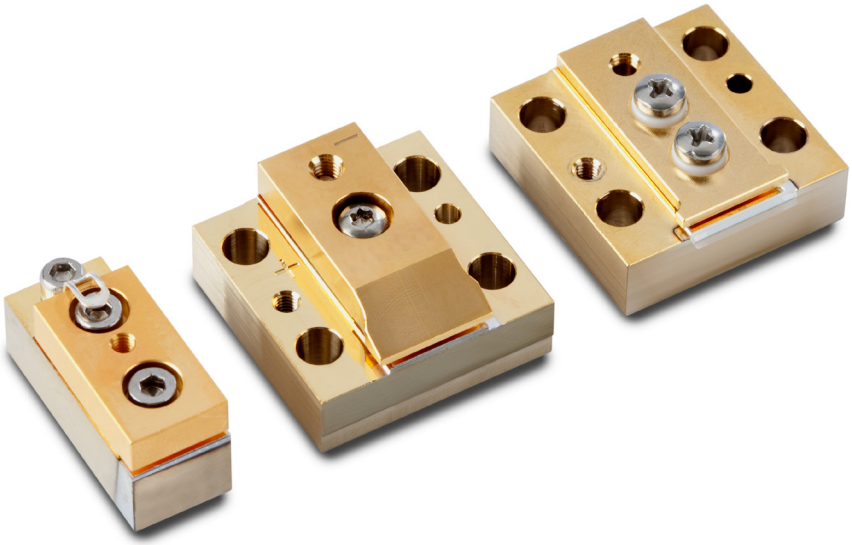
Diode Laser Components

SINGLE BAR DIODE LASER MODULE

1064 nm, 60 W, Conduction-Cooled, CW

Conduction-cooled single bars are well introduced in the market and are an industry standard in terms of size and footprint. At Coherent, these laser bars are available in a very wide range of wavelengths and powers, with optional beam shaping such as fast-axis collimation, both-axis collimation, or even further focused to a defined spot size. Also available are options such as spectral locking and line narrowing, using Volume Bragg Gratings (VBG).



FEATURES

- Industry standard size and footprint
- High reliability and consistency
- Hard solder available for harsh drive conditions
- Low smile
- Optional beam shaping
- Optional spectral locking and line narrowing
- Narrow heat sink variant available for side-by-side placement
- Variants with different beam height on request

APPLICATIONS

- Pumping of solid-state lasers
- Materials processing and annealing
- Medical
- Graphic arts

