

PowerRail 750A

The PowerRail 750A is an easy-to-install bus bar and cable-interconnect system. This unique connector system features a continuous louver receptacle designed to accept mating tabs anywhere along its length. The PowerRail is available in one or two-rail standard models with lengths from 4 inches to 6 feet. Multiple interconnect options and rail systems are also available and can be customized for a wide range of applications.

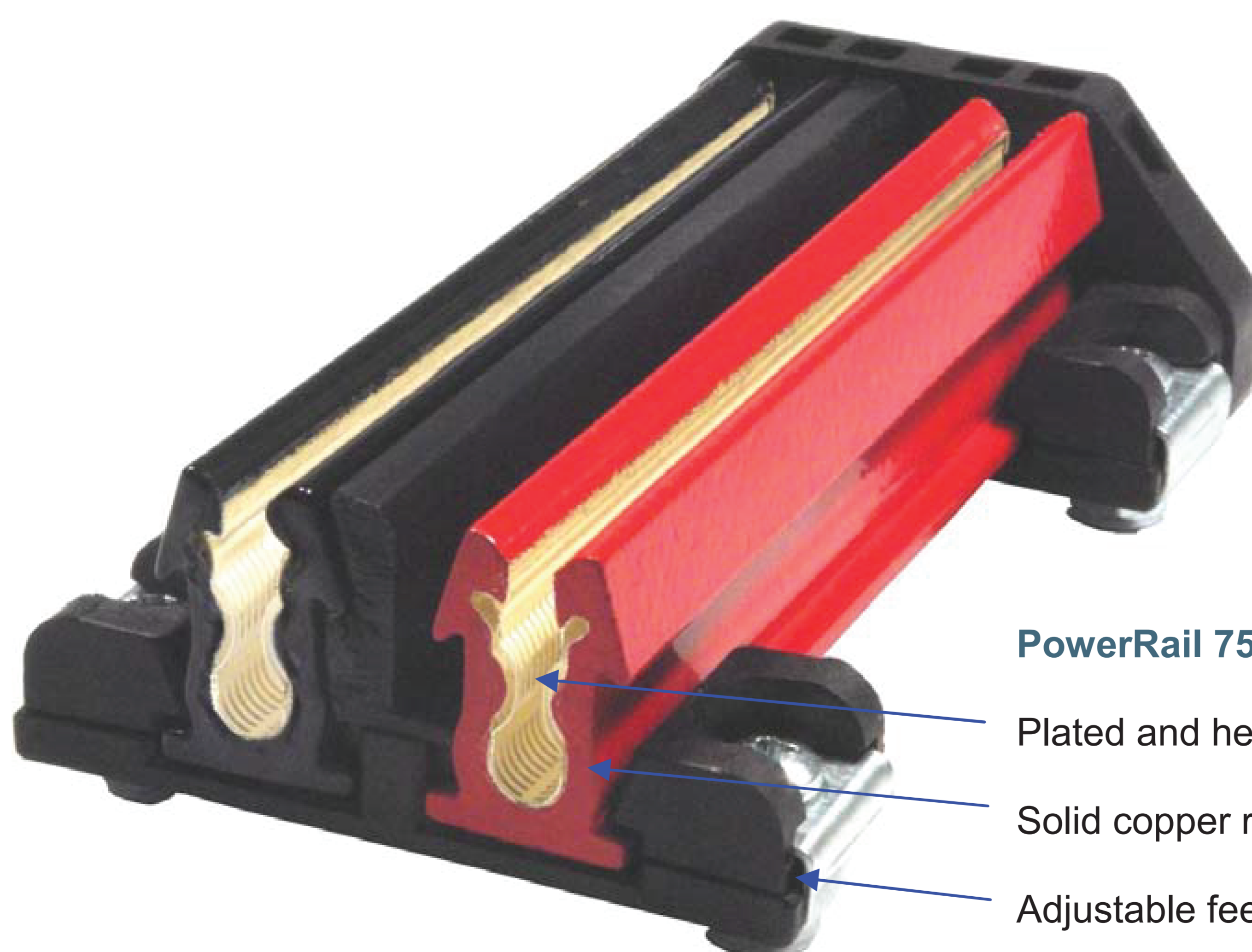


Key specs:

- Bus bar equivalent performance: Very low resistance, essentially the same as a conventional bus bar
- Connect to bus bar, blade or another connector
- Full power available anywhere along the rail
- Cable or bus bar connections available for input and/or output
- Rated for 600V
- Silver over nickel plated

Features and benefits

- Easy installation; lowers system installation cost by reducing connection time
- Standard product eliminates development time and tooling costs
- Cost-effective
- High connection density
- Eliminates discrete connectors
- Low voltage drop results in better system performance
- Universal configuration; One rail will accommodate different wire gauges and different width bus bar tabs
- Easy to integrate both conventional bus bar and PowerRail.



PowerRail 750A Construction

Plated and heat treated Be/Cu louver contacts

Solid copper rail

Adjustable feet

Electrical specifications

Description	Condition	Value/limits
Current rating	PowerRail conductor	750A continuous
	Power louvered contact	200A per linear inch
Interconnect resistance	Interface between Power Blade and PowerRail louvered contact	0.2 mΩ max
Conductivity	C11000 copper alloy, 20°C	100% IACS
		0.591 MegaSiemens/cm (about 99% that of pure copper)
Resistivity	C11000 copper alloy, 20°C	10.3 ohms-cmil/ft
		1.71 microhm-cm
Insulation resistance	EIA-364-21, Apply 500 VDC between terminals and ground.	5 X 10 ⁹ Ω min
Operating voltage		600VDC max
Dielectric strength	EIA 364-20, apply 1500 VDC for 1 minute between terminals and ground	No breakdown
Inductance		≤ 500nH / meter

Mechanical specifications

Description	Condition	Value/limits
Rail conductor	ASTM-B-187	Copper alloy
Plating	Silver plate per ASTM B700	Silver plate over nickel plate
	Nickel plating per SAE-AMS-QQ-N-290	
Rail contact	ASTM-B-194	Beryllium copper alloy
Rail housing and end caps	U.L. 94	Nylon, 94 V-0 rated
Insulation	ASTM D 149	Functional epoxy coating
		Color options: black, red and blue
Insertion / extraction force	0.250 inch wide contact	
	Blade Insertion	5 lb max
	Blade Retention	8 oz min

