

# 激光切割光学镜片——光纤激光镜片

## Laser Cutting Optical Lenses – Fiber Laser Lenses



光纤激光切割一般用于中高功率的金属材料切割，一般光路传输顺序为：激光光束通过准直镜准直并扩束成为平行光，然后利用聚焦镜将平行光聚焦在工作设定位置，同时在聚焦镜后有保护镜片来防止切割过程中的飞溅物损坏聚焦镜。除此之外，L型的切割头中准直后将在45度反射镜将准直光束偏转90度进入聚焦镜进行聚焦切割。

Fiber laser cutting is normally used for cutting metal materials with medium and high power, general light path transmission order like: laser beam go through the collimating lens, where the beam is collimated and become parallel light beam, and then focus lens set parallel light focusing on the job position, at the same time protective lenses, behind the focusing lenses, can prevent the focusing lenses from splash damage. In addition, in the L-shaped cutting head, the collimated light beam will be deflected 90 degrees by the 45-degree reflection mirror, and then goes through the focusing lenses, resulting in the focus cutting.

产品名称 Part Category	直径 Diameter (mm)	焦距 Focal Length (mm)	镀膜 Coating	
光纤准直镜 Fused Silica Collimating Lens	球面/非球面 Spheric/Aspheric	25	75	AR/AR@1030-1090nm
		25	100	
		28	75	
		28	100	
		30	75	
		30	100	
		30	125	
		37	100	
		37	125	
		38.1	100	
		38.1	125	
		50	100	
		50	125	
		50	150	
52	125			
52	150			

产品名称 Part Category	直径 Diameter (mm)	焦距 Focal Length (mm)	镀膜 Coating	
光纤切割聚焦镜 Fused Silica Focusing Lens	球面/非球面 Spheric/Aspheric	25	100	AR/AR@1030-1090nm
		25	125	
		28	100	
		28	125	
		30	125	
		30	150	
		30	200	
		37	125	
		37	150	
		37	200	
		38.1	125	
		38.1	150	
		38.1	175	
		38.1	200	
		50	150	
		50	200	
		50	250	
		52	200	
52	250			

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	镀膜 Coating	
光纤反射镜 Fused Silica Mirror	平面 Plano	30	5	HR/@1030-1090nm45°AOI.
		38.1	5	
		50	10	

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	镀膜 Coating	
光纤保护窗 Fused Silica Protective Window	平面 Plano	20	5	AR/AR@1030-1090nm
		22.35	4	
		25.4	4	
		28	4	
		30	5	
		37	7	
38.1	7			

# 激光切割光学镜片---CO2激光镜片

## Laser Cutting Optical Lenses – CO2 Laser Lenses



CO2激光切割可应用于几乎所有的金属和非金属材料切割，其中的光学包括激光发生器内部镜片（包括尾镜、输出镜、反射镜及偏振用布鲁斯特镜），及外光路传输光学镜片（包括合束镜/分光镜、反射镜、圆偏振镜、聚焦镜）

CO2 laser cutting can be applied to almost all metal and nonmetallic material cutting, its optics including the internal lenses inside the laser generator (including rear mirror, output mirror, reflection mirror and polarization Brewster mirror), and optical transmission optical lenses (including beam combiner/splitter, reflection mirror, CPL mirror and focusing lenses).

产品名称 Part Category	尺寸 Dimension (mm)	曲率半径 Curvature Radius (mm)	镀膜 Coating	
ZnSe布氏窗 ZnSe Brewster	10.16 × 30.48 × 3.0	PO	Uncoated	
	15.24 × 39.6 × 2.03			
	20.32 × 52.8 × 3.0			
	25.4 × 66.0 × 3.0			
	50.8 × 132.3 × 5.08			
ZnSe薄膜偏振片 ZnSe TFP	10.16 × 30.48 × 3.0			TFP/UC@10.6um.67.4°AOI. TFP/AR@10.6um.45°AOI.
	15.24 × 39.6 × 2.03			
	20.32 × 52.8 × 3.0			
	25.4 × 66.0 × 3.0			
	50.8 × 6.0			
50.8 × 132.3 × 5.08				