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Device specification

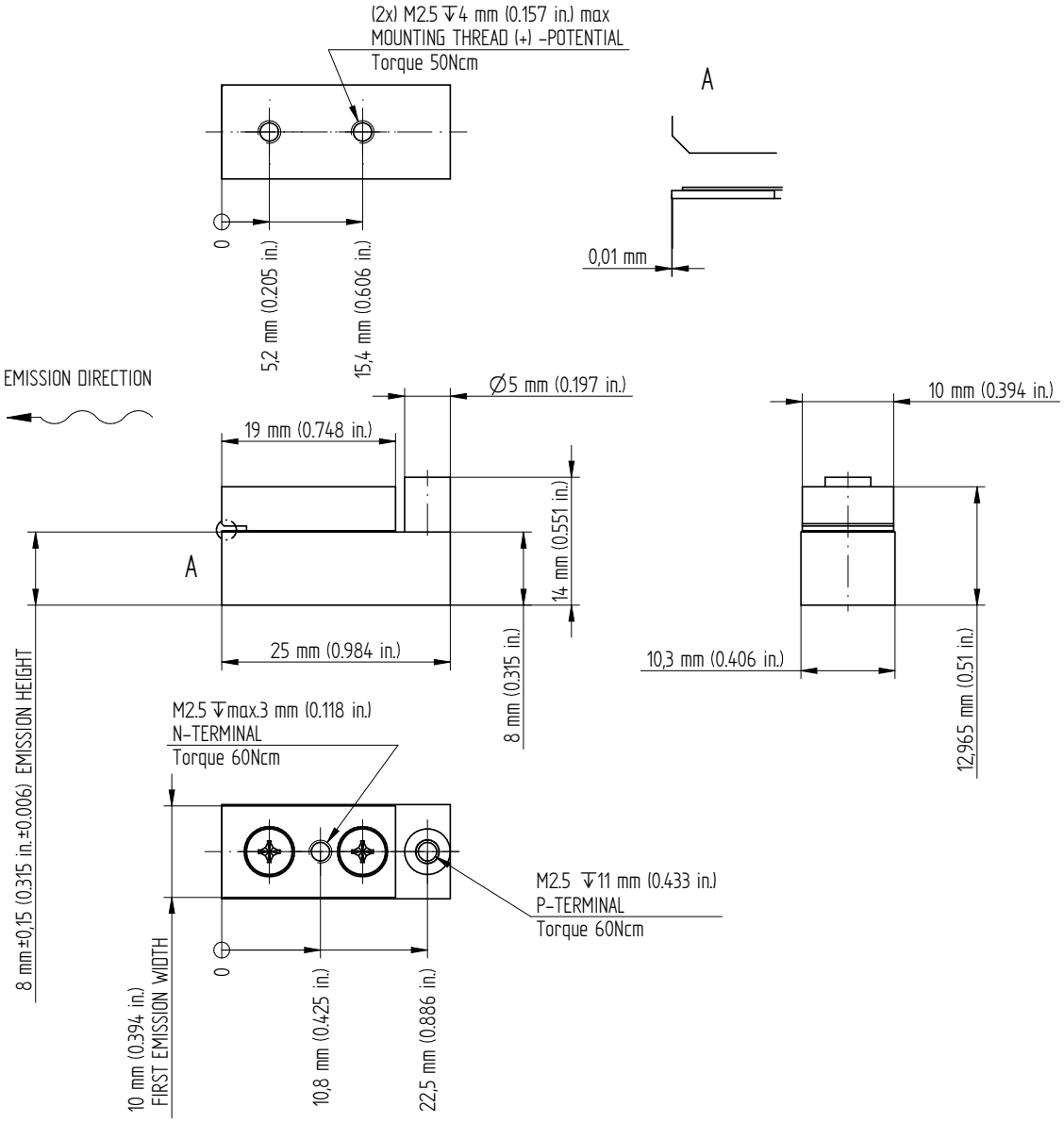
Optical Parameters[1]	M-Type	
Center Wavelength Range[3] (nm)	1064	
Center Wavelength Tolerance[3] (nm)	±10	
Output Power[2] (W)	40	60
Number of Emitters	19	
Emitter Size (µm)	100	
Fill Factor (%)	20	
Operating Condition	CW	
Spectral Width (FWHM) (nm)	≤6.5	≤7
Slope Efficiency (W/A)	≥0.95	
Fast-Axis Divergence without Optics (degree)	≤60	
Fast-Axis Divergence with Fast-Axis Collimation (mrad)	≤8	
Slow-Axis Divergence (degree)	≤8	≤9
Wavelength Temp. Coefficient (nm/°C)	~0.40	
Beam Geometry after FAC Lens (mm x mm)	~0.8 x 10	
Electrical Parameters[1]		
Power Conversion Efficiency (%)	≥55	
Threshold Current (I_{TH}) (A)	≤8	
Operating Current (I_{OP}) (A)	≤48	≤75
Operating Voltage (V_{OP}) (V)	≤1.50	
Thermal Parameters[1]		
Operating Temperature Range[3,4] (°C)	+20 to +30	
Storage Temperature Range[4] (°C)	0 to +55	
Recommended Heat Sink Capacity (W)	≥80	

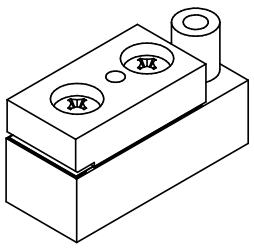
Notes:
1. Data at 25°C cold plate temperature.
2. Reduced lifetime if used above nominal operating conditions.
3. Others available upon request.
4. A non-condensing environment is required for storage and operation below the ambient dew point.

