Sintec Optronics

Laser Pump Chamber

Single or dual lamp high-efficiency laser pump chambers can accommodate laser rods of 3 to 10mm in diameter and up to 180mm in length.

A laser pump chamber consists of

- Stainless steel or non-metal body
- Gold-coated elliptical pump cavity or alumina diffuse reflector (ceramic reflector)
- Series or parallel cooling path
- High UV absorbing flow tubes
- Crystal & lamp water jackets
- Parallel lamp trigger connector or series trigger
- Coolant fitting
- O-rings
- Lamp (option)
- Laser rod (option)

1. Gold-coated laser pump chambers

1) single-lamp pump chambers

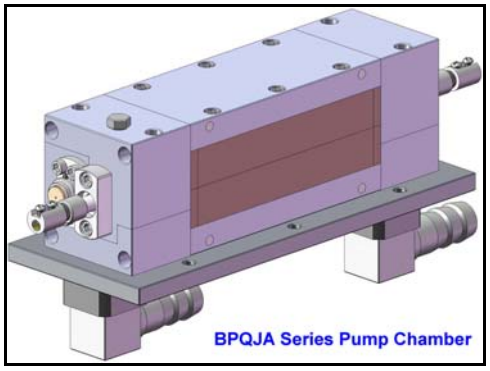
A: Model number: BPQJA-xxx

BPQJA: single lamp and single rod gold pump chambers.
xxx: the length of the gold reflector or the arc length of the lamp.

Typical Pump Chambers:

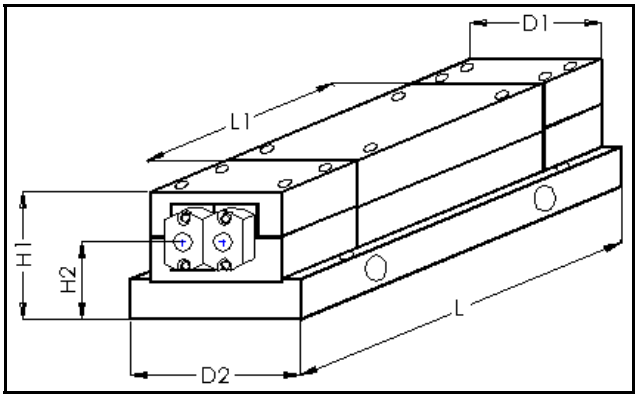
Model	Length of reflector	Overall length	YAG rod length	Typical lamp
BPQJA-100	100mm	190mm	≥110mm	NL9764, ST5166, ST5171
BPQJA-110	110mm	200mm	≥120mm	
BPQJA-120	120mm	210mm	≥130mm	ST5647
BPQJA-130	130mm	220mm	≥140mm	

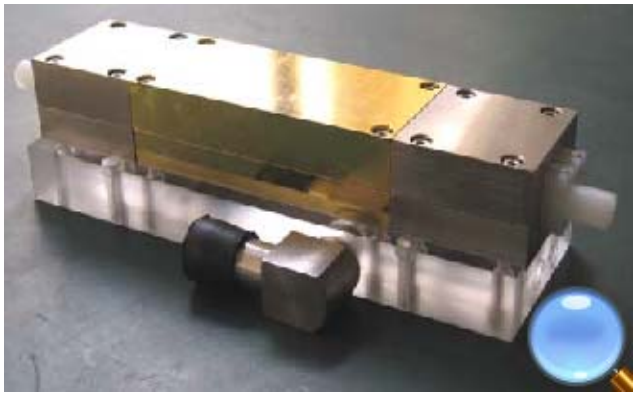
Remark: suitable to YAG rods of 3-9mm in diameter and lamps of 4-10mm in outside diameter.


BPQJA Series Pump Chamber

B: Model number: BPQJA-xxxCD

BPQJA: single lamp and single rod gold pump chambers.
xxx: the length of the gold reflector or the arc length of the lamp.
CD: CD series chamber





Model	BPQJA-120CD	BPQJA-130CD	BPQJA-140CD
Shape of reflector	gold coated ellipse		
Length of reflector, L1	120mm	130mm	140mm
Width of chamber, D1	56mm		
Width of base, D2	76mm		
Length of base, L	236mm	246mm	256mm
Overall height, H1	61mm		
Central height, H2	42mm		
Hole dia. for lamp	≤Φ8.5		
Hole dia. for YAG rod	≤Φ8.5		
Mounting holes spacing (L×W)	144×66mm		
Max. input electric power:	≤5000W		
Recommended lamp dimension	Φ8×120×270mm	Φ8×130×280mm	Φ8×140×290mm
Flow rate (l/min)	25 l/min		
Water cooling input location	Side or base		

Remark：Suitable rod diameter is 3-5mm.

2) Dual-lamp pump chambers

Model number: BPQJB-xxx

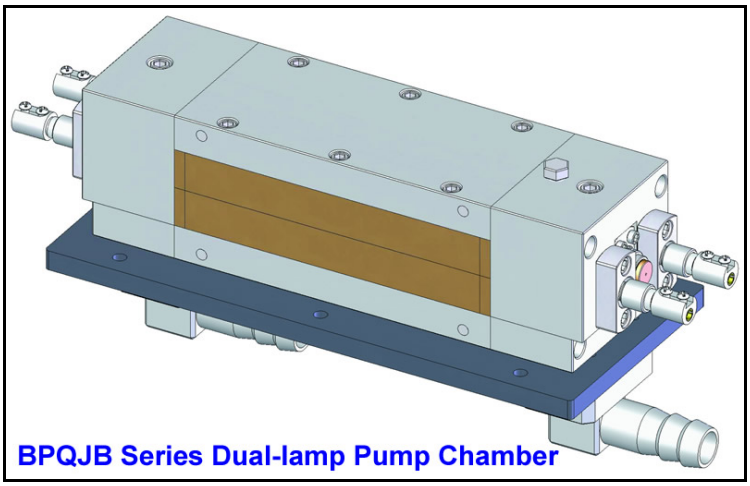
BPQJB: dual lamp and single rod gold pump chambers.

xxx: the length of the gold reflector or the arc length of the lamp.

Typical Pump Chambers:

Model	Length of reflector	Overall length	YAG rod length	Typical lamp
BPQJB-130	130mm	228mm	≥140mm	
BPQJB-140	140mm	238mm	≥150mm	
BPQJB-150	150mm	248mm	≥160mm	NL5121, NL9762
BPQJB-170	170mm	268mm	≥180mm	

Remark: suitable to YAG rods of 3-9mm in diameter and lamps of 4-10mm in outside diameter.



BPQJB Series Dual-lamp Pump Chamber

3) High power Dual-lamp pump chambers

Model number: CHBA-xxx-yy-xxx

BPQJB: Dual lamp and single rod gold pump chambers.
xxx: Reflector length
yy: Cooling method, DC for Dry Cooling or WC for Water Cooling
zz: Average power, 500 & 650W are available

Dry cooling, Laser head fitted with YAG rod and two flashlamps with flying leads. This laser head is designed to operate with a dry gold cavity reflector similar to that of the Trumpf laser head.