产品名称 Part Category	直径 Diameter (mm)	边缘厚度 Thickness (mm)	焦距 Focal Length (mm)	镀膜 Coating
ZnSe聚焦镜 ZnSe PO/CX or Men Lens	18/19.05/20/25	2	38.1	AR/AR@10.6um
			50.8	
			63.5	
			75	
			95.25	
	100			
	28	3	127	
	38.1	7.37/7.87/9.0	95.25	
			127	
			190.5	
	50.8	7.9/9.7	127	
			190.5	
			222.25	
254				

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	曲率半径 Curvature Radius (mm)	镀膜 Coating		
硅反射镜 Si Reflector	20	3	PO	MMR/UC@10.6um ATFR/UC@10.6um		
	25	3				
	30	4				
	38.1	5.08				
	38.1	8				
	44.45	9.525				
	50.8	5.08				
	50.8	9.525				
	65	6				
	76.2	6.35				
铜反射镜 Cu Reflector	38.1	10	PO	Uncoated		
	50	10				
	60	10				
	70	25				
钼反射镜 Moly Reflector	19	3			PO	Uncoated
	20	3				
	25	3				
	30	3				
	38.1	5				
	50.8	5.08				

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	曲率半径 Curvature Radius (mm)	镀膜 Coating
ZnSe输出镜 ZnSe Output Coupler	12.7	3	PO/8MCX	70%R/AR@10.6um
			PO/PO	
	19.05	3	15MCC/15MCX	
			PO/PO	
	23	3.3	PO/PO	
	25	3	PO/PO	
	25.4	6	30MCC/30MCX	65%R/AR@10.6um
			35MCC/15MCX	60%R/AR@10.6um
	38.1	8	20MCC/10MCX	70%R/AR@10.6um
			15MCC/7.5MCX	40%R/AR@10.6um
			PO/PO	50%R/AR@10.6um
			PO/PO	40%R/AR@10.6um
	50.8	5.08	PO/PO	80%R/AR@10.6um
PO/15MCC			65%R/AR@10.6um	
PO/15MCC			80%R/AR@10.6um	
55	6	PO/18MCC	65%R/AR@10.6um	
ZnSe分光镜 ZnSe Beamsplitter	25	3	PO	25%R/33.3%R/50%R@10.6um 45°AOI.S-Pol/P-Pol/R-Pol
	28	3		
	38.1	5.08		
	50.8	5.08		

# 激光打标光学镜片---光纤激光镜片

## Laser marking optical lenses---fiber laser lenses



光纤激光打标可以应用于所有非透光材料的标刻，一般光路系统及光束传输顺序为：通过扩束镜扩大光束改善发散角，然后利用合束镜并入指示用的红光，再到达振镜进行光束的偏转，最后利用场镜进行光束无折转聚焦在工作位置。

Fiber laser marking can be applied to the marking of all nontransparent materials. The general optical path system and beam transmission sequence are: the beam is enlarged by the beam expander to improve the divergence angle, then the beam combiner incorporates the red light (for the indication) in and reach to the galvanometer scanner where the beam is deflected, and finally the field lens is applied to focus the beam at the working position without folding.

产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射光斑 Input Beam EP (mm)	工作距离 WD (mm)	螺纹连接 Mounting Thread (mm)
光纤场镜 Fiber Scan Lens	SL-1064-50-80	80	50 × 50	12.0	91	M85*1
	SL-1064-70-100	100	70 × 70	12.0	108.3	M85*1
	SL-1064-110-160	160	110 × 110	12.0	160	M85*1
	SL-1064-150-210	210	150 × 150	12.0	240.3	M85*1
	SL-1064-175-254	254	175 × 175	14.0	295.4	M85*1
	SL-1064-200-290	290	200 × 200	14.0	314.9	M85*1
	SL-1064-220-330	330	220 × 220	14.0	352.1	M85*1
	SL-1064-250-380	380	250 × 250	14.0	414	M85*1
	SL-1064-300-420	420	300 × 300	14.0	445.7	M85*1
	HP-SL-1064-116-165	165	115 × 115	12.0	188	M85*1
	HP-SL-1064-155-254	254	155 × 155	20.0	300	M85*1
	SL-1064-150-210-(20mmCA)	210	150 × 150	20.0	255	M85*1
	SL-1064-175-254-(20mmCA)	254	175 × 175	20.0	285	M85*1
	SL-1064-300-420-(20mmCA)	420	300 × 300	20.0	467	M85*1
	SL-1064-360-500-(20mmCA)	500	360 × 360	20.0	535	M85*1
SL-1064-400-650-(20mmCA)	650	400 × 400	20.0	697	M85*1	

