



Laser Bar Submounts in W/Cu

Tungsten copper (W/Cu) submounts with pre-deposited AuSn, for mounting of laser diode bars and arrays.

Material

Grade	90/10 (W/Cu)
Thermal conductivity	185 W/mK
CTE	6.4 ppm/°C

Mechanical dimensions

Min. length and width	1.0 mm x 1.0 mm
Max. length and width	15 x 5 mm
Thickness range	0.25 — 1.5 mm

Tolerances

	Typ.	High spec.
Length and width	± 0.05 mm	± 0.02 mm
Thickness	± 0.05 mm	± 0.01 mm
Edge chipping	< 0.05 mm	< 0.02 mm
Flatness	1µm/mm	0.5 µm/mm
Surface finish	< 1.0µm Ra	< 0.25µm Ra
Critical edge radii	< 30µm	< 5µm

Sharp Edge

The laser bar will usually need to be closely aligned with one edge of the submount. Standard edges are as machined. For critical applications one edge can be made super sharp.

	Standard	Super sharp
Critical edge radii	< 30 µm	< 5 µm
Other edges	< 50 µm	< 50 µm

Metallisations

Various metallisation schemes can be applied. The standard coating is vacuum sputtered Ti/Ni/Pt/Au.

Faces	0.1µm Ti / 2.0µm Ni / 0.2µm Pt / 0.5µm Au
Side walls	~1/3 thickness of faces.

Pre-deposited AuSn

A thin layer of vacuum deposited AuSn can be applied over one or both of the top and bottom faces. The standard alloy ratio is nominally 76 Au/24 Sn, normally at ~3.5 — 5.5 microns thick. The alloy ratio can be tailored for specific applications. The solder layer can also be wrapped over the critical edge to aid solder wetting and minimise solder balling in front of the laser facet.

Patterned AlN and other metal laser mounts

Visit our website for details of our comprehensive capabilities for manufacturing patterned AlN laser mounts together with sharp edge C-mounts, photodiode mounts and other optoelectronic and RF related products.

Images are not to scale

LEW Techniques specialises in the manufacture of miniature components for the mounting of semiconductor devices. Our in-house capabilities include Thin Film, Thick Film and refractory metallising of ceramics and metals, electroplating, precision dicing, laser machining and marking, atmosphere/vacuum brazing and solder assembly.

To ensure end user compatibility, comprehensive in-house testing includes eutectic die bonding, Au wire bonding, shear strength, peel strength, coating thickness and surface finish measurement, heat testing and He leak detection.

To discuss your application in detail please contact our Technical Sales Department who will be pleased to assist you.