Laser Head fitted with YAG rod and two flashlamps. These are fully immersed in DI water. This laser head is designed to operate with clean DI water . The laser head is similar to that of the Rofin Baasel 500W unit.

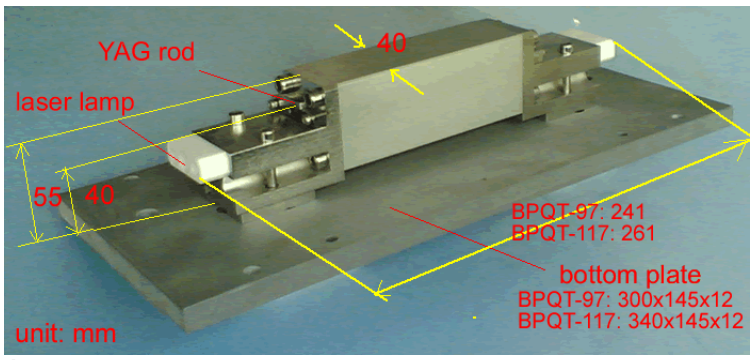
Applications:

- Laser cutting
- Laser welding

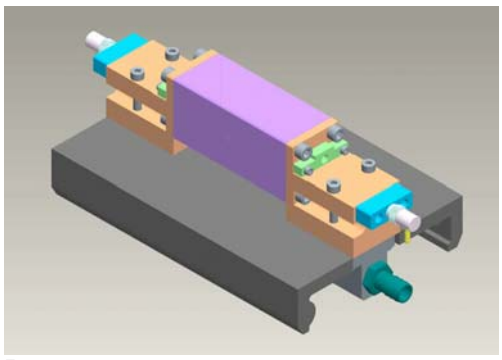
Specifications:

Model	Yag Rod (mm)	Lamp	configuration	Dimension (WxLxH, mm)
SCHBA-180-DC-500	Dia8x190	ST180DC	Dry cooling, Laser head fitted with YAG rod and two flashlamps with flying leads.	80 x 265 x 74
SCHBA-180-DC-650	Dia8x190	ST180DC	Dry cooling, Laser head fitted with YAG rod and two flashlamps with flying leads.	80 x 265 x 74
SHBA-180-DC	Dia8x190	ST180DC	Dry cooling laser head but less YAG rod but includes two flashlamps.	80 x 265 x 74
SCHBA-180-WC-500	Dia8x190	ST180	Laser Head fitted with YAG rod and two flashlamps. These are fully immersed in DI water.	104 x 334 x 74
SCHBA-180-WC-650	Dia8x190	ST180	Laser Head fitted with YAG rod and two flashlamps. These are fully immersed in DI water.	104 x 334 x 74
SHBA-180-WC	Dia8x190	ST180	Water cooling laser head but less YAG rod but includes two flashlamps .	104 x 334 x 74

2. Ceramic laser pump chambers



A type



B type

Model number: BPQT-xxxD

BPQT: ceramic pump chambers.
xxx: the length of the ceramic reflector.
D: D means dual lamp chamber and no D means single lamp chamber.

(1) single lamp and single rod
- Model: BPQT-97
- Ceramic reflector TCT97 used
- Matchable YAG rods: ϕ(3-7)x120mm or longer
- Matchable lamps: ST5166, NL9764 (maximum OD is 8mm.)
- Suitable for 50W to 100W YAG lasers
- Dimension: 240x55x40mm

(2) single lamp and single rod
- Model: BPQT-117
- Ceramic reflector TCT117 used
- Matchable YAG rods: ϕ(3-7)x140mm or longer
- Matchable lamps: ST256 (maximum OD is 8mm, overall length >270mm.)
- Suitable for 80W to 150W YAG lasers
- Dimension: 260x55x40mm

(3) dual-lamp cavity (double lamp and single rod)
- Model: BPQT-130D
- Ceramic reflector BAB-350
- Matchable YAG rods: dia. 3-8mm, length 140mm or longer
- Matchable lamps: arc length 130-140mm or longer & OAL 270mm.
- Suitable for 250W to 300W YAG lasers

(4) dual-lamp pump chamber (2pcs lamps and one rod)
- Model: BPQT-150DW
- Ceramic reflector BAB492
- Matchable YAG rods: ϕ(3-8)x160mm or longer
- Matchable lamps: lamps with the arc length of around150mm and overall length of 310mm, typically STK-8x150x310-5x10, STX-8x150x310-5x10, NL9762.
- Suitable for 450W to 500W YAG lasers

(6) dual-lamp pump chamber (2pcs lamps and one rod)
- Model: BPQT-170DW
- Ceramic reflector BAB497
- Matchable YAG rods: ϕ(3-8)x180mm or longer
- Matchable lamps: lamps with the arc length of around170mm and overall length of 330mm, typically STK-8x170x330-5x10, STX-8x170x330-5x10.
- Suitable for 500W to 600W YAG lasers

Note:

1. External mechanical dimensions can be redesigned to meet customer's exact requirements;
2. Laser rods customized to your exact requirements available upon request. Please tell us the diameter of the YAG rod when placing the order.
3. Detailed drawing and dimensions can be found from our websites.
5. If you want us to design a specific pump chamber, you need to tell us the specifications of YAG rod and lamps as follows:
   1) YAG rod: diameter and length;
   2) Lamp, dimension of arc length, outside diameter, overall length, end type (base diameter and length) etc or model number. Please refer to our websites for more details of lamps.

Ordering Information:
- When placing the order for the pump chamber, the buyer should tell us the dimensions of the rod and the lamp or lamp's model so that we can give right O-rings.
- lamp connectors are not included in the pump chamber.
- The lamp and rod are not integrated into the pump chamber for convenient shipping. If integration is needed, the buyer takes its risk of the rod and lamp to be broken during the shipping. In general, separate package of lamp, rod and pump chamber are safer.

Combination of Typical Pump Chambers

Model	Reflector	YAG rod	Lamp model	Typical laser power
BPQT-97	BAB192	4x120mm	CW: STK-8x100x256-5x10 ST5166 Pulsed: STX-8x100x256-5x10 NL9764	50-70W
BPQT-117	BAB330	4x140mm	CW: STK-8x125x270-5x10 ST256 Pulsed: STX-8x125x270-5x10	80-150W
BPQT-130DW	BAB350	6x140mm	CW: STK-8x130x285-5x10 Pulsed: STX-8x130x285-5x10	250-300W
BPQT-150DW	BAB492	8x160mm	CW: STK-8x150x310-5x10 Pulsed: STX-8x150x310-5x10 NL9762	450-500W
BPQT-170DW	BAB497	8x180mm	CW: STK-8x170x330-5x10 Pulsed: STX-8x170x330-5x10	500-600W

Remark: For a same pump chamber, larger rod will output much higher laser power but laser beam quality becomes worse.