Environmental specifications

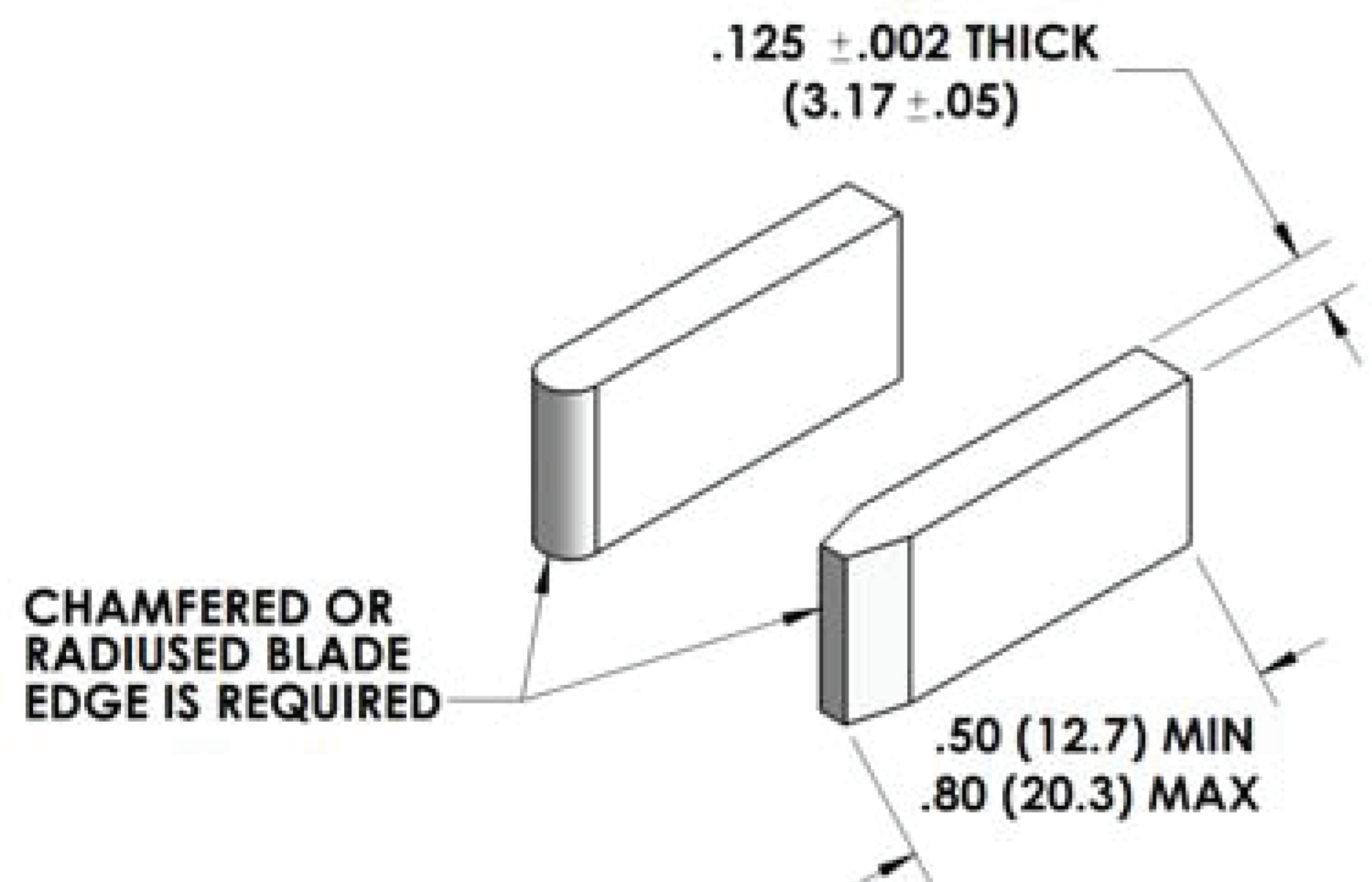
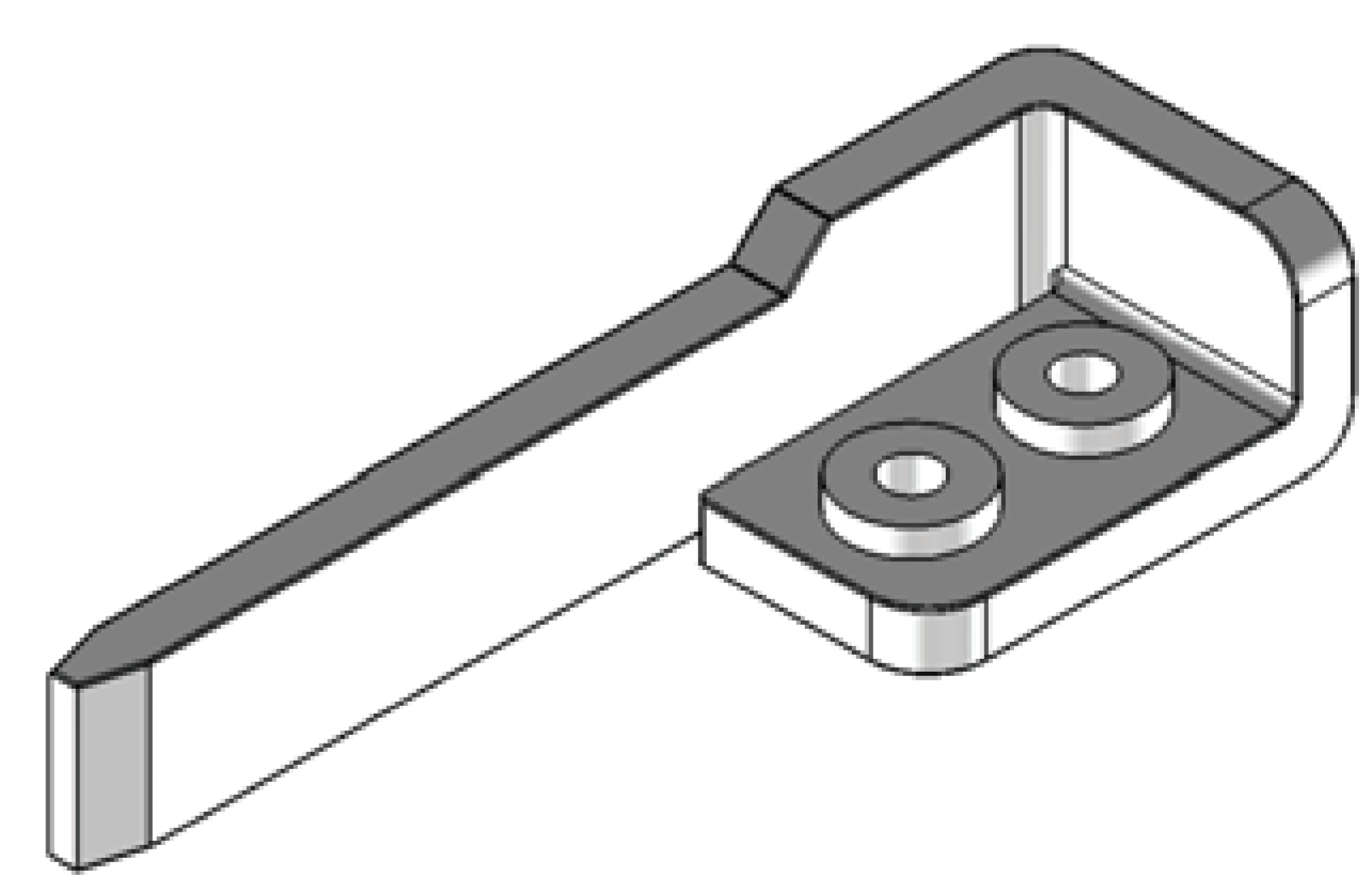
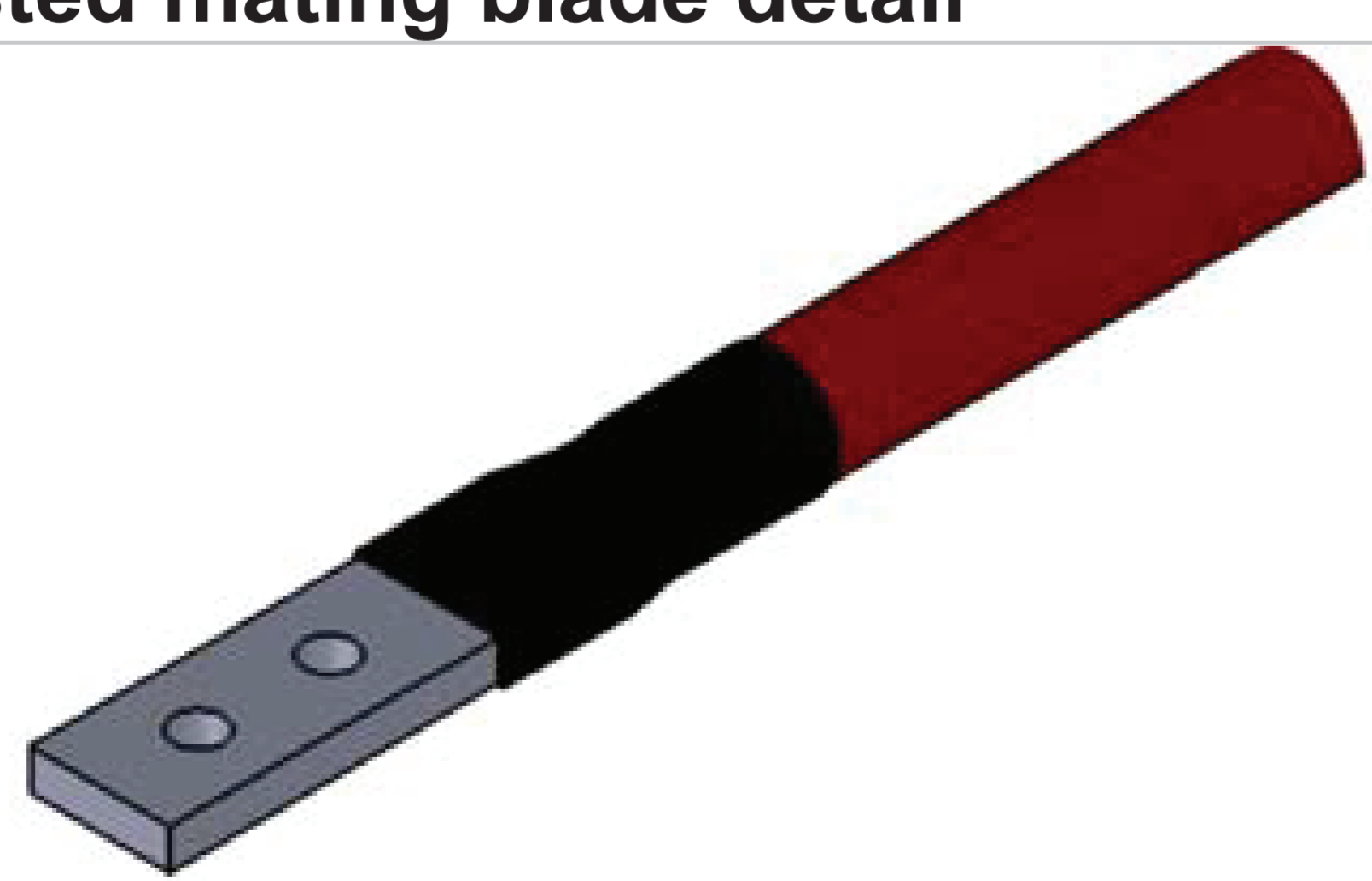
Description	Condition	Value/limits
Temperature range	Operating	+10°C to +90°C
	Non-operating	-40°C to +125°C
	Absolute max, any part of the PowerRail assembly	+105 °C
Humidity range	Operating, non-condensing	10%-90% RH
	Non-operating, non-condensing	5%-93% RH
Altitude	Operating	0 to 2000 meters
	Non-operating	0 to 12,000 meters
Random vibration	EIA-364-28D test condition VII, letter D, Mate connectors with rail and vibrate 15 minutes each axis.	No damage
Mechanical Shock	EIA-364-27, Mate connector with rail and shock at 10g with 1/2 sine waveform (11 milliseconds) shocks in the X, Y, Z axes (18 shocks total).	No damage