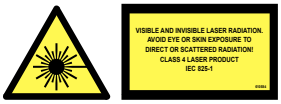
Mechanical specifications

Conduction-Cooled, CW
M-Type Single Bar Diode Laser Module

M8N



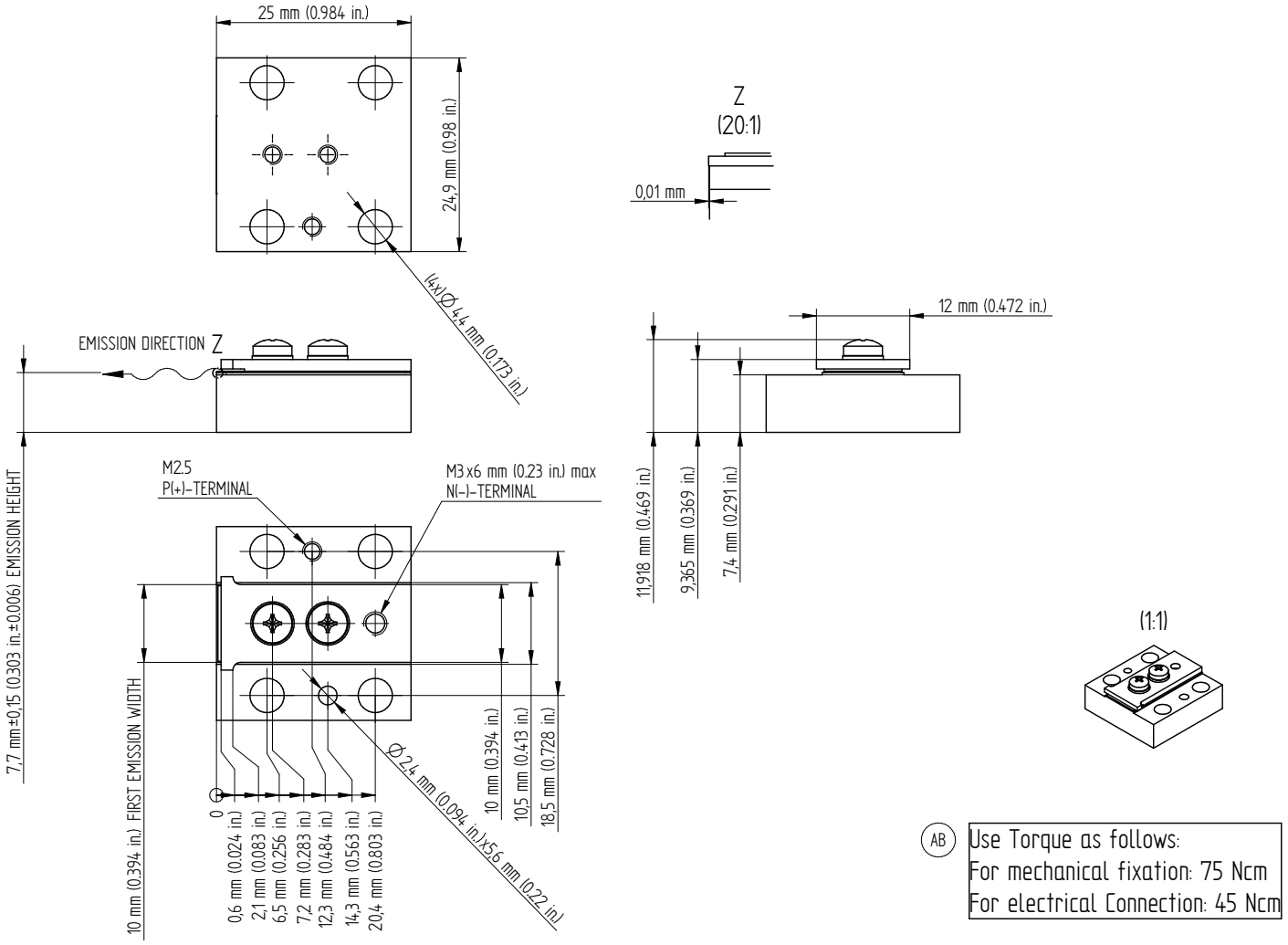




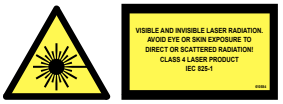
Mechanical specifications

Conduction-Cooled, CW
M-Type Single Bar Diode Laser Module

M3N