产品名称 Part Category	产品编号 Part Number	倍数 Expansion	入射口径 Input CA (mm)	出射口径 Output CA (mm)	镜筒外径 Housing Diameter (mm)	长度 Housing Length (mm)
1064扩束镜 1064 Beam Expander	BEFS-1064-C0.85:58-1.5X	1.5	10	21.6	27.0	58
	BEFS-1064-C0.85:48.5-2X	2.0	10	21.6	27.0	48.5
	BEFS-1064-C0.85:68-3X	3.0	10	21.6	27.0	68
	BEFS-1064-C0.85:76-4X	4.0	10	21.6	27.0	76
	BEFS-1064-C0.85:72-5X	5.0	10	21.6	27.0	72
	BEFS-1064-C0.85:74-6X	6.0	10	21.6	27.0	74
	BEFS-1064-C0.85:68-8X	8.0	10	21.6	27.0	68
	BEFS-1064-C0.85:69.5-10X	10.0	10	21.6	27.0	69.5
	BEFS-1064-C0.85:75-12X	12.0	6.0	21.6	27.0	75
	BEFS-1064-C0.85:87-15X	15.0	6.0	21.6	27.0	87
	HP-1064-C0.71:63.8-3X	3.0	6.0	18.0	25.0	63.8

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	镀膜 Coating
1064合束镜 1064 Beam Combiner	19	2	98%T@1064nm,85%R633nm 45°AOI.R-pol.
	20	1	
	20	2	
	20	3	

产品名称 Part Category	尺寸 Dimension L*W*T-X/Y(mm)	光斑 Beam EP (mm)	材料 Material	镀膜 Coating
1064振镜片 1064 Galvo Mirror	18.4*13*1.5-X	10	K9/熔石英/硅 K9/Fused Silica/Si	HR/UC@1064nm
	23.3*16*1.5-Y			
	21*16.89*2.0-X			
	30*19*2.0-Y	12		
	24.5*16.2*2.0-X			
	31.2*22*2.0-Y			
	27*20*2.0-X	14		
	37.5*22.5*2.0-Y			
	37*25.58*2.5-X			
	47*31*2.5-Y	20		
	55*35*3.5-X			
65*43*3.5-Y	30			

# 激光打标光学镜片---CO2激光镜片

Laser marking optical lenses---CO2 laser lenses



CO2激光打标可以应用于几乎所有材料的标刻，一般光路系统及光束传输顺序为:通过扩束镜扩大光束然后利用合束镜并入指示用的红光，再到达振镜进行光束的偏转，最后利用场镜进行光束无折转聚焦在工作位置。

CO2 laser marking can be applied to the marking of almost all materials. The general optical path system and beam transmission sequence are; the beam is enlarged by the beam expander and then the beam combiner incorporates the red light (for the indication) in and reach to the galvanometer scanner where the beam is deflected. Finally, the field lens is applied to focus the beam at the working position without folding.

