

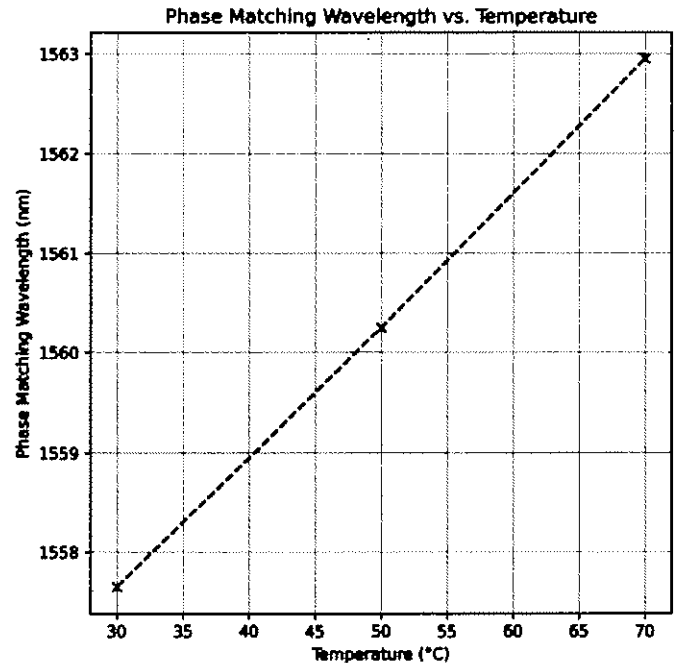
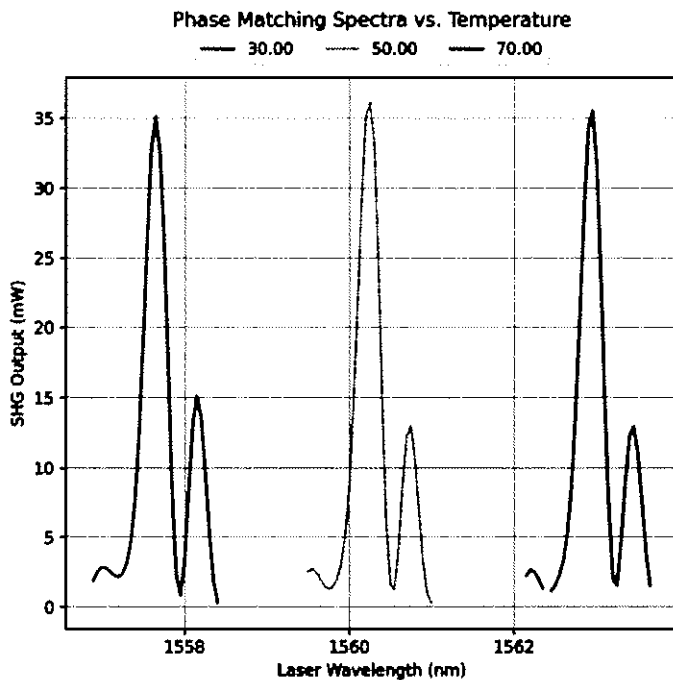
Clip Mounted Waveguide Chip

