

Laser Welding

APPLICATIONS

Target Applications: hermetically sealed parts, electrical connectors, sensors, switches, e-water pump, e-ATF pump, slot liners

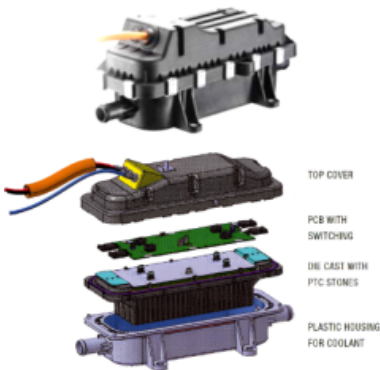
Connectors



Auxiliary ePumps

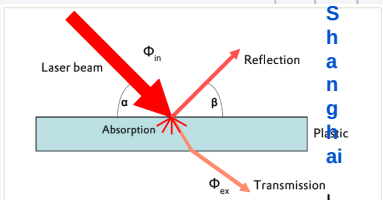


High voltage coolant heater - heat resistant coolant chamber



THEORY, KNOWLEDGE, MODELS & DATA

Introduction to Laser Welding



Laser Welding Database

Ongoing updated database that contains historical data, laser settings, laser transmission values, etc

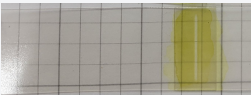
LASER TRANSMISSIVE MATERIALS

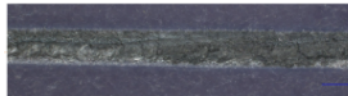
Commercial Laser Transmissive "Black" Grades	Thicknesses	Absorbing Layer
R-3-410BL LZT	1mm	R-4-270BL , BR11BL
	1.5mm	R-4-270BL, R-4-240BL
	2mm	R-4-270BL, R-4-240BL
A-1130 HS LZT BK979	1mm	A-1625 HS BK324
	2mm	A-1625 HS BK324
AE-8940 LZT BK979	1mm	AE-8940
	2mm	AE-8940
A-1145 HS LZT BK979	1mm	A-1625 HS BK324
	2mm	A-1625 HS BK324
AE-8930 LZT (inactive)	1mm	AE-8935, AE-8940, AE-8950, AE-9933, AE-9950
	2mm	AE-8935 BK

CAPABILITIES

Shanghai Laser 2000W Fiber Laser @ 1070nm Spot size: 0.6mm / 1mm / 1.5mm / 3mm / 6mm



Laser Welding Transmissive on Transmissive using "clearweld" dye		Alpharetta 50 W Fiber Laser @ 1064 nm	
		Equipment	Alpharetta: Perkin Elmer Lambda 950 Shanghai: LPKF TMG3 

T e s t i n g	W e l d S t r e n g t h L a p s h e a r t e S t i n g f o r w e l d S t r e n g t h	
	M i c r o s c o p y I m a g i n g t o a n a l y z e c o h e s i o n a t w e l d l i n e	

Laser Welding Team			
Alpharetta	Emmanuel David	Jacob Brooker	Elias Irick
Shanghai	Hanson Li	Lingjun Rao	Neil Liang