产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射口径 Input CA (mm)	工作距离 WD (mm)	镜片直径 (mm)	螺纹连接 Mounting Thread (mm)
CO2场镜 Co2 Scan Lens	SL-10.6-50-75	75	50 × 50	8/14/20	57.0	38/48/65	M85*1
	SL-10.6-70-100	100	70 × 70	8/14/20	84.8		
	SL-10.6-110-150	150	110 × 110	8/14/20	134.4		
	SL-10.6-140-230	230	140 × 140	8/14/20	225.9		
	SL-10.6-175-250	250	175 × 175	8/14/20	231.3		
	SL-10.6-210-300	300	210 × 210	8/14/20	287.2		
	SL-10.6-250-360	360	250 × 250	8/14/20	351.1		
	SL-10.6-300-430	430	300 × 300	8/14/20	414.0		
SL-10.6-400-565	565	400 × 400	8/14/20	547.9			

产品名称 Part Category	产品编号 Part Number	倍数 Expansion	入射口径 Input CA (mm)	出射口径 Output CA (mm)	镜筒外径 Housing Diameter (mm)	长度 Housing Length (mm)
CO2扩束镜 CO2 Beam Expander	BEZ-9.3-C0.7:60-2.5X	2.5	11.4	17.8	25.0	60.0
	BEZ-9.3-C0.6:68-3X	3.0	11.4	15.2	25.0	68.0
	BEZ-9.3-C0.6:70.5-4X	4.0	11.4	15.2	25.0	70.5
	BEZ-9.3-C1.06:75.65-6X	6.0	11.4	27.0	36.0	75.7
	BEZ-10.6-C0.8:33.5-1.5X	1.5	11.4	20.3	27.0	33.5
	BEZ-10.6-C0.6:46.5-2X	2.0	11.4	15.2	25.0	46.5
	BEZ-10.6-C0.6:57.5-2.5X	2.5	11.4	15.2	25.0	57.5
	BEZ-10.6-C0.6:64.5-3X	3.0	11.4	15.2	25.0	64.5
	BEZ-10.6-C1.13:55-3.5X	3.5	11.4	26.2	36.0	55.0
	BEZ-10.6-C0.6:70.5-4X	4.0	11.4	15.2	25.0	70.5
	BEZ-10.6-C0.7:72-5X	5.0	11.4	17.8	25.0	72.0
	BEZ-10.6-C0.96:75.75-6X	6.0	11.4	24.4	32.0	75.8
	BEZ-10.6-C0.99:72-7X	7.0	11.4	25.1	32.0	72.0
	BEZ-10.6-C0.96:71-8X	8.0	11.4	24.4	32.0	71.0
	BEZ-10.6-C1.06:37-2X-A	2.0	13.5	26.9	37.0	37.0
	BEZ-10.6-C1.06:62.25X-A	2.5	13.5	26.9	37.0	62.2
BEZ-10.6-C1.06:64.2-3X-A	3.0	13.5	26.9	37.0	64.2	
BEZ-10.6-C0.6:70.5-4X-A	4.0	11.4	15.2	25.0	70.5	

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	镀膜 Coating
CO2合束镜 CO2 Beam Combiner	20	2.0	98%T@1064nm,85%R@633nm 45°AOI.R-pol.
	25	2.0	
	38.1	3.0	

产品名称 Part Category	尺寸 Dimension L*W*T-X/Y(mm)	光斑 Facula EP (mm)	材料 Material	镀膜 Coating
振镜片 Galvo Mirror	18.4*13*1.5-X	10	硅 Si	PO/MMR@10.6um
	23.3*16*1.5-Y			
	21*16.89*2.0-X			
	30*19*2.0-Y	12		
	24.5*16.2*2.0-X			
	31.2*22*2.0-Y			
	27*20*2.0-X	14		
	37*22.5*2.0-Y			
	37*25.5*2.5-X			
	47*31*2.5-Y	20		
55*35*3.5-X				
62*43*3.5-Y				

# 激光打标光学镜片---355nm&532nm激光镜片

Laser marking optical lenses---355nm & 532nm laser lenses



产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射光斑 Input Beam EP (mm)	工作距离 WD (mm)	螺纹连接 Mounting Thread (mm)
355/532场镜 355/532 Scan Lens	SL-355-70-100	100	70 × 70	7.0	136.0	M85*1
	SL-355-105-170	170	105 × 105	7.0	213.5	
	SL-355-130-210	210	130 × 130	7.0	255.0	
	SL-355-150-254	254	150 × 150	7.0	316.0	
	SL-355-220-330	330	220 × 220	7.0	355.0	
	SL-532-70-100	100	70 × 70	12.0	115.0	
	SL-532-110-160	160	110 × 110	12.0	186.0	
	SL-532-150-210	210	150 × 150	12.0	234.0	
	SL-532-175-254	254	175 × 175	12.0	262.0	