How to Select a Pump Chamber

The most important parameter to select a pump chamber is the average power you want from the pump chamber. Once you finalise the power you want, then please remember the following points in mind:

- (reflector length) = (rod length) – 10mm for a gold chamber.
- (arc length of lamp) = (reflector length)
- (overall length of lamp) = (arc length) + 160mm (here 160mm is the number according to our experience)
- (internal diameter of lamp) = (rod diameter)
- For STK and STX series lamps, glass tube's thickness is 1mm.
- (BASE diameter) = (outside diameter) – 2.5mm. In most cases, it is 3, 3.5, 4, 4.5, 5, 5.5 etc
- (BASE length) = 8mm or 10mm, which we recommend.

Form to Order Custom-made Pump Chamber

Company name				Contact person	
Phone		Fax		Email	
Product name				Quantity	
Required delivery date		Remark			

Parameters

Chamber dimension	Beam height H	Chamber height H2	Chamber width W	Chamber length L	Reflector length L3

Lamp model or maker				Base connector			
Lamp dimension	OVL	L	L2	L3	ϕ1	ϕ2	Base diameter	Base length

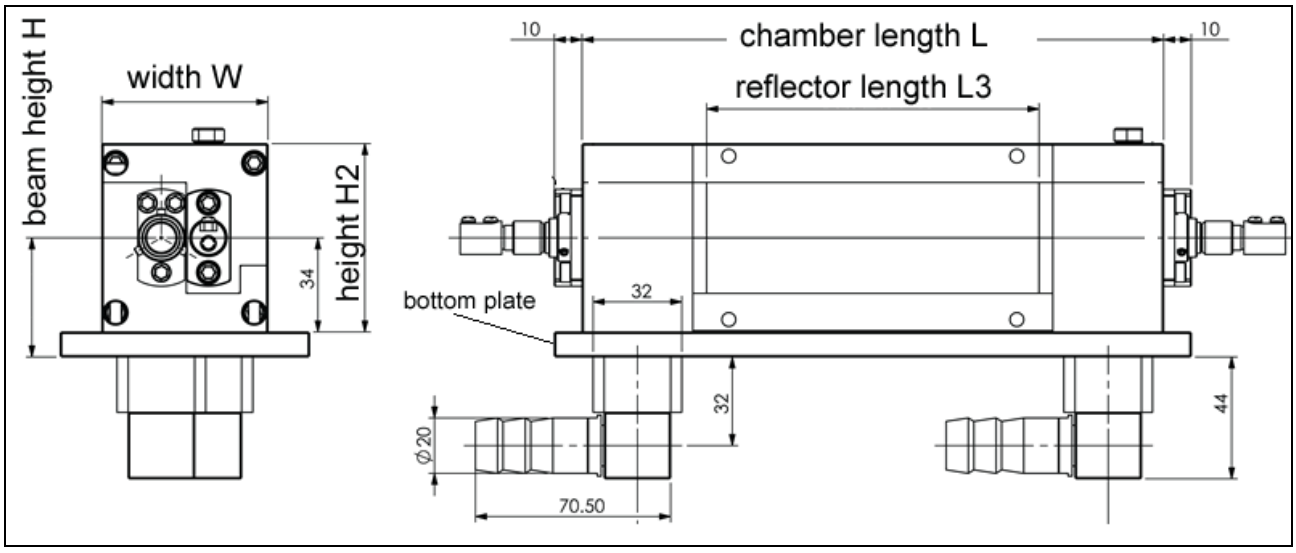
Water connector			
Bottom plate	(SS, plastic etc)	YAG rod dimension	（diameter x length）

Bottom plate dimension	W		L		C1		C2	

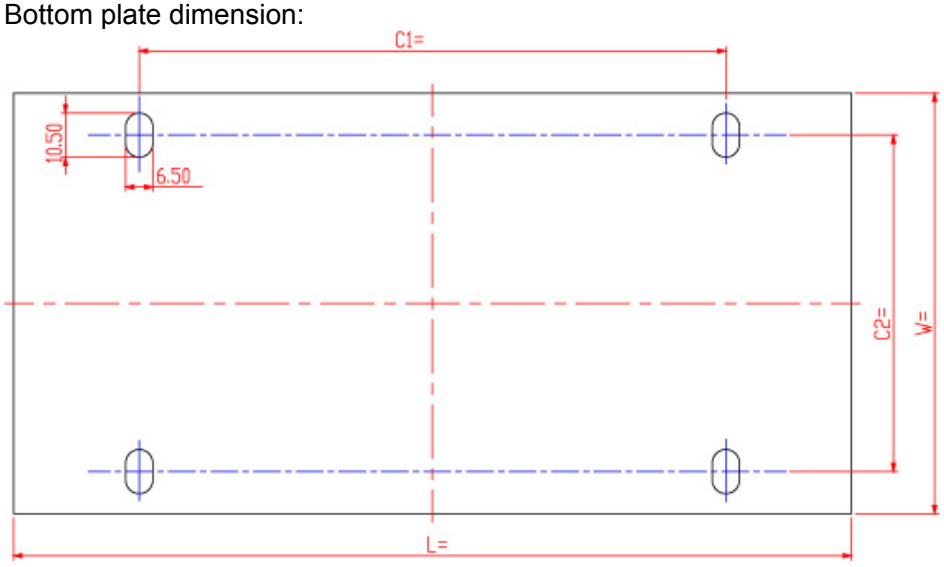
Others:

We can make the pump chamber according to your specific requirements. 1) If you are using a pump chamber, please tell us the dimensions or send us a used chamber; 2) if you are choosing a pump chamber, please tell us the dimensions of your lamp and YAG rod; 3) if you are chossing a pump chamber, a lamp and a YAG rod, please tell us the requirements on laser power, laser beam diameter and pulse or CW modes and we will finish all others to make a chamber for you.

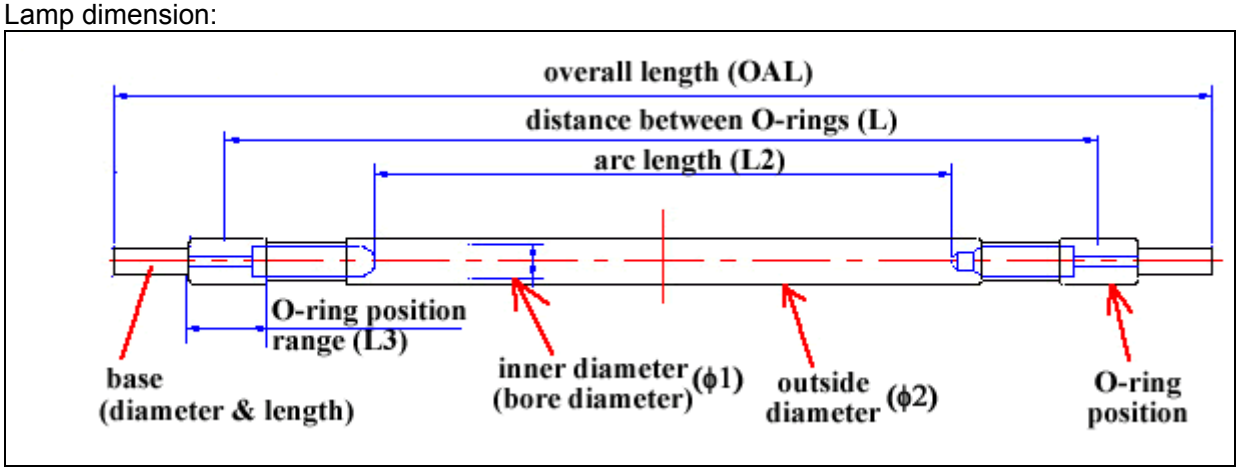
We guarantee our chamber! We believe that your laser must be high-quality if you use our chambers!