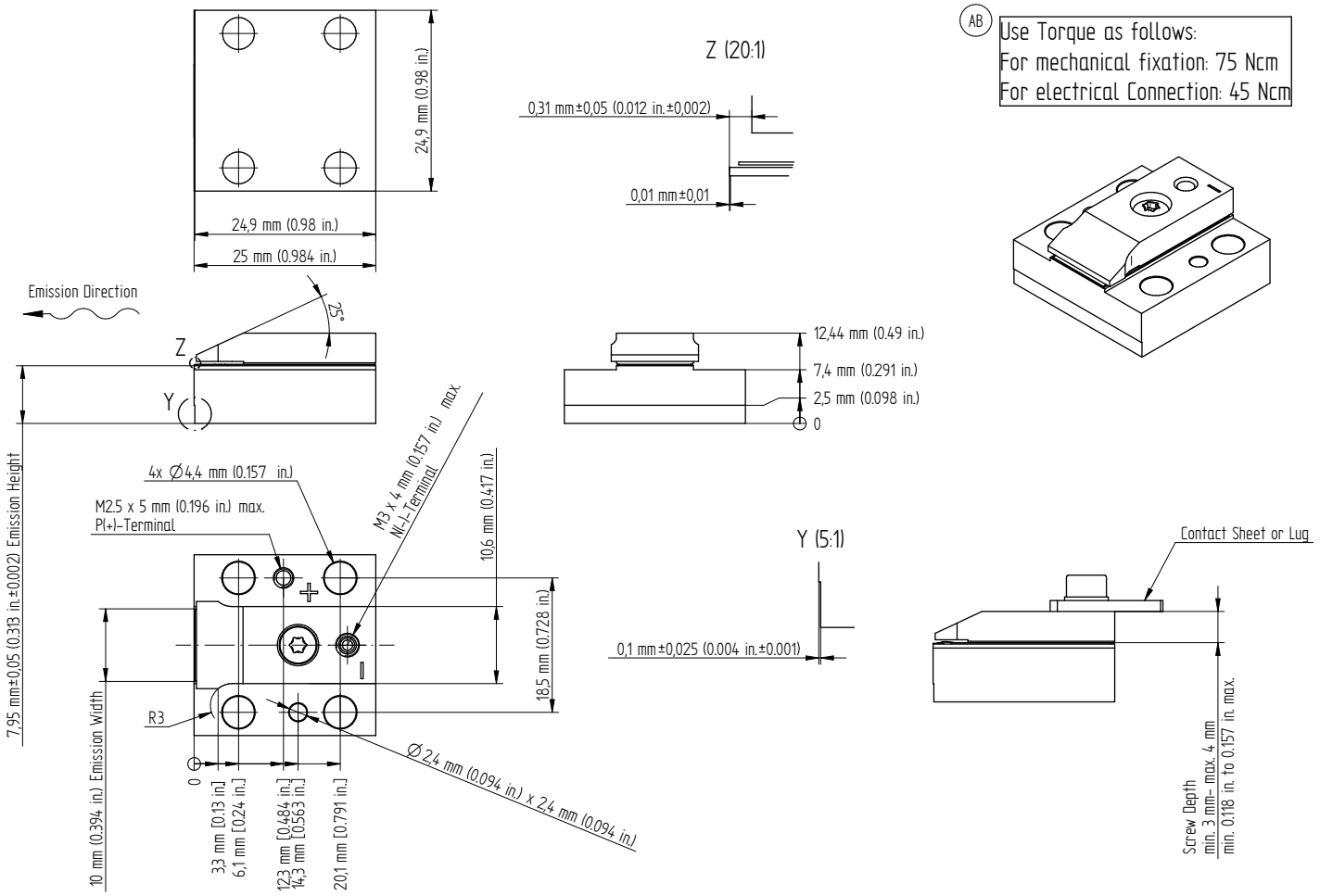
(AB) Use Torque as follows:
For mechanical fixation: 75 Ncm
For electrical Connection: 45 Ncm

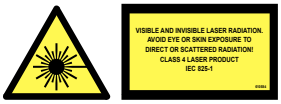


Mechanical specifications

Conduction-Cooled, CW
M-Type Single Bar Diode Laser Module

M10N





sales@coherent.com
www.coherent.com