产品名称 Part Category	产品编号 Part Number	倍数 Expansion	入射口径 Input CA (mm)	出射口径 Output CA (mm)	镜筒外径 Housing Diameter (mm)	长度 Housing Length (mm)
355/532扩束镜 355/532 Beam Expander	BEFS-355-C0.85:76-4X	4.0	10.0	21.6	27.0	76.0
	BEFS-355-C0.85:72-5X	5.0	10.0	21.6	27.0	72.0
	BEFS-355-C0.85:74-6X	6.0	10.0	21.6	27.0	74.0
	BEFS-355-C0.85:68-8X	8.0	10.0	21.6	27.0	68.0
	BEFS-355-C0.85:69.5-10X	10.0	10.0	21.6	27.0	69.5
	BEFS3-355-C1.1:66.4-5X	5.0	8.5	27.0	35.0	66.4
	BEFS3-355-C1.1:67.6-7X	7.0	8.5	27.0	35.0	67.6
	BEFS-532-C0.85:48.5-2X	2.0	10.0	21.6	27.0	48.5
	BEFS-532-C0.85:68-3X	3.0	10.0	21.6	27.0	68
	BEFS-532-C0.85:76-4X	4.0	10.0	21.6	27.0	76.0
	BEFS-532-C0.85:72-5X	5.0	10.0	21.6	27.0	72.0
	BEFS-532-C0.85:74-6X	6.0	10.0	21.6	27.0	74.0
	BEFS-532-C0.85:68-8X	8.0	10.0	21.6	27.0	68.0
	BEFS-532-C0.85:69.5-10X	10.0	10.0	21.6	27.0	69.5
	BEFS-532-C0.85:75-12X	12.0	6.0	21.6	27.0	75
	BEFS-532-C0.85:87-15X	15.0	6.0	21.6	27.0	87

紫外激光打标可以运用于精细打标和切割，一般光路系统及光束传输顺序为：通过扩束镜扩大光束改善发散角，然后利用合束镜并入指示用蓝光，再到达振镜进行光束偏转，最后利用场镜进行光束无折转聚焦在工作位置。

Ultraviolet laser marking can be applied in the field of fine marking and cutting. The general optical path system and beam transmission sequence are: expanding the beam by the beam expander to improve the divergence angle, then using the beam combiner to incorporate the indicator blue light in, and then reaching the galvanometer for beam deflection. Finally, the field lens is applied to focus the beam at the working position without folding.

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	镀膜 Coating
355合束镜 355 Beam Combiner	20	2	98%T@355nm,85%R@633nm 45°AOI.R-pol.
	25	2	
532合束镜 532 Beam Combiner	20	2	98%T@532nm,85%R@633nm 45°AOI.R-pol.
	25	2	

# 激光焊接光学镜片

## Laser welding optical lenses



目前激光焊接主要分为定光路系统焊接和扫描场镜焊接。定光路光学系统是利用准直镜准直光纤射出光后再利用聚焦镜聚焦于需要焊接的衔接处焊接，扫描场镜焊接是用扫描场镜代替聚焦镜进行聚焦焊接的过程。

At present, laser welding is mainly divided into fixed optical path system welding and scanning field mirror welding. The optical system of the fixed optical path uses the collimating mirror to collimate the optical fiber to emit light, and then uses the focusing mirror to focus on the joint where welding is required. The scanning field lens welding is a process of focus welding by using the scanning field lenses instead of the focusing lenses.

产品名称 Part Category	尺寸 Dimension L*W*T-X/Y(mm)	镀膜 Coating
1064合束镜 1064 Beam Combiner	54*38*5	98%T@1064nm,85%R@633nm 45°AOI.R-pol.