Bottom plate dimension:



Lamp dimension:



Ceramic Reflectors for Solid State Laser Pumping

Solid-state lasers include all optically pumped lasers in which the gain medium is a solid at room temperature.

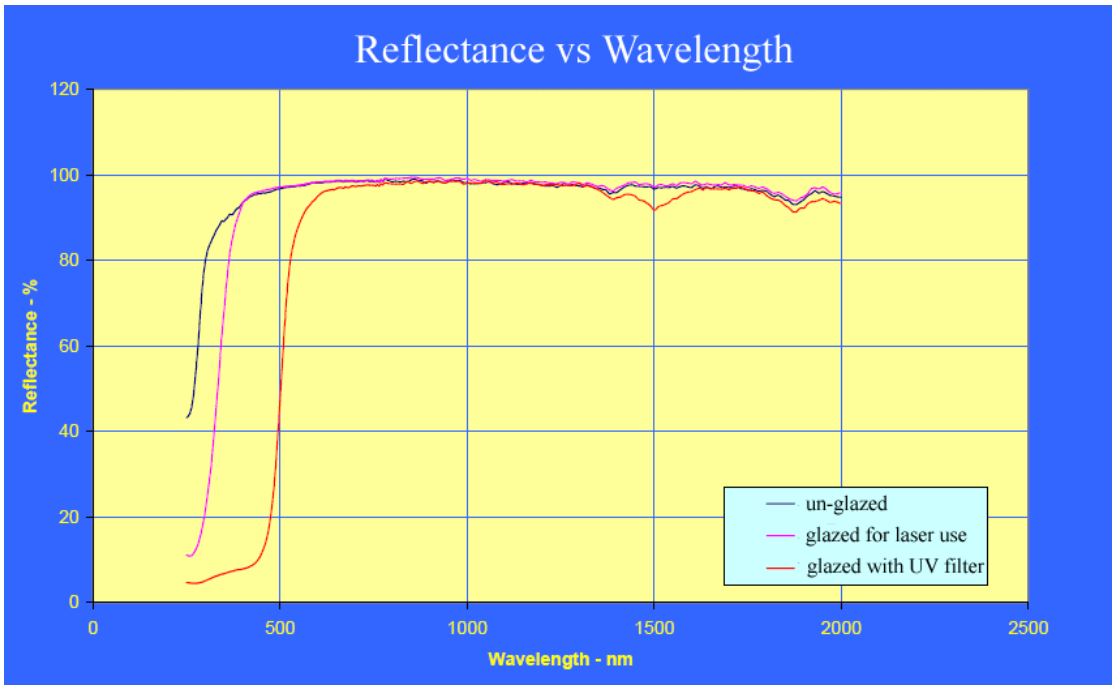
Customer requirements will differ dependant upon the type of laser, laser rod, source radiation (and source power) being employed and the particular end use of the laser. All, however, require a high reflectance material to form the pumping chamber cavity surrounding the laser rod and lamp. The efficiency in transfer of radiation from the source to the laser rod (referred to as optical coupling) determines to a large extent the overall efficiency of the laser system. The cavity walls must therefore have a high reflectivity at the absorption bands of the laser material.

Ceramic reflectors supplied by us work particularly well in Ruby and Nd:YAG laser pumping chambers and can be a highly cost effective alternative to metal coated reflectors. They are also used extensively as reflectors in housings for high intensity lamps.

- resists chemical attack
- has high strength
- has a high reflectivity over a broad wavelength band
- has good thermal conductivity and
- excellent dimensional and electrical stability at all operating temperatures.

Independent tests on our alumina have shown reflectance figures in excess of 96% (typically 97-98%) over the 500 nm to 2000 nm wavelengths. The material provides a highly diffuse reflectance, behaving as a bulk reflector of the source radiation by both reflecting and refracting light back into the cavity.

Pump radiation that has a longer wavelength than the stimulated emission does not contribute to the laser output but does heat up the laser crystal, which causes optical distortions affecting the quality of the laser output. For this reason cavities are therefore often water or liquid cooled and so need to be able to withstand the erosive action of the fluid, absorb the generated heat and remain dimensionally stable.



Our reflectors can be glazed both inside the cavity and around the outer edges using a highly reflective glaze that seals the ceramic against ingress of cooling fluids that may alter the refractive index, introduce impurities and reduce reflectance and efficiencies. Glazes can also act as filters and our yellow glazed reflectors have been used successfully in certain applications. The visible yellow colour is complementary to the spectral colours violet and indigo and effectively absorbs these wavelengths up to around 450 nm.

Properties of Ceramics

Description

A porous alumina ceramic of 99.7% Al_2O_3 content, used extensively for long-life laser reflectors. This material is sintered at high temperatures to achieve a controlled porosity.

Prime features

- Surfaces can be sealed and coated with a solarization-resistant glaze to give high bulk reflectivity
- 97.8% reflectance efficiency at 1000nm
- Reflectance efficiency exceeds 96% across the wavelength range 500-2000nm *(see curve)*
- Controlled porosity
- Good thermal conductivity
- High electrical resistivity

Typical applications

- Pumping chambers for Nd:YAG lasers — low to high power, single or multiple lamp designs. Pumping chamber reflectors of this material are virtually indestructible, and prove a highly cost effective alternative to metal coated types.

Specifications

- Quality Assurance to BS EN 9001:2000

Production capabilities

- Components up to 250mm long and 80mm wide/diameter manufactured as standard
- Larger components manufactured to development contracts
- One-piece or split-cavity designs
- Prototype, batch and volume production

Physical properties

Color	White
Bulk density (fired), Mg/m^3	3.2
Porosity (apparent), % nominal	20
Flexural strength (ASTM C1161, 3-point), MPa	150
Thermal expansion coefficient	
200-500C, 10^{-6}/C	7.9
200-1000C, 10^{-6}/C	9.0

Ceramic Reflectors For Lamp-pumped Solid-state Lasers:
BAB – the external shape is round;
ZAB – the external shape is irregular
LAK – the external shape is rectangular but one side is concave;
EAB - the external shape is rectangular
GAZ - the external shape is triangular