P.N WG-1560-40

S.N. W0181_S08_R1

V. 2.0/2022

Waveguide Data



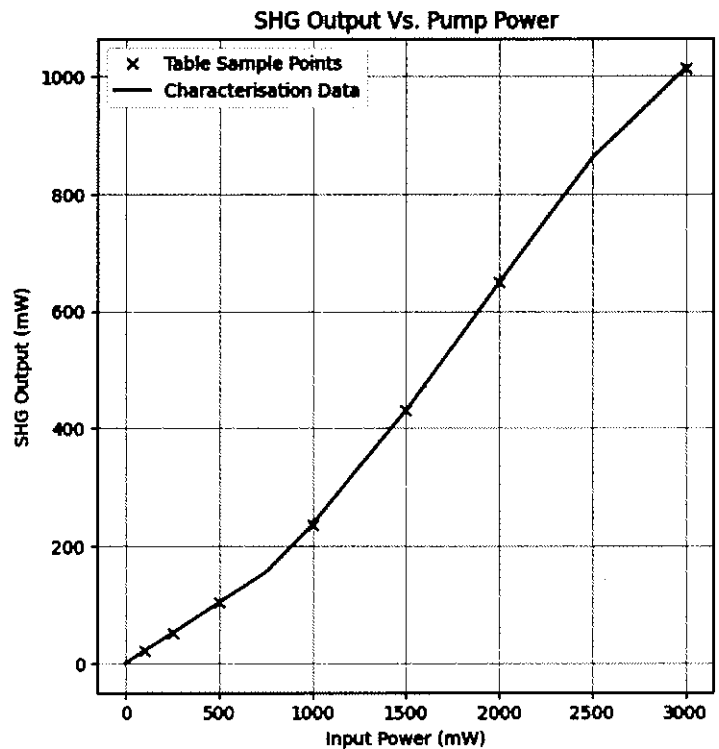
Note: Temperatures may be offset ± 2 °C from the specified values subject to OC3 calibration and OC3 Cable length

P.N. WG-1560-40

S.N. W0181_S08_R1

Waveguide 4

Waveguide length [mm]	40
Period [μ m]	18.7
Operating Temperature for 1560 nm SHG [°C]	50.0
Temperature tuning Coeff. [$\text{nm}/^\circ\text{C}$]	0.132
Temperature Tuning Range [°C]	30-110
CW pump launch [mW]	300
CW SHG output [mW]	36.1
Typical efficiency @300mW [%]	12.0
Input Polarisation	TM



Pump (mW)	100	250	500	1000	1500	2000	3000
SHG (mW)	21	52	104	235	430	648	1013



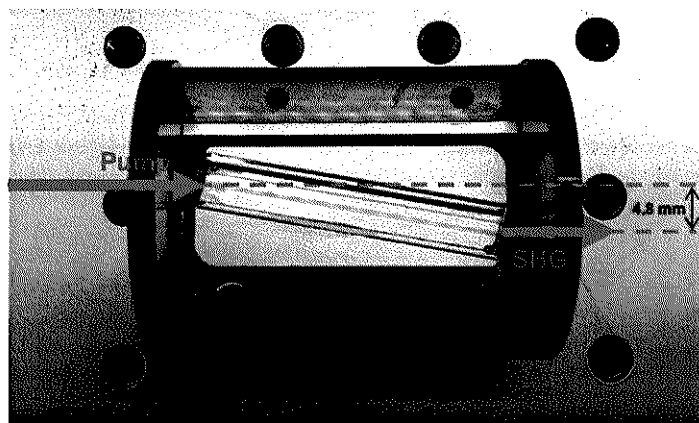
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Clip Mounted Waveguide Details

This datasheet provides general information and characterisation data for the specified Covesion Waveguide

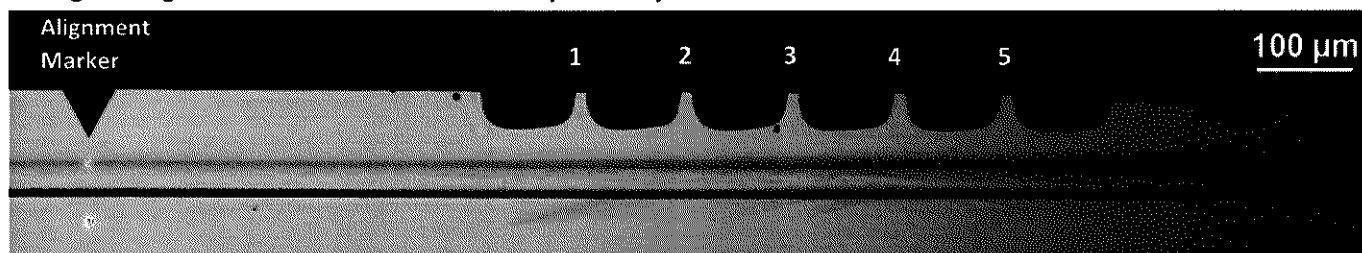


The Covesion Waveguide Clips have been designed to account for the end facet angles of the waveguide chip to allow for faster integration.

