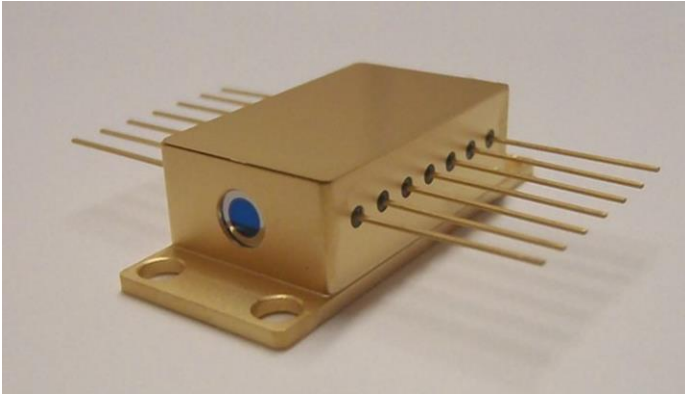


## HERMETICALLY SEALED AND THERMALLY CONTROLLED.

30x12.7x8.9mm<sup>3</sup>



Fibre coupler lasers for OEM'S and system integrators who require specifications and performance not available from off-the-self devices.

The Auerbach from Alter Technology can accommodate various single mode hip structures , from numerous manufacturers over multiple wavelengths in high reliability configurations for Aerospace, Defence and Space markets on prompt lead times. With this approach we can offer defined, optical, electrical, thermal and mechanical performance specs in a range of industry standard packages in prototype and volume quantities.

### Applications

Machine vision, targeting, quantum, technology, metrology, and spectroscopy.

## AUERBACH

Fibre Coupled 14 Pin BTF Sources – DFB/DBR/SLED FP/ Single Channel PIC

### Key Features

- Wide range of wavelengths 0.4<2um. Use of laser chips from multiple manufactures.
- CW operation and pulsed operation.
- Thermally optimised with high performance (12W) TECs to achieve stable optical performance over wide temperature range (100k, max) with integrated temperature sensor for precision control.
- Coefficient of Thermal Expansion (CTE) matched materials.
- High reliability hermetically sealed housing
- Manufactures using space qualified processes.
- Available for volume manufacture
- Serialisation and laser marking
- Free Space – see Drummond for options.

### ALTER TECHNOLOGY

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**TUVNORDGROUP**

## Typical Module Output Specifications

Laser Type	SLED	DBR	DBR	FP
Wavelength (nm)	450	780	1064	1550
Chip Output power (mW)	20	150	120	40
Fibre type	SM405-XP	PM780-HP	PM980-XP	PM1550-XP
Fibre Connector	FC/APC			
Fibre Mode Field diameter (µm)	3.0	5.3	6.6	10.1
Typical coupling efficiency	~30% (-5.2dB)	>50%(-3dB)	>50%(-3dB)	>50%(-3dB)
Ex fibre power (mW)	6	75	60	20

Typical power ex facet is dependent on chip beam divergence, the table is intended for indication only

## Auerbach Chip Design Boundaries

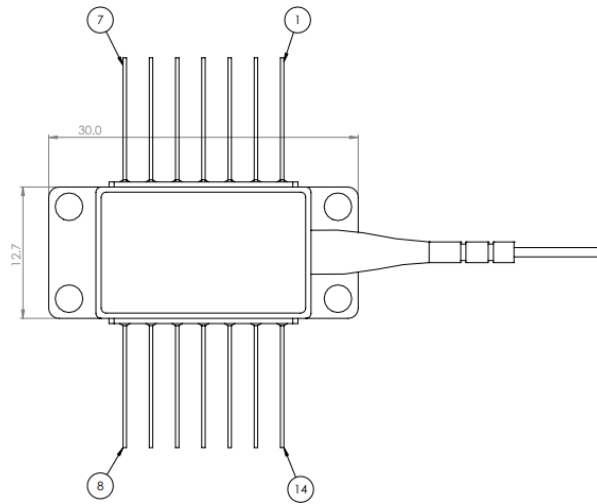
Auerbach		14-PIN BUTTERFLY PIGTAILED PACKAGE - Characteristics/ Specification*				
Description	Symbol	Min	Typical	Max	Comment	
<b>Chip Parameters</b>						
Wavelength (nm)	$\lambda$	450		1900	NIR	
Optical Output Power (mW)	P <sub>o</sub>	5		300	Dependent upon laser diode efficiency	
Chip Beam Divergence (deg)	Parallel (Y)	$\theta_h$	11.5**		FWHM	
	Perpendicular (X)	$\theta_v$	30.0**			
Submount Footprint (mm x mm)				6 x 6		
Internal PD Monitoring (nm)	$\lambda$	450		1900		
<b>Generic Package Parameters</b>						
Coupling Efficiency (dB) into fibre		-3dB			SM Fibre	
Drive Current (A)			0.3			
TEC Performance	$\Delta T(\text{Typ})$		60 K		Max heat load (I <sub>max</sub> 3 Amp)	
Operating Temperature (°C)	T <sub>op</sub>	-20	25	85		
Diode Operating Temperature (°C)	T <sub>op</sub>	10	25	35		
Storage Temperature (C)	T <sub>st</sub>	-40	25	85		

\* All values are subject to Laser Diode availability.

## PIN Out

Pin Out	Connection	Pin Out	Connection
1	TEC Cooler (+)	8	N/C
2	Thermistor	9	N/C
3	N/C	10	Laser diode (+)
4	N/C	11	Laser diode (-)
5	Thermistor	12	N/C
6	N/C	13	N/C
7	N/C	14	TEC Cooler (-)

## Mechanical Dimensions



## Custom Capability

- Different inert gas sealing environments
- Single mode VCSEL options
- High current input for TEC
- MM fibre
- Space certification through our partners, Alter Technology Spain
- Internal isolation
- Detectors – APDs, PINs & SPADs
- FC/PC connections, others on request

## NOTES

- Alter Technology UK offers a limited warranty on workmanship for all platforms as they are supplied in the understanding they are engineering samples for R&D applications/OEM Integration and as such laser safety/system classification is the responsibility of the integrator. For full details of this warranty coverage, please contact Alter Technology.
- Please note that Alter Technology provides no reliability or life span data or warranty on these modules.
- \* Fibre coupling depends greatly on chip beam divergence.
- Module should be mounted on an appropriate heat sink with a thermal compound

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