Model	Length	Distance*	Hole height	Hole length	Remark
ZAB-S04-30	30	6	8	12	Rectangle + circular
ZAB-S05-30	30	7.62	8	12	Rectangle + circular
ZAB-S03	45		6	16	Rectangle + circular
ZAB-S04-50	50	6	8	12	Rectangle + circular
ZAB-S05-50	50	7.62	8	12	Rectangle + circular
ZAB-S01	59.5		8	17	Rectangle + circular
ZAB-S02	60		9	30	Rectangle + circular
ZAB205	77	11	11	22	Rectangle, single lamp & single rod
ZAB198	115	26	16		Rectangle, single lamp & single rod
ZAB146 (TCT142D)	142	27	39		Rectangle, dual-lamp & single rod
LAK283	48	11.4			Elliptic, single lamp & single rod
LAK306	48	11.4			Elliptic, single lamp & single rod
LAK317	48	11.4			Elliptic, single lamp & single rod
LAK396	70		12	21	Elliptic, single lamp & single rod
LAK046	94	9			Rectangle, single lamp & single rod
LAK396-100	100		12	21	Elliptic, single lamp & single rod
LAK396-120	120		12	21	Elliptic, single lamp & single rod
LAK396-140	140		12	21	Elliptic, single lamp & single rod
LAK311	145	32			Rectangle, dual-lamp & single rod
LAK396-150	150		12	21	Elliptic, single lamp & single rod
LAK331	160.5	27.5			Rectangle, dual-lamp & single rod
LAK391	186	32			Rectangle, dual-lamp & single rod
BAB259	64	8.5	8	16.5	Cylinder, single lamp & single rod
BAB373	71.5				Elliptic, single lamp & single rod
BAB-S06-89	89	10	9.3	19.3	Cylinder, single lamp & single rod
BAB-S04	92				Elliptic, single lamp & single rod
BAB192 (TCT97, BAB349)	97		12	22	Cylinder, single lamp & single rod
BAB311	97	12.7	15	27.7	Cylinder, single lamp & single rod
BAB275	100		14.4	28.4	Cylinder, single lamp & single rod
BAB283	100		17	32	Cylinder, single lamp & single rod
BAB299	100		17	45	Elliptic, single lamp & single rod
BAB281	100		18	34	Cylinder, single lamp & single rod
BAB228	115		12	22	Cylinder, single lamp & single rod
BAB330 (TCT117)	117		12	22	Cylinder, single lamp & single rod
BAB275-120	120		14.4	28.4	Cylinder, single lamp & single rod
BAB399	120		16	43	Cylinder, single lamp & single rod
BAB350	130		17	45	Elliptic, dual lamp & single rod
BAB492	150		17	45	Elliptic, dual lamp & single rod
BAB496	160		17	45	Elliptic, dual lamp & single rod
BAB497	170		17	45	Elliptic, dual lamp & single rod

Remark: 1) unit: mm; 2) Distance means the distance between lamp and rod in sing-lamp configuration and the distance between two lamps in dual-lamp configuration.

Ceramic Reflectors For Diode-pumped Solid-state Lasers:
Description of part number: CRDP-XX-YY-Z-AAA-BBB
CRDP: ceramic reflector for diode-pumped solid-state laser
XX – internal diameter of the reflector in mm.
YY - reflector length in mm.
Z – number of the diodes to be placed around the laser rod.
AAA – related to the cross section of the reflector such as TRI (triangle shape), CRL (round shape), PLT (plate shape)
BBB – variant for remarks

Model	Internal Dia. (mm)	Length (mm)	Remark
CRDP-12-25-3-PLT	12	25	Suitable for diode side-pumped solid-state lasers, 3 group diode bars placed around the YAG rod
CRDP-12-65-3-PLT	12	65	Suitable for diode side-pumped solid-state lasers, 3 group diode bars placed around the YAG rod
CRDP-12-115-3-PLT	12	115	Suitable for diode side-pumped solid-state lasers, 3 group diode bars placed around the YAG rod
CRDP-6.07-32.26-3-TRI	6.07	32.26	Triangle, offering FF to give better strength, reflectance would be 95/96%. Suitable for diode side-pumped solid-state lasers, 3 group diode bars placed around the YAG rod
CRDP-12.2-67-3-TRI	12.2	67	Triangle, FF, 3 group diode bars placed around the YAG rod
CRDP-12.2-76.3-5-CRL	12.2	76.3	Circle reflector, suitable for diode side-pumped solid-state lasers, 5 group diode bars placed around the YAG rod

Ceramic Reflectors For Beauty and IPL Applications:
Description of part number: CRIPL-XX-YY-BBB
CRIPL: ceramic reflector for beauty and IPL applications
XX – internal diameters or angler of the reflector in mm/degree
YY - reflector length in mm.
BBB – variant for remarks

Model	Internal radius/angle (mm/degree)	Length (mm)	Remark
CRIPL-4.27/3.28-48/60	4.27-3.28	48 to 60	EAB-074, tear shape reflector
CRIPL-23-46	23^0 46’	46	LAK-404, glazed, taped ends, 5 holes
CRIPL-19-48-5	19^0 52’	48	LAK-409, unglazed, with 5 holes
CRIPL-19-48-5G	19^0 52’	48	LAK283, glazed, with 5 holes
CRIPL-19-48-3	19^0 52’	48	LAK306, unglazed, with 3 holes
CRIPL-19-48-3G	19^0 52’	48	LAK317, glazed, with 3 holes

As far as the IPL parts are concerned, there are many “variation on the same theme” in order words the angle may be slightly different, length could vary and some parts have no holes, others have several holes. Parts could also be glazed or un-glazed. We can make any parts and we could adapt the drawings to customer’s requirements’.

Ceramic Alumina Properties FF

Description
Alumina ceramic with a minimum Al2O3 content of 95.0% (typically 96%). This material is a high quality electrical insulator, with good mechanical properties, that is widely used for components in consumer products as well as for high integrity applications.

Prime features
- High volume resistivity.
- Low coefficient of expansion.
- Dense, nonporous and vacuum tight.
- Resists abrasive wear and chemical attack.
- Fire resistant and non-outgassing.

Typical applications
- Laser power tubes.
- Telecommunications components.
- Aerospace components.
- Automobile components.
- Domestic product components.
- Process equipment components.