When placed into a Covesion Oven that is aligned parallel to the optical axis, the angle of the clip accounts for refraction at the interfaces when coupling into and out of the waveguide.

This simplifies angle requirements within experimental layouts, resulting in a horizontal offset of the axis of 4.8 mm between the input and output of the waveguide.

Ridge Waveguide Structure – For Illustration Purposes Only



Covesion Waveguides are manufactured with 5 waveguides per chip. This datasheet refers to WAVEGUIDE 4.

The Waveguides are numbered 1 to 5, with waveguide 1 being closest to the alignment marker that runs down one side of the chip. The other waveguides on this chip are not specified, but may be functional using different phase matching conditions.

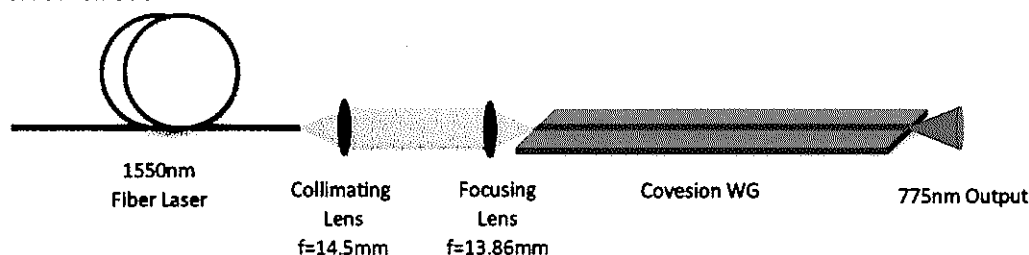
Waveguide Chip Dimensions

Substrate Thickness (z)	Substrate Width (y)	Substrate Length (x)	End Facet Angle
1.00 ± 0.05 mm	5.0 ± 0.2 mm	40.0 ± 0.1 mm	5.35 °

