

# ZMI 7714 Laser Head

P/N's	POWER	BEAM DIAMETER
8070-0278-11	1.350 mW	6 mm
8070-0278-12	1.250 mW	8 mm
8070-0278-13	1.350 mW	3 mm

## PHYSICAL CHARACTERISTICS

Dimensions	See Figure
Weight	4.3 kg
Materials	Casting- Aluminum Interface Balls- 440C Stainless Steel
Cooling Connectors	(2) 1/8 inch NPT, female
Nominal Cable Clearance	135 mm

## ELECTRICAL

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

## LASER CHARACTERISTICS

Type	Helium-Neon, CW, heterodyne
Output Power	See P/N Section
Beam Diameter	See P/N section
Static Beam Position <sup>(1)</sup>	$\pm$ 100 $\mu$ m
Static Beam Pointing <sup>(1)</sup>	$\pm$ 100 $\mu$ rad
Beam Pointing Stability	<0.5 $\mu$ rad per $^{\circ}$ C ambient temp. change after wavelength is stable
Time from turn-on to laser light	<30 sec. typical; 2 min. maximum
Time to wavelength stability	10 minutes typical @ $21.5 \pm 1.5^{\circ}$ C
Frequency Difference	20 MHz $\pm$ 1600 Hz

## LASER CHARACTERISTICS CONTINUED

Nominal Vacuum Wavelength	632.9911 $\pm$ 0.0005 nm
Vacuum Wavelength Lifetime Accuracy	$\pm$ 0.1 ppm
Vacuum Wavelength Stability	0.5 ppb ( $3\sigma$ ) over 1 hour 1 ppb ( $3\sigma$ ) over 24 hours
Polarization Mixing Error	$\leq$ 0.25 nm
DHHS Laser Safety Classification	Class IIIa, conforms to NCDRH regulations

## ENVIRONMENTAL

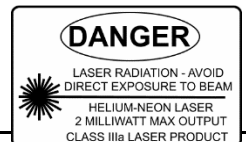
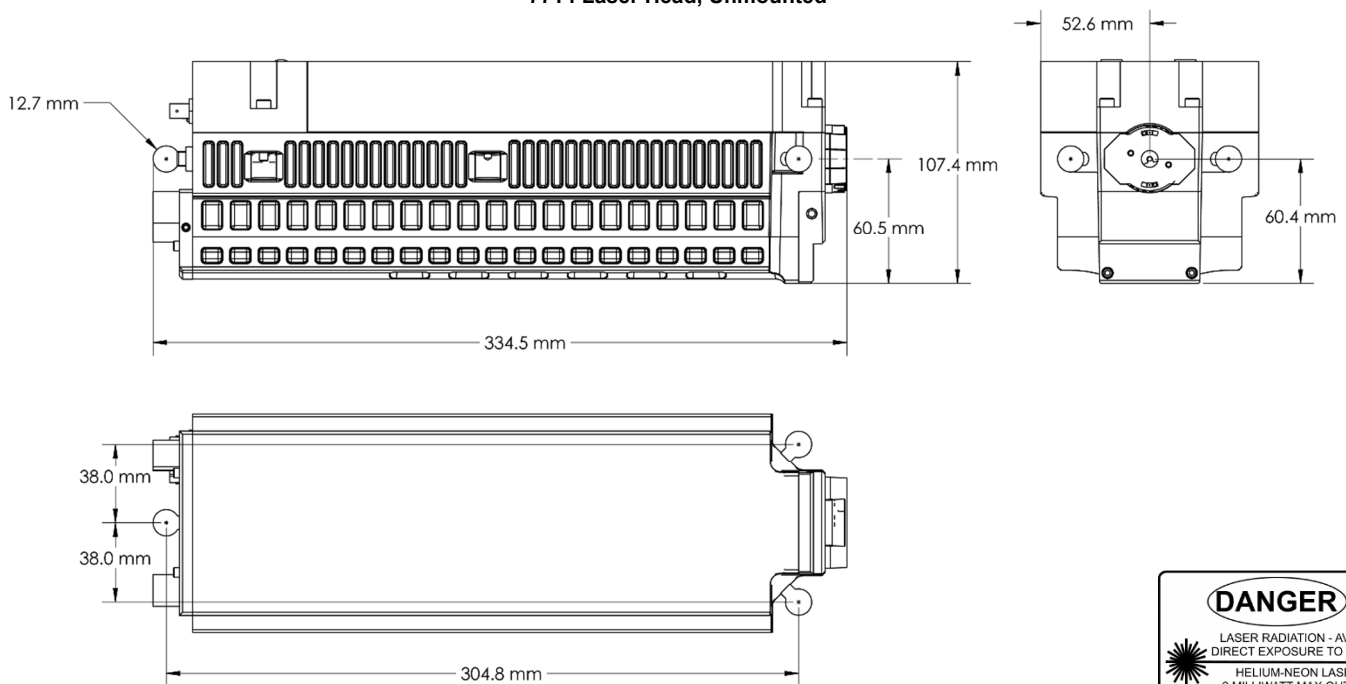
Operating Temperature	20 to 25 $^{\circ}$ C
Maximum Rate of Ambient Temperature Change	1 $^{\circ}$ C per 30 minute period
Non-operating Temperature	-20 to 60 $^{\circ}$ C
Operating Humidity	20 to 70%, noncondensing
Shock (non-operational)	11 msec 40g shock on each of three orthogonal axes

## COOLING

Active cooling with a user-supplied chiller is required to meet the specifications on this page.	
Coolant Type	Compatible with ethylene propylene seals
Coolant Temperature Setpoint	20 to 23 $^{\circ}$ C $\pm$ 0.1 $^{\circ}$ C
Coolant Flow Rate	>0.5 and <4 liters per minute
Maximum Allowable Coolant Pressure	690 kPa (100 psi)

(1) 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.

7714 Laser Head, Unmounted



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