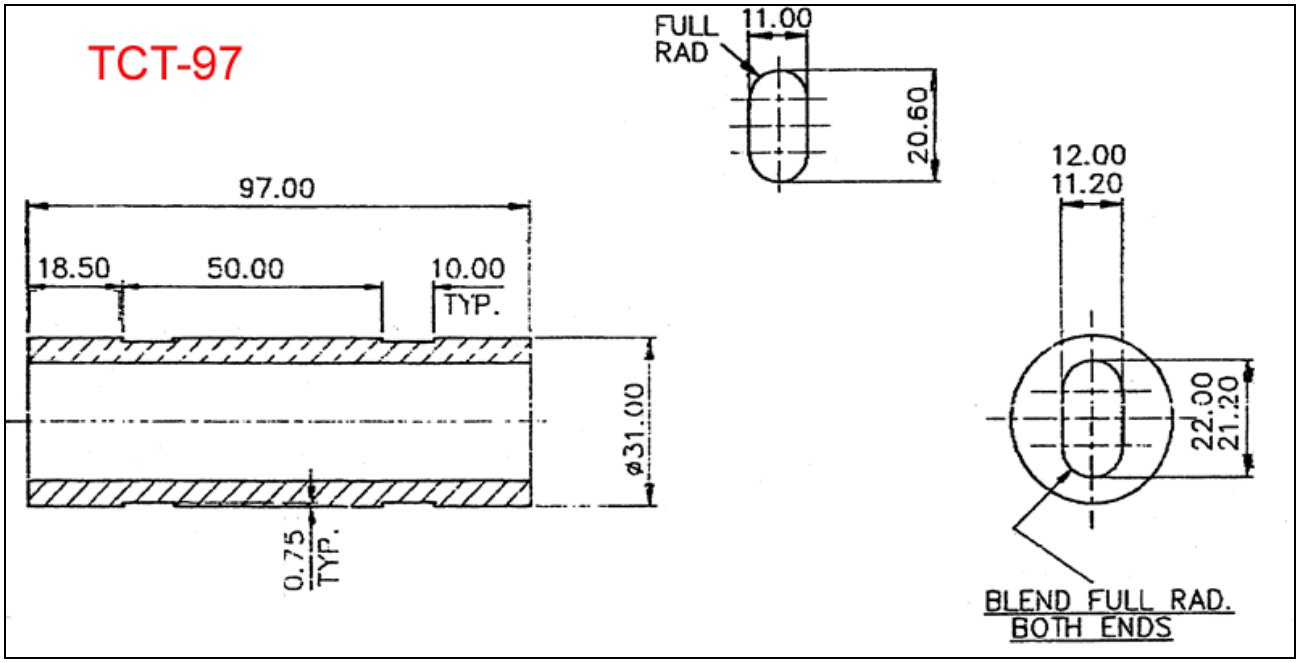
Specifications
Quality Assurance to ISO 9002.

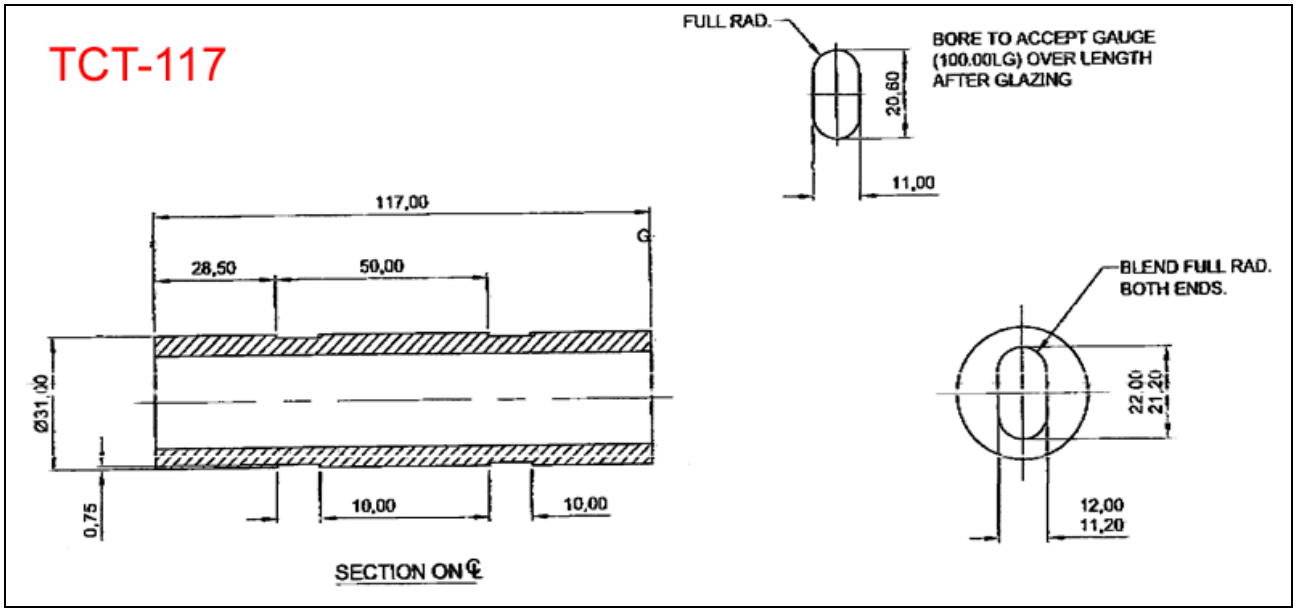
Production capabilities
- Pressed and machined components.
- Extruded components.
- Prototype, batch and volume production.

Physical properties

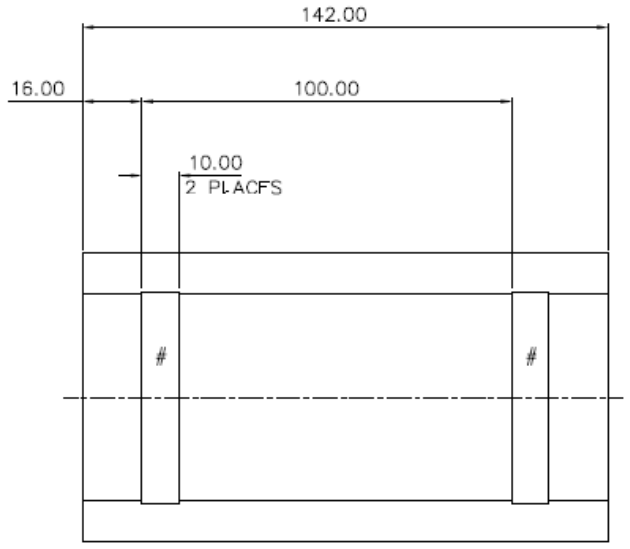
Color	White
Bulk density(fired), Mg/m3	3.70
Grain size, m	6
Porosity(apparent), %nominal	0 (fully dense)
Vicker shardness, GPa@Hv0.5kg	12.5
Rockwell hardness(R45N)	78
Compressive strength, MPa	2000
Flexural strength(ASTM C1161, 3point), MPa	320
Young's modulus, GPa	325
Fracture toughness KIC(SENB),MPa.m½	4.5
Sonic velocity, m/s	9000
Thermal conductivity, W/m.K	21
Thermal expansion coefficient(0800C),106/C	7.5
Thermal down shock, ▲(C	170
Dielectricconstant@1MHz	9.5
Dielectricconstant@9.4GHz	9.4
Dielectricloss@1MHz, tanδ10.4	3.4
Volume resistivity, ohm.cm@20C	>1014
300C	>108