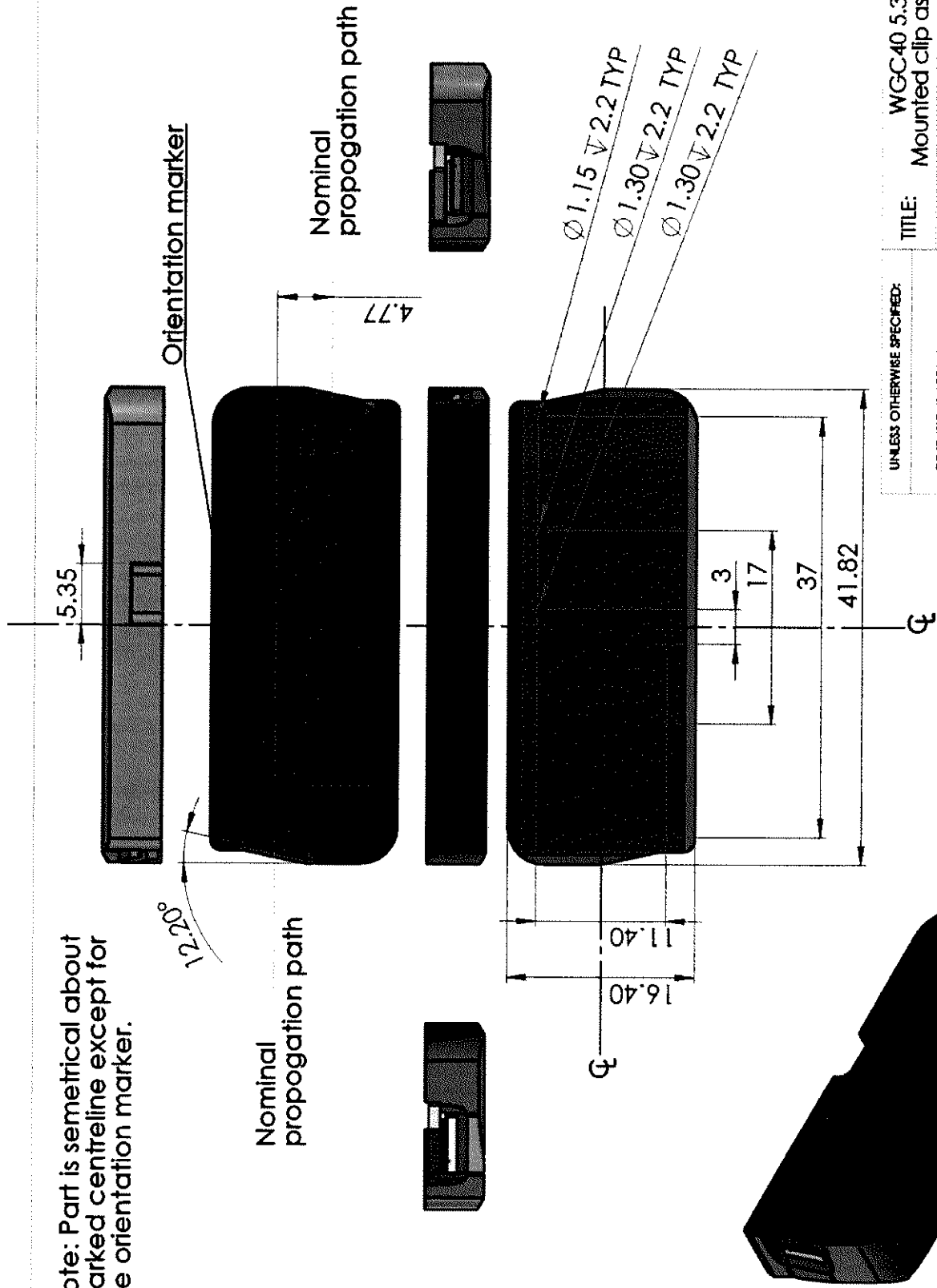
Waveguide Features

- The SHG device base material is 5% Magnesium doped Lithium Niobate
- A Zinc indiffused planar layer and diced ridge structures define the waveguides
- Dual coating to less than R<1% at 775nm & 1550nm on both input/ output facets
- Typical coupling efficiencies with a lensed launch: ~70%
- Set-up for lensed Launch, Thorlabs lens: Zoom collimator C220-TMD-B; Aspheric focusing: C560-TME-C

