ZMI 7714 Laser Head

P/N's	Description
8070-0278-01	6 mm beam diameter
8070-0279-01	8 mm beam diameter

Physical Characteristics	
Dimensions	See Figure
Weight	9.5 lb (4.3 Kg)
Materials	Casting- Aluminum, interface balls- 440C Stainless steel
Cooling Connectors	(2) 1/8 inch NPT, female
Nom. Cable Clearance	5.3 in. (135 mm)

Electrical	
Power Requirements (max)	+15 VDC ±0.5V @ 2.1 A -15 VDC ±0.5V @ 1.2 A -15 VDC inrush max 5 A for 20 msec
Total Heat Dissipation	< 8 W with user-supplied chiller

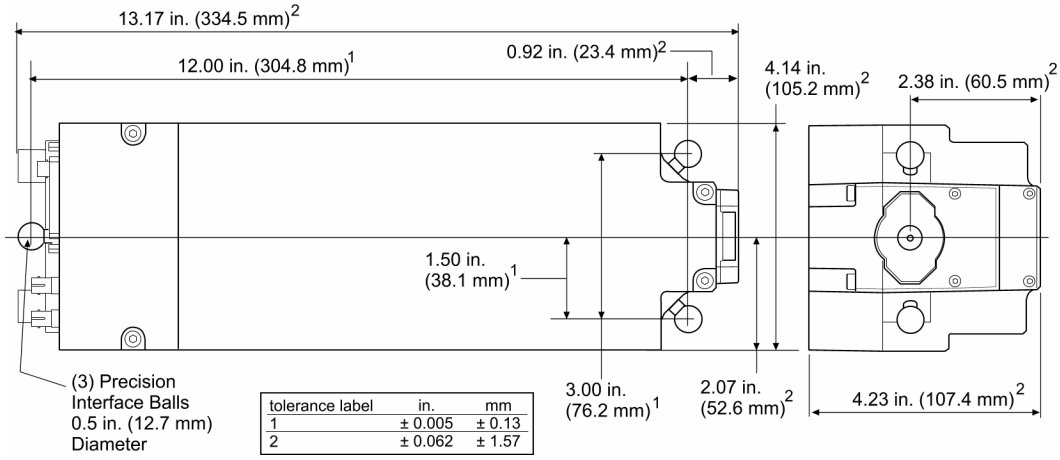
Laser Beam Characteristics	
Type	Helium-Neon, continuous wave, heterodyne
Beam Diameter	See P/N section
Min. Power Output	1.350 mW (6 mm beam) 1.250 mW (8 mm beam)
Frequency Difference	20 MHz ±1600 Hz
F1	Vertical polarization (⊥ to plane defined by the three interface balls)
F2	Horizontal polarization (// to plane defined by the three interface balls), F1 > F2
Maximum Power Difference Between Polarization's	5% of total power
Wavelength Stability Time	10 minutes typical @ 21.5 ± 1.5°C
Polarization Mixing (1):	< 0.25 nm
Time from turn-on to laser light	<30 sec. typical; 2 min. maximum
Beam Pointing Stability	<0.5 µrad per °C ambient temperature change after wavelength is stable

Laser Beam Characteristics continued	
Static Beam Position (2)	± 100 µm
Static Beam Pointing (2)	± 100 µrad
Nominal Vacuum Wavelength	632.9911 ± 0.0005 nm
Vacuum Wavelength Lifetime Accuracy	± 0.1 ppm
Vacuum Wavelength Stability	± 1 ppb (3σ) over 24 hours ± 0.5 ppb (3σ) over 1 hour
DHHS Laser Safety Classification	Class IIIa, conforms to NCDRH regulations

Environmental	
Operating Temperature	20 to 25°C
Maximum Rate of Ambient Temperature Change	1°C per 30 minute period
Non-operating Temperature	-20 to 60°C
Operating Humidity	20 to 70%, noncondensing
Shock (non-operational)	11 milliseconds 40 G shock on each of three orthogonal axes

Cooling	
Active cooling with a user-supplied chiller is required to meet the specifications on this page.	
Chiller Requirements	cooled liquid at ambient temperature, stable to ± 0.1° C, with a recommended flow rate of 0.5 liters per minute
Expected o-ring Lifetime	>50,000 hours of operation when used with a ZYGO approved coolant

1. The extinction of the unwanted beam component (vertical or horizontal), using a Wollaston prism (oriented at 0.00° or 90.00°) with an extinction ratio of < 10^{-5}, will be less than 100 parts per million of the wanted beam component.
2. Static beam specifications are in reference to a line from the center of the rear interface ball, which is perpendicular to a line passing through the center of the two front balls.



tolerance label	in.	mm
1	± 0.005	± 0.13
2	± 0.062	± 1.57

Dimensions shown in inches and millimeters

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