产品名称 Part Category	直径 Diameter (mm)	焦距 Focal Length (mm)	镀膜 Coating	
光纤准直镜 Fused Silica Collimating Lens	球面/非球面 Spheric/Aspheric	25	75	AR/AR@1030-1090nm
		25	100	
		28	75	
		28	100	
		30	75	
		30	100	
		30	125	
		37	100	
		37	125	
		38.1	100	
		38.1	125	
		50	100	
		50	125	
		50	150	
52	125			
52	150			

产品名称 Part Category	直径 Diameter (mm)	焦距 Focal Length (mm)	镀膜 Coating	
光纤切割聚焦镜 Fused Silica Focusing Lens	球面/非球面 Spheric/Aspheric	25	100	AR/AR@1030-1090nm
		25	125	
		28	100	
		28	125	
		30	125	
		30	150	
		30	200	
		37	125	
		37	150	
		37	200	
		38.1	125	
		38.1	150	
		38.1	175	
		38.1	200	
		50	150	
		50	200	
		50	250	
		52	200	
		52	250	

产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射光斑 Input Beam EP (mm)	工作距离 WD (mm)	螺纹连接 Mounting Thread (mm)
焊接场镜 Scan Lens For Welding	SL-1064-110-160	160	100 × 100	20	185	M85*1
	SL-1064-150-210	210	150 × 150	20	255	M85*1
	SL-1064-175-254	254	175 × 175	20	285	M85*1
	SL-1064-110-160	160	110 × 110	30	185	M95*1/M102*1
	SL-1064-150-210	210	150 × 150	30	262	M95*1/M102*1
	HP-SL-1064-115-254	254	115 × 115	30	297	M85*1
	HP-SL-1064-300-420	420	300 × 300	14	499	M85*1
	HP-SL-1064-280-500	500	280 × 280	30	620	M120*1

产品名称 Part Category	直径 Diameter (mm)	厚度 Thickness (mm)	镀膜 Coating
YAG 反射镜 YAG Mirror	25	3	HR/UC@1064nm 45°AOI.
	30	5	
	45	5	
	60	5	

# 激光3D打印光学镜片

## 3D Laser Printing Optical Lenses



激光3D打印实际是利用激光材料熔融成型固化或者直接用紫外进行固化的过程，其中光学系统的作用就是将激光器出来的光经过扩束改善光束质量后再利用场镜系统聚焦到熔融的位置，目前CO2激光、光纤激光和紫外激光都有运用于3D打印

3D laser printing is actually the process that laser material is melt-solidified or directly cured by ultraviolet light. The function of the optical system is to expand the beam of the laser to improve the beam quality, and then use the field lens system to focus onto the molten position. CO2 laser, fiber laser and UV laser are all applied in the field of 3D printing

产品名称 Part Category	尺寸 Dimension L*W*T-X/Y(mm)	曲率半径 curvature radius (mm)	镀膜 Coating
CO2保护窗 CO2 Protective Window	90 × 3	PL	AR/AR@10.64um
	120 × 6.0		
	80 × 60 × 3.0		
	85 × 65 × 3.0		
	90 × 60 × 5.0		
	90 × 70 × 3.0		

产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射光斑 Input Beam EP (mm)	工作距离 WD (mm)	直径 Diameter (mm)
CO2场镜 Co2 Scan Lens	SL-10.6-50-75	75	50 × 50	8/14/20	57.0	38/48/65
	SL-10.6-70-100	100	70 × 70	8/14/20	84.8	
	SL-10.6-110-150	150	110 × 110	8/14/20	134.4	
	SL-10.6-140-230	230	140 × 140	8/14/20	225.9	
	SL-10.6-175-250	250	175 × 175	8/14/20	231.3	
	SL-10.6-210-300	300	210 × 210	8/14/20	287.2	
	SL-10.6-250-360	360	250 × 250	8/14/20	351.1	
	SL-10.6-300-430	430	300 × 300	8/14/20	414.0	
SL-10.6-400-565	565	400 × 400	8/14/20	547.9		