Humidity	EIA-364-31B, Mate connectors with rail, expose to 40°C +/-2°C with relative humidity of 90-95% for 96 hours.	No visible damage Contact resistance change +106%
Thermal Shock	EIA-364-32, mate connectors with rail, expose to 5 cycles from -55°C to +125°C	No visible damage
High Temperature Life test	EIA-364-17, Mate connectors with rail, expose to 250 hours at +105°C	No visible damage, Contact resistance change ±9%
Transportation vibration	ASTM 4169 level 2 Random vibration for 3 hours	No visible damage Interconnect resistance 0.2 mΩ max
Durability	EIA-364-09C 250 mating/un-mating cycles at 10 cycles per minute. Measure resistance after 250 cycles.	No visible wear or damage to plated surfaces; Interconnect resistance 0.2 mΩ max

Safety and regulatory specifications

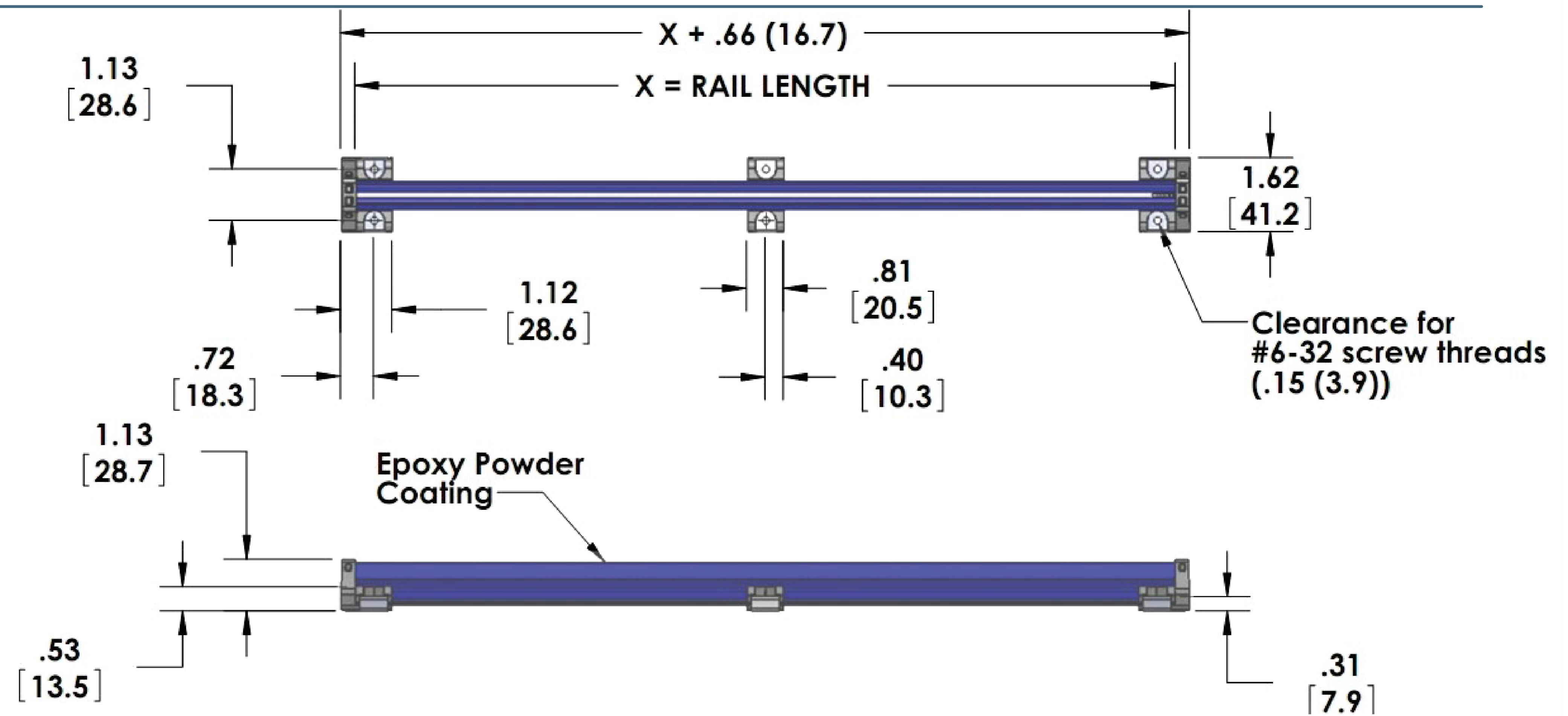
Description	Condition	Value/limits
Safety	IEC 60950 EN 60950 UL 60950	Ratings specific to application
RoHS	IEC Directive 2002/95/EC (Restriction of Hazardous Substances Directive)	< 0.1% Lead (Pb) < 0.1% Mercury (Hg) < 0.01% Cadmium (Cd) < 0.1% Hexavalent Chromium (Cr [VI]) < 0.1% Polybrominated Biphenyls (PBB) < 0.1% Polybrominated Diphenyl Ethers (PBDE) < 0.1% Decabromodiphenyl Ether (DecaBDE)