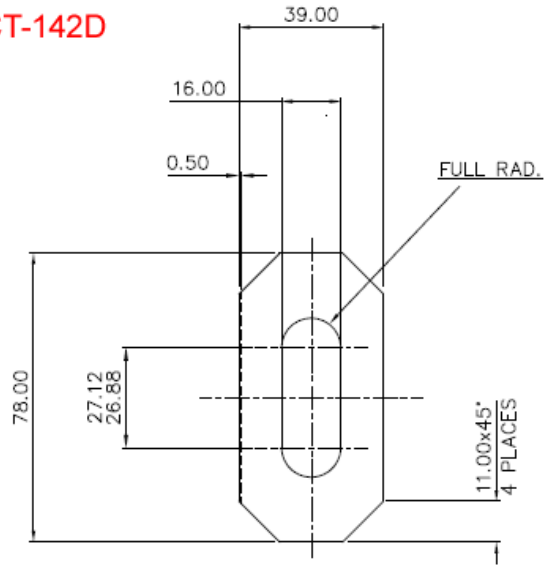
Dimension of Ceramic Reflectors



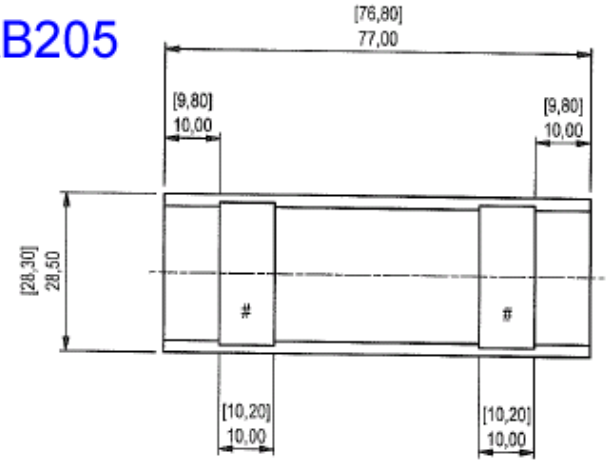


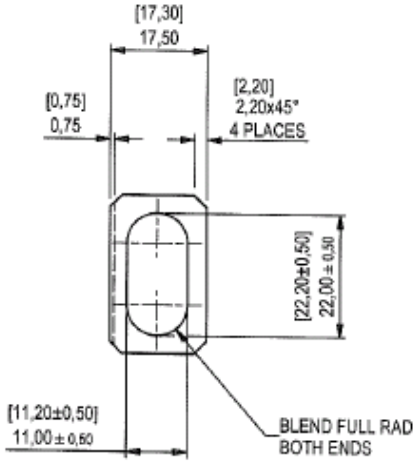
TCT-142D



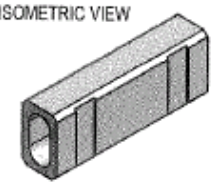


ZAB205





ISOMETRIC VIEW



GRIND ALL EXTERNAL SURFACES

DYE PENETRANT TEST TO LAS-008

DIMENSIONS [ ] ARE BEFORE GLAZE SIZES

GLAZE ALL OVER TO SPEC 1232

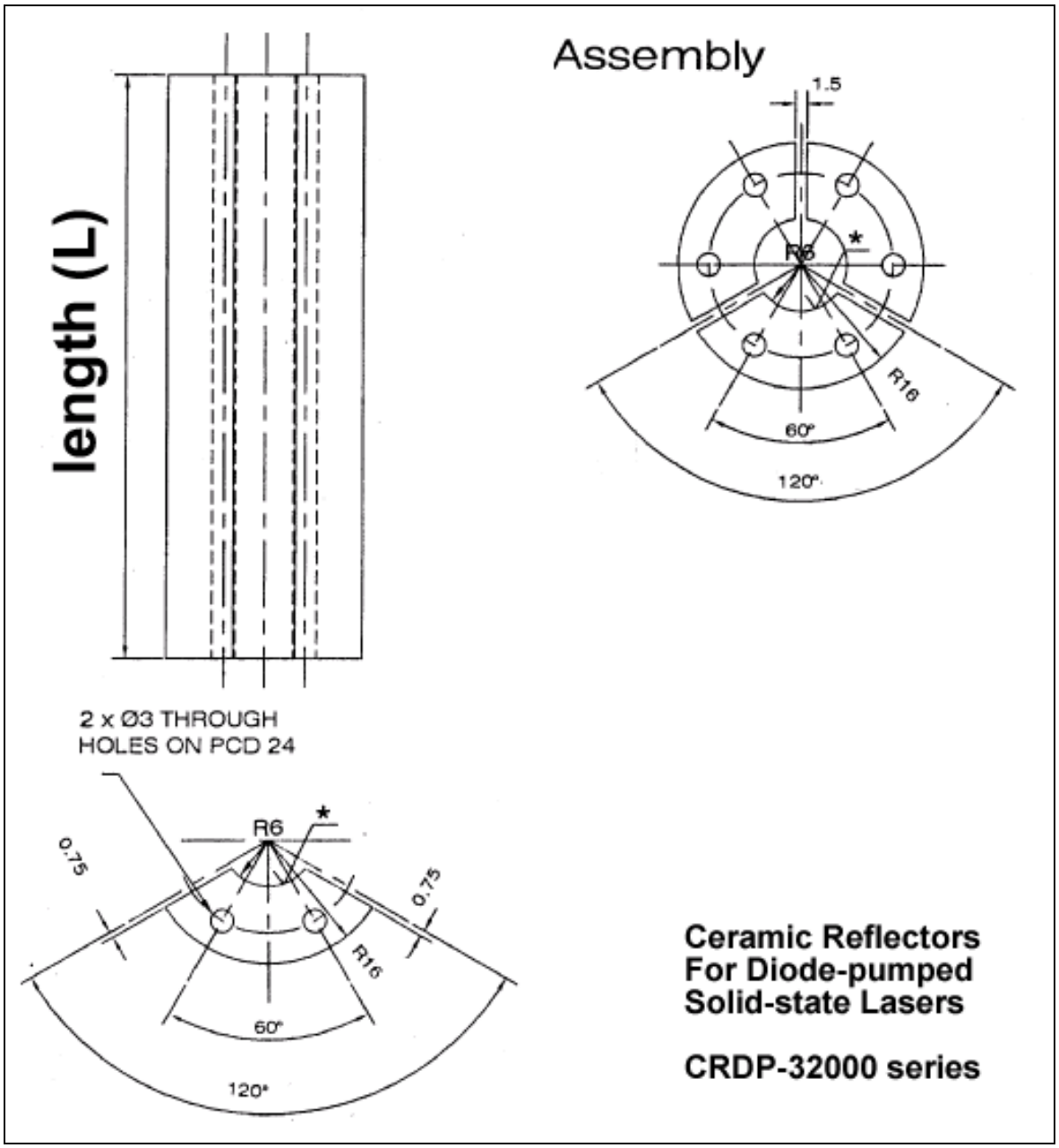
BEFORE GLAZE TOLERANCES ±0,05
UNLESS STATED OTHERWISE

TRIVET MARKS PERMISSIBLE IN
AREAS MARKED THUS # ONLY

ANY TRIVET MARKS TO BE LOCALLY
REGLAZED TO SEAL

ALL DIMENSIONS APPLY AFTER GLAZING

BREAK SHARP EDGES R1,00 MAX TO
ENSURE GLAZE CONTINUITY


length (L)
Assembly
1.5
R6
*
R16
60°
120°
2 x Ø3 THROUGH
HOLES ON PCD 24
R6
*
0.75
0.75
R16
60°
120°
Ceramic Reflectors
For Diode-pumped
Solid-state Lasers
CRDP-32000 series

Laser Pump Chambers Used in Branded Lasers

If you are using a laser from a laser maker, please find its model/series number and find our chamber model starting with STBA as listed below. You can go to our websites to download the detailed specifications and drawings.

