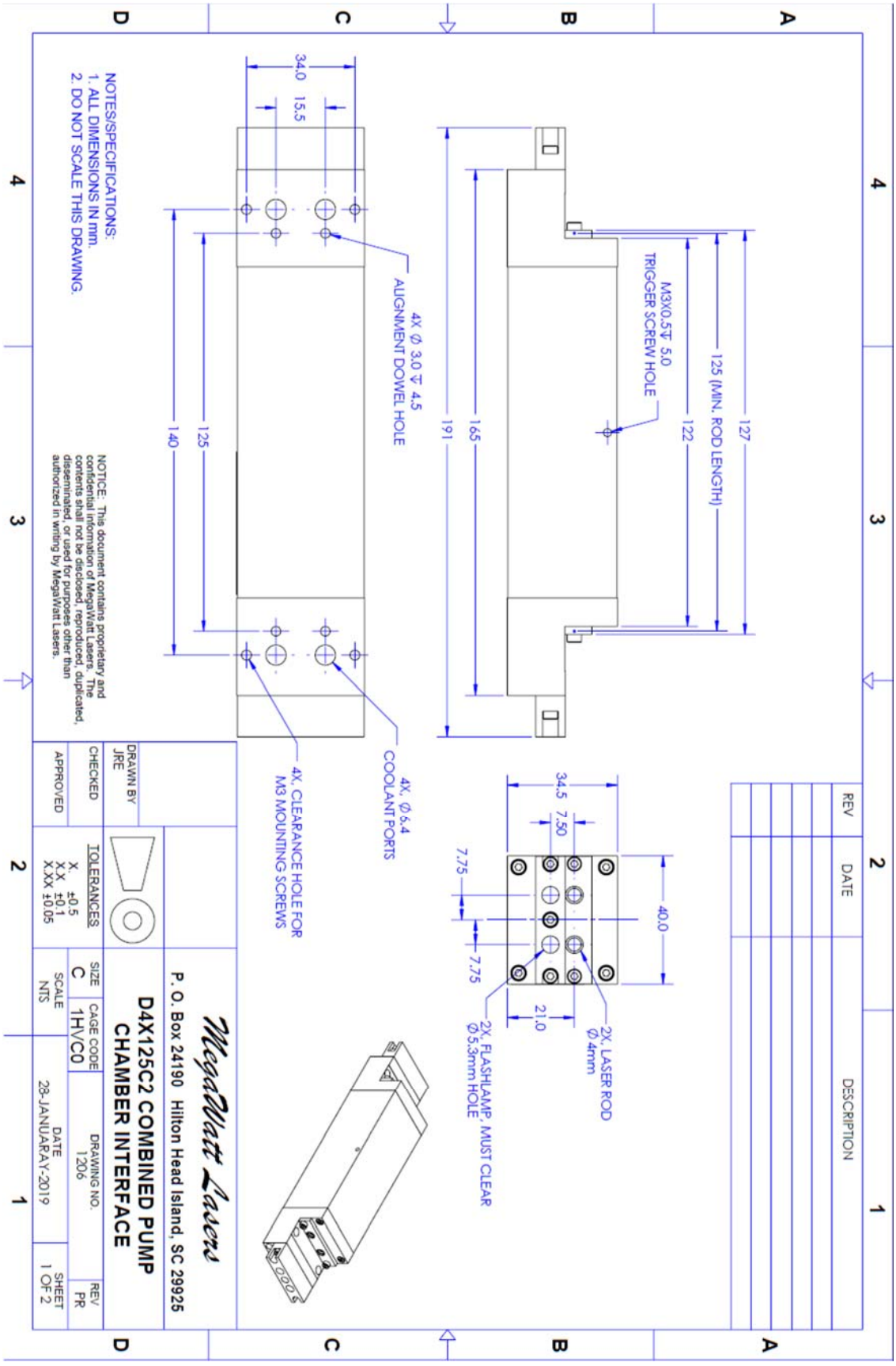
Note: Flash lamps are alternating



Note: Flash lamps are alternating




NOTES/SPECIFICATIONS:
1. ALL DIMENSIONS IN mm.
2. DO NOT SCALE THIS DRAWING.
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127
125 (MIN. ROD LENGTH)
122
M3X0.5↧ 5.0
TRIGGER SCREW HOLE
191
165
34.0
15.5
4X Ø 3.0 ↧ 4.5
ALIGNMENT DOWEL HOLE
140
125
4X, Ø 6.4
COOLANT PORTS
4X, CLEARANCE HOLE FOR
M3 MOUNTING SCREWS
34.5
7.50
7.75
40.0
7.75
21.0
2X, LASER ROD
Ø 4mm
2X, FLASHLAMP, MUST CLEAR
Ø 5.3mm HOLE
REV
DATE
DESCRIPTION
DRAWN BY
JRE
CHECKED
APPROVED
TOLERANCES
X. ±0.5
X.X ±0.1
X.XX ±0.05
MegaWatt Lasers
P. O. Box 24190 Hilton Head Island, SC 29925
D4X125C2 COMBINED PUMP
CHAMBER INTERFACE
SIZE
C
CAGE CODE
1HVC0
DRAWING NO.
1206
REV
PR
SCALE
NTS
DATE
28-JANUARY-2019
SHEET
1 OF 2

Recommended Cooling Specifications and Requirements:

MegaWatt Lasers, Inc. recommends the use of a minimum of 2 kW cooling, at minimum of 11 liters/min (~2.9 gal/min), or 5.5 lpm per channel. Careful selection of wetted cooling system components is very important for long pump chamber life. The pump chamber requires clean deionized water as a coolant. The resistivity should be about 1 MΩ·cm (conductivity ~ 1 S/cm) and should be free of organic contamination. High quality stainless steel, such as 316-L is acceptable, but parts should be passivated. Aluminum must be anodized with a high quality process, such as MIL-A-8625F, Type II, Class 1. Titanium is also acceptable and Grade 2 (unalloyed, standard oxygen) has been used successfully. Copper and copper alloys, such as brass, should be avoided. Many plastics, including polypropylene, polyethylene, Teflon, Delrin, Noryl, etc. have been used successfully, but it is important that these materials do not leach plasticizers into the coolant. Wetted materials that are rated for milk transport are often good candidates for cooling system components. When considering cooling components, it is important to ensure the components do not introduce contamination into the coolant. This is different from the components being “compatible with distilled or deionized water.” Ordinary Steam Distilled Water, available from grocery stores usually has a resistivity of 0. 6- 1.2 MΩ·cm and this is acceptable coolant if laboratory distilled or deionized water is not available. If all wetted components are inert, it is generally not necessary to use a deionization filter in the cooling system. If a deionization filter is used, ensure it does not introduce organic contamination into the coolant. The UV from the flashlamp will sterilize biological organisms in the coolant. If the system will not be operated for more than a month, the cooling system should be drained and dried using filtered compressed air or Ultra High Purity (UHP) nitrogen. For a system that is used weekly, the coolant should be changed every six months. Wetted components in the pump chamber include anodized 6061-T6 aluminum, passivated SS 316-L, silicate glass or fused silica, and silicone O-rings.