Interconnect options

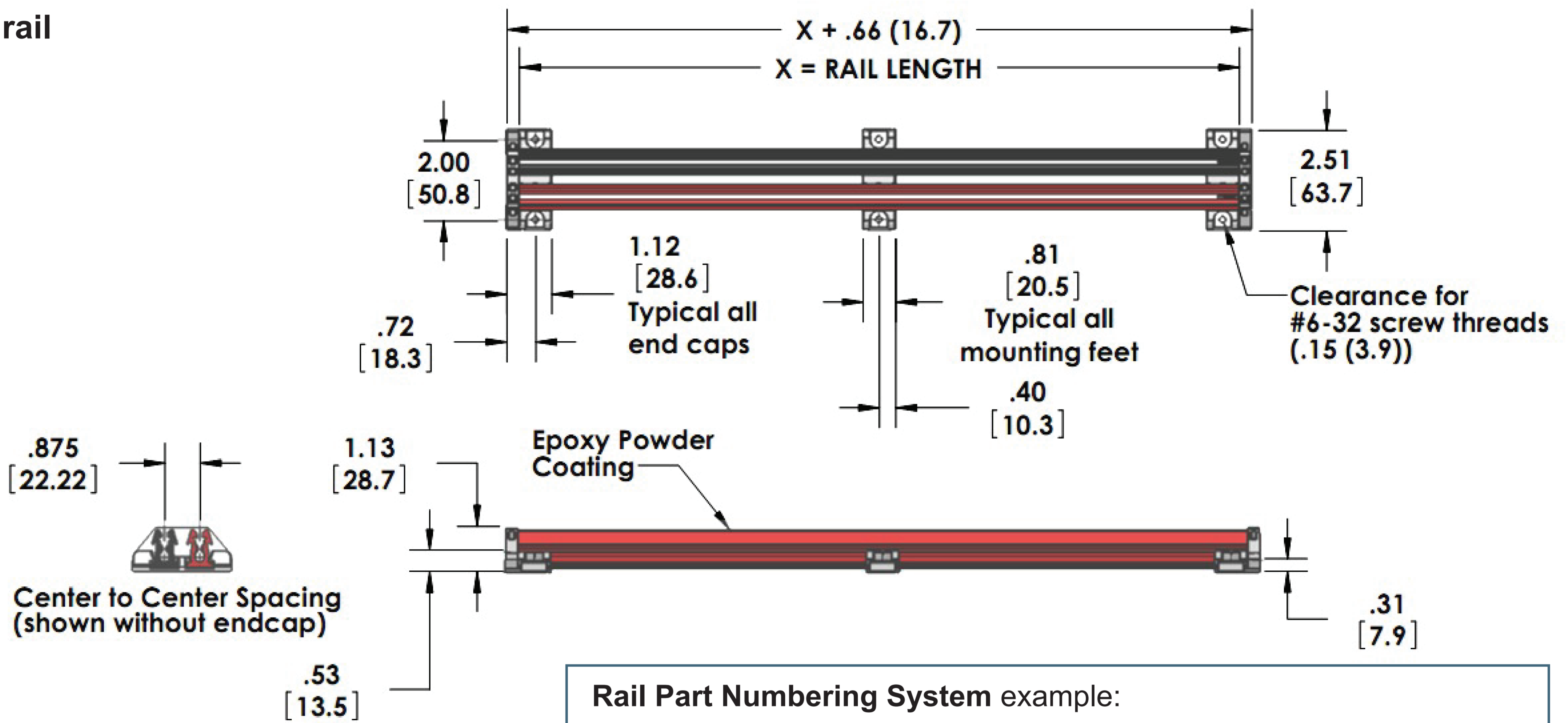
	
<p>Suggested mating blade detail</p> 	<p>Typical printed circuit board configuration</p>
<p>Methode FusionLug can be used to provide a connection to the PowerRail</p>	

PowerRail 750A configurations

Single rail



Dual rail



Rail Part Numbering System example:

S-CPR-750 - 48.0IN - S - BLU

- (BLU) Blue - single rail
- (B/R) Black and Red - dual rail
- (S) Silver over nickel plating
- 48.0 inches (1220mm)
- Standard prefix for 750A PowerRail
- (S) Single, (D) Double