AB LASER	
STBA600	600, 601, 612, 615
STBA6000	2000, 6000, BLS 611, 615, LBI 600 COMP
STBASTARMARK65	StarMark SM65
STBASTARMARK90	StarMark SM90
STBASTARMARK150	StarMark SM150
ALLTEC	
STBAFOBA100	LN100W
ALPHA LASER	
STBAALS35S	ALS35S, SL50, SL50P
STBAALS75	ALS75, AL100, ALV100, ALW100, ALM150
BAASEL LASERTECHNIK	
STBA600	600, 601, 612, 615
STBA6000	2000, 6000, BLS 611, 615, LBI 600 COMP
STBASTARMARK65	StarMark SM65
STBASTARMARK90	StarMark SM90
STBASTARMARK150	StarMark SM150
BENTZY LASER	
STBA3117E	Diamond Processing Laser
CHICAGO LASER	
STBA510	CLS510
STBA520	CLS520
STBA512	CLS37S
STBA708	CLS37S
STBA712	CLS37W, CLS39, CLS907, CLS960, CLS977
STBA812	CLS39, CLS907, CLS947, CLS977
CONTROL LASER	
STBA510	510
STBA512	512
STBA258	258, H–518
STBA520	520
STBA530	530, 532, 534, 536, 630
STBA612	612, Elite, Signature, Emblem
STBA620	620
STBA400	400, 428, 438, 440–8, 440–16
STBA612PLUS	512 Plus, Signature 100, Script 100
CRAFFOD PRECISION PRODUCTS	
STBA7000	LaserStar 7000 Series
E.S.I	
STBA510	25, 44
STBA512	44 (512)
STBA520	44 (520)
STBA570	44, 80, 4000A, 4200, 3570 (Old Model)
STBA571	44, 80, 4000A, 4200, 3570 (New Model)
STBA573	3573
EXCALIBUR	
STBA3117	XLS572
FLOROD	
STBA512	40, 41, 40, 70
STBA712	MEL 40
FOBA	
STBAFOBA100	90MK-DT, 94S
FOX	
STBA4114	7400
GENERAL SCANNING	
STBA718	400, 800

STBA818	400, 800, 6000
GSI LUMONICS	
STBA718	400, 800
STBA818	400, 800, 6000
STBA4116	Lightwriter
HAAS	
STBAHAAS	HL353D, HL506D, DL703D, HL1003D, HL1006D, HL1504D, HL2006D, HL3006D, HL4006D
HOLOBEAM	
STBA510	255, 256
STBA258	257, 258
STBA530	2660
JEC	
STBA510	1020, 1028
STBA512	1024
LASAG	
STBALAK101	LAK101, KLS111, LAK100, KLS016
STBALAK301	LAK301–302, LPM301–302
STBALAK322	LAK332, KLS321–322
STBA342	LAK342, KLS246–040FC
STBALAK400	LAK400–401
STBALAK601	LAK600–601
LASER APPLICATIONS/LASERMETRICS	
STBA9555	9555
STBA9560	9560
LASER INDENTIFICATION SYSTEMS	
STBA4116	WaferMark 345, II
LASER OPTRONICS	
STBA747	747
STBA767	767
LASER SOS	
STBA323	323 Series, 30 W, 7 W TEMoo @ 1kHz
STBA324	324 Series, 40 W average power
STBA333	333 Series, 50 W, 11 W TEMoo @ 1 kHz
STBA334	334 Series, 60 W average power
STBA353	353 Series, 50 W TEMoo CW
STBA354	354 Series, 120–135 W average power
STBA364	364 Series, 150–160 W average power
STBA374	374 Series, 30 W TEMoo
STBA854	854 Series, 80 W average power
STBA7184	7184 Series, 16 W TEMoo @ 4kHz
STBA8955	8955 Series, 120 W average power
STBA8956	8956 Series, 150 W average power
STBA9625	9625 Series, 120 W average power, pulse energy 60 Joules
STBA9635	9635 Series, 250 W average power
STBA9725	9725 Series, 150 W average power
STBA9754	9754 Series, 80 W average power
STBA9755	9755 Series, 120 W average power
LASIT	
STBA854	EasyMark & Fleximark 80 W & 120 W (upto 2006)
STBA9754	EasyMark & Fleximark 80 W & 120 W (from 2007)
LEE LASER	
STBA708	708
STBA712	712
STBA718	715, 718
STBA812	808, 812
STBA818	815, 818
STBA8183	818TQ
LS LASER SYSTEMS	
STBAMLS035	MLS035
M.L.S.	
STBAMLS035	MLS035

N.E.C.	
STBASL114	SL114A, 114F, 144G, SL475H
ORZIV	
STBA3117	2001
OTARI	
STBA118	118 (250W)
STBA118CC	118CC(350W)
PFAFFEN	
STBA600	DS–5000
PHOTON TECHNOLOGY	
STBA7184	Laser SOS 7184
POSITIVE LIGHT	
STBAMERLIN	Merlin
QUANTUM LASER	
STBA854	MaxiMark 80 W
QUANTRAD	
STBA510	1733
STBA512	1969 6
STBA9555	9555, Blazer 2000, Comet, Galaxy
QUANTRONIX	
STBA118	118
STBA118CC	118CC Close Coupled
STBA3116	116, 604, 416
STBA3117	117
STBA3114	114, 602, 603
STBA4114	114, 602, 603
STBA4116	116, 604, 416
STBA4116YLF	4116, 4216 6
STBA4217YLF	4217
STBA6117	117 (150 W)
RAYTHEON	
STBASS500	SS500
STBASS550	SS550
ROFIN BAASEL	
STBA600	600, 601, 612, 615
STBA6000	2000, 6000, BLS 611, 615, LBI 600 COMP
STBASTARMARK65	StarMark SM65
STBASTARMARK90	StarMark SM90
STBASTARMARK150	StarMark SM150
ROFIN SINAR	
STBA767	EverMark 8070, 815, 860
SAHAJANAND LASER	
STBA612PLUS	HallMark
STBA7183	Lee Laser 718TQ
STBA7184	Laser SOS 7184
STBA8183	Lee Laser 818TQ
S.E.I.	
STBA854	S.E.I. 80 W
STBA8955	S.E.I. 120 W
SIRO LASERTEC	
STBAALS35S	Thunder, Thunderstorm
STBAALS75	Tornado, Hurricane
SPECTRA PHYSICS	
STBA570	3000
STBA571	3000
STBA573	3000, 3400
STBA712	3800
STBAMERLIN	Merlin
TERADYNE	
STBA510	311, H–507
STBA512	411, H–514, WD411
STBA712	W614, W670

STBA4114	M118
STBA4116	W419, W421, W429, W614, M118
T.L.T.	
STBA9560	800
STBA1200	1200, 1400
STBA3117	2400
TRUMPF	
STBAHAAS	HL353D, HL506D, DL703D, HL1003D, HL1006D, HL1504D, HL2006D, HL3006D, HL4006D 4
UNIVERSAL LASER SYSTEM	
STBA812	Lee Laser 808, 812
ZANABONI	
STBA600	Baasel 600 Series, 60 W