产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射光斑 Input Beam EP (mm)	工作距离 WD (mm)	螺纹连接 Mounting Thread (mm)
光纤场镜 Fiber Scan Lens	HP-SL-1064-115-165	165	115 × 115	12.0	188	M85*1
	HP-SL-1064-155-254	254	155 × 155	20.0	300	M85*1

产品名称 Part Category	产品编号 Part Number	倍数 Expansion	入射口径 Input CA (mm)	出射口径 Output CA (mm)	镜筒外径 Housing Diameter (mm)	长度 Housing Length (mm)
CO2扩束镜 CO2 Beam Expander	BEZ-10.6-C0.6:46.5-2X	2.0	11.4	15.2	25.0	46.5
	BEZ-10.6-C0.6:57.5-2.5X	2.5	11.4	15.2	25.0	57.5
	BEZ-10.6-C0.6:64.5-3X	3.0	11.4	15.2	25.0	64.5
	BEZ-10.6-C1.13:55-3.5X	3.5	11.4	26.2	36.0	55.0
	BEZ-10.6-C0.6:70.5-4X	4.0	11.4	15.2	25.0	70.5

产品名称 Part Category	产品编号 Part Number	倍数 Expansion	入射口径 Input CA (mm)	出射口径 Output CA (mm)	镜筒外径 Housing Diameter (mm)	长度 Housing Length (mm)
1064扩束镜 1064 Beam Expander	HP-1064-C0.71:63.8-3X	3.0	6.0	18	25.0	63.8

产品名称 Part Category	产品编号 Part Number	焦距 Focal Length (mm)	扫描范围 Scan Field (mm)	入射光斑 Input Beam EP (mm)	工作距离 WD (mm)	螺纹连接 Mounting Thread (mm)
355场镜 355 Scan Lens	SL-355-520-750	750	520 × 520	10.0	824.4	M85*1
	SL-355-600-84	840	600 × 600	15.0	930	M85*1

产品名称 Part Category	产品编号 Part Number	倍数 Expansion	入射口径 Input CA (mm)	出射口径 Output CA (mm)	镜筒外径 Housing Diameter (mm)	长度 Housing Length (mm)
355扩束镜 355 Beam Expander	BEFS3-355-C1.2:68-2.5X	2.0	11.4	15.2	25.0	46.5
	BEFS3-355-C1.1:66.4-5X	2.5	11.4	15.2	25.0	57.5
	BEFS3-355-C1.1:67.6-7X	3.0	11.4	15.2	25.0	64.5



# 激光切割头系列

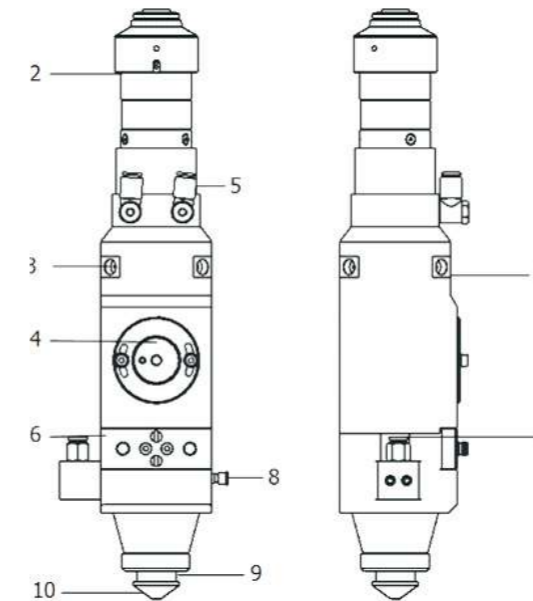
## Laser Cutting Head



此切割头最高功率用在3000W的激光设备上，大幅面光纤激光切割应用方面有很强优势。激光头内部结构完全密封，可避免光学部分受到灰尘污染。激光头采用两点对中调节，调焦采用凸轮结构，调节精确方便。保护镜片采用抽屉式安装，更换方便。可配各种带QBH接头激光器。

The laser cutting head is used at laser machine with maximum 3000W, it has strong advantages in the application of large-format fiber laser cutting field. The internal structure of the laser head is completely sealed, which can avoid the optical route from dust contamination. The laser head adopts two-point centering control, and the cam structure makes the adjustment precise and convenient. The head can be connected with every kind of laser sources with QBH.