Waveguide Test Schematic



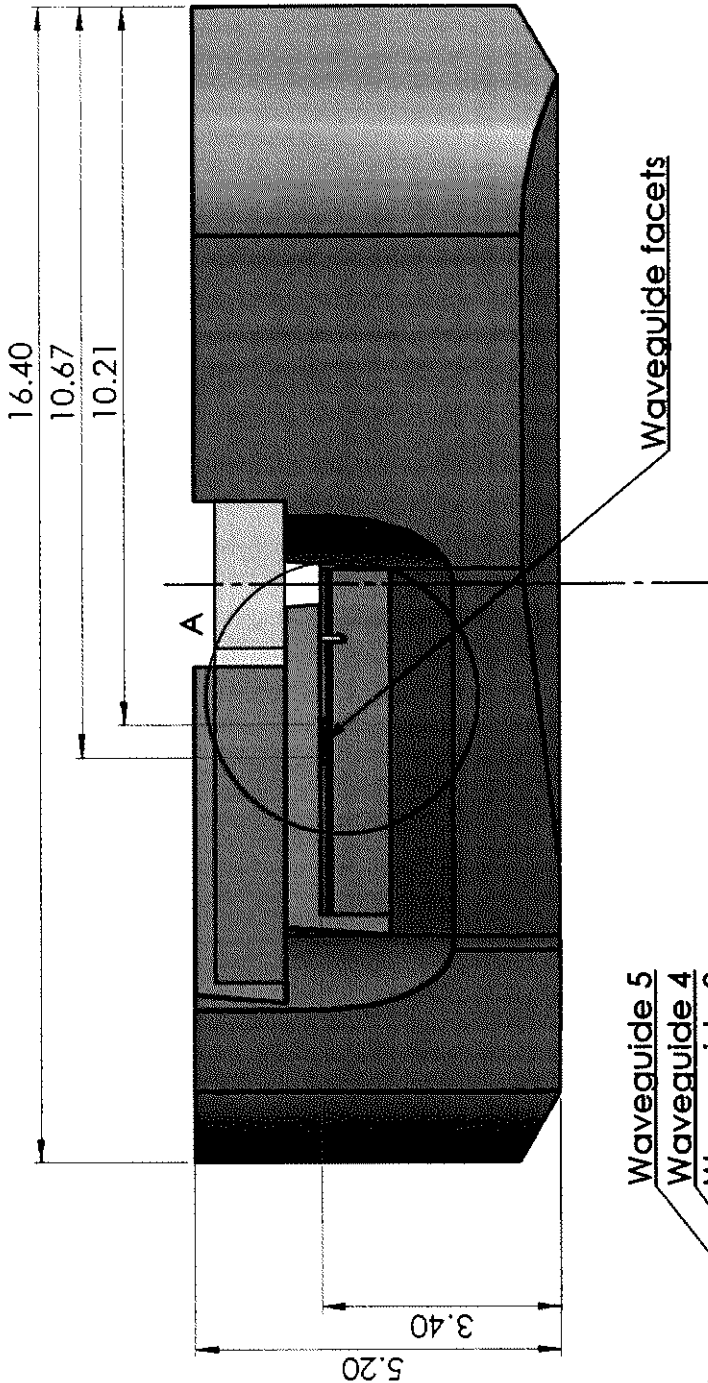
Note: Part is semetrical about marked centreline except for the orientation marker.



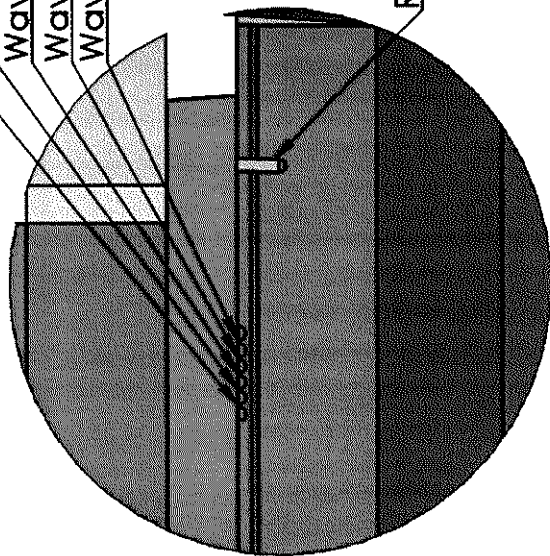
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETRES WHERE NOT STATED. DIMENSIONS ARE TAKEN TO BE SYMMETRICAL	TITLE: WGC40 5.35° Mounted clip assembly				REV 1.1
	SIZE DWG. NO.		A WGC40_5PT35ASSY		
	CLIP MATERIAL		Aluminium 6063-T651		
	FINISH		Light bead blast		
	TOLERANCES: ± 0.2mm		DO NOT SCALE DRAWING		
♀ PROMISEARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF COVESION LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF COVESION LTD. IS PROHIBITED.					

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Waveguide 5
Waveguide 4
Waveguide 3
Waveguide 2
Waveguide 1



Reference mark

DETAIL A
SCALE 20:1

TITLE: WGC40 5.35°
Mounted clip assembly



SIZE DWG. NO. REV
A WGC40_5PT35ASSY 1.1

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETRES
WHERE NOT STATED. DIMENSIONS
ARE TAKEN TO BE SYMMETRICAL

TOLERANCES: ± 0.2mm

CLIP MATERIAL Aluminium
6062-T6S1

FINISH Light bead blast

DO NOT SCALE DRAWING

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SCALE: 10:1 16/12/2020 SHEET 2 OF 2



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(e) sales@covesion.com (w) www.covesion.com

Vat No: GB 943 1896 00 : EORI 943 1896 00 000

Commercial Invoice

Invoice Number 4167

Invoice Date 08/09/2023

INVOICE ADDRESS

California Insitute of Technology
Purchasing Services
1200 E California Blvd
Mail Code 103-6
Pasadena, CA 91125
United States

DELIVERY ADDRESS

California Insitute of Technology
Attn: Lee McCuller MC 149-33
391 S Holliston Ave
Pasadena, CA 91106
United States

Order Number 4140

Customer Order Number 6A-S613285

Customer Account CALI001

Contact Name Lee P. McCuller

Contact Details (626) 395-2631

EORI NUMBER

Quotation Number CQ-CALT032b

Item	Description	HS Code	Quantity	USD Unit Price	Total
WG-CBAND	WG-1560-40		1	\$ 6,633.00	6,633.00
PVP2	PVP2: Long M4 Post Mount		1	\$ 131.00	131.00
PV40	PV40: 40mm Oven		1	\$ 1,392.00	1,392.00
WGCK40	Waveguide Clip Kit 40mm		1	\$ 447.00	447.00
OC3	OC3: Covesion Temperature Controller		1	\$ 1,467.00	1,467.00

Product Harmonisation Code for all items:

9002900090 (crystals) / 9032900090 (accessories)

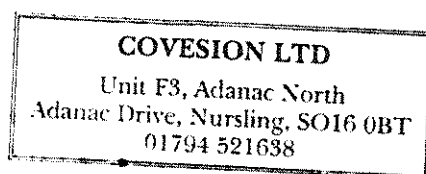
"Optical Crystals used in the colour conversion of laser light and components for the mounting and thermal stability of such crystals"

The exporter of the products covered by this document (Custom Authorisation Number 943 1896 00 000) declares that, except where otherwise clearly indicated, these products are of UK preferential origin.

Signature of the exporter & name of the person signing:

Authorised signatory:

08/09/2023



Discount \$ 1,007.00

Total Net \$ 10,070.00

Net Carriage \$ 100.00

Invoice Total \$ 9,163.00

Delivery Note

Delivery Address

California Insitute of Technology
Attn: Lee McCuller MC 149-33
391 S Holliston Ave
Pasadena, CA 91106
United States

Delivery Note Number:

DEL0415

Date:

08/09/2023

Customer Reference:

CALI001

Number of Packages:

1

Total Weight:

2.00

Courier:

FEDEX

Order Number	Description	Qty Despatched
4140	WG-CBAND WG-1560-40 W0181_S08_R1.	1.00
4140	PVP2 PVP2: Long M4 Post Mount	1.00
4140	PV40 PV40: 40mm Oven	1.00
4140	BCO-05583	1.00
4140	WGCK40 Waveguide Clip Kit 40mm	1.00
4140	OC3 OC3: Covesion Temperature Controller COV1396	1.00

Covesion Ltd

Registered in England, Company No 06338847 Registered Office: Unit F3 Adanac North, Adanac Drive, Nursling
Southampton, SO16 0BT VAT Reg: 943 1896 00