## 整体描述



1. 切割头  
- Fiber laser cutting head
2. QBH连接器  
- QBH connector European standard
3. 光学单元调整钮(XY)  
- Optical unit adjustment knob XY
4. 光学单元调整钮(Z)  
- Optical unit adjustment knob Z
5. 冷却水接入  
- Cooling water device
6. 保护镜盒  
- Protective mirror boxes
7. 切割气体接入  
- Cutting gas access
8. 传感器插口(SMA/BNC)  
- Sensor socket SMA or BNC
9. 陶瓷体  
- Laser ceramic part (ceramic nose or holder)
10. 喷嘴电极  
- Nozzle

## 技术表格

项目 Name	参数 Parameter
准直系统焦距 Focal length for collimating system	4°
聚焦系统焦距 Focal length for focusing system	5°
透镜直径 Optical lens diameter	30mm
保护窗口外部尺寸 Outer size of protective window	30mm×4mm
光学单元调节范围 Optical unit range	
XY方向 XY direction	±1.5mm
Z方向 Z direction	±5mm
最大通光孔径 Maximum clear aperture	25mm
传感器接口 Sensor interface	SMA/BNC
工作温度 Working temperature	5°C-60°C
储存温度 Storing temperature range	-25°C-+60°C
湿度 Humidity range	30%至90%，没有露水 30%-90%, no water vapor
安装 Installation	参看其他章节 Please refer to other chapters
外部尺寸 Outer size	参看其他章节 Please refer to other chapters
重量 Weight	约1.6kg



## 广泛的激光技术解决方案

Wide Range of Laser Technology Solutions



公司凭借其在激光领域10多年的维修服务经验，与众多知名企业合作，拥有多名经验丰富的维修工程师，随时上门服务，给您的设备高效运行保驾护航。优质、高效，快捷、专业是我们售后的服务理念。同时我们精心的准备了除我们公司产品以外的激光零配件和常用消耗件。公司同时提供激光应用系统方案策划、设备改造、设备升级及工艺应用为一体的全方位服务。

By virtue of more than 10 years' maintenance service experience in the laser field, ALS has been cooperating with many well-known enterprises, our experienced maintenance engineers offer door-to-door service at any time. We escort and convey high efficiency running of your laser machines. Our after-sale service concept is 'Excellent, Efficient, Quick and Professional'. At the same time, except for our products, we also prepare stock of laser spare parts and regular consumables for your one-stop purchasing convenience. We also provide full range of services like laser application system scheme planning, equipment transformation, equipment upgrade and process application.

## CO2激光设备维修保养

CO2 Laser Machines Maintenance

- 德国通快设备(维修保养移机)  
German Trumpf Equipments (Repairing, Maintenance & Transferring)
- 瑞士百超设备(维修保养移机)  
Swiss Bystronic Equipments (Repairing, Maintenance & Transferring)
- 日本品牌设备(维修保养移机)  
Japanese Brand Equipments (Repairing, Maintenance & Transferring)
- 进口三维设备(维修保养移机)  
Imported 3D Equipments (Repairing, Maintenance & Transferring)
- 各大品牌水冷机维修保养  
Water cooling machines repairing and maintenance

## 光纤激光设备维修保养

Fiber Laser Machines Repairing and Maintenance

- 1、模块、电源维修  
Module and electricity supply maintenance
- 2、PC104、高反报警处理  
PC104, High response or Alarm handling
- 3、光纤端面清洗，光纤熔接  
fiber end cleaning, fiber fusion splice
- 4、严重错误报警重置  
Serious Error Alarm Reset
- 5、IPG水冷机维修  
IPG water cooling machine repair
- 6、各类光纤切割头清洁及更换镜片  
Fiber cutting head cleaning and lenses replacement

## 各大品牌CO2和光纤激光设备操作及常规问题处理培训

Training on CO2 and Fiber Laser Machines Operation and Problems Handling