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3D Pre-Scanning Solution



3D Pre-Scanning Solution Specifications

This solution includes a 2D galvoscanner system Quantum, a dynamic focus unit Proton series, and a galvo system controller. It use the Pre-scanning technology to realize the large field and 3D laser application.

前聚焦3D扫描系统

该解决方案包含 Quantum 二维扫描振镜系统，Proton 动态聚焦单元及专用控制软件。使用前聚焦技术，能够实现多尺寸规格大幅面及立体标记应用，该系统优点：标记速度快、峰值能量高、聚焦光斑小、功率损耗小。

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前聚焦3D扫描系统 规格参数

二维扫描振镜请参照 Quantum Neutron 规格书
2D galvo reference to Quantum Neutron datasheet.

通用规格 General specifications

额定电源容量 Power requirememrns	±15V DC150W . RMS max 3A
工作温度 Operating temperature	25±10°C
标准扫描角度Typical scan angle	40 degree
接口协议Interface	XY2-100/RL2-100

重量 Weight(kg)	QP10	QP14/NP14	QP20/NP20	QP30/NP30
	approx.4.2	5.35/5.55	10.85/11	13.65/14.55

动态聚焦轴 规格参数 Specifications for dynamic focus unit

镜头最大行程 Maximum lens travel	±1.5mm
追踪时间 Tracking error time	1ms
典型移动速度 Typical travel speed	≤140mm/s
可重复性 Repeatability	<1um
长期漂移Long-term drift	<6um

CO2(λ=10600nm):

工作范围 Working dimension(mm)			200x200	400x400	600x600	800x800	1000x1000	1200x1200	1400x1400
光斑直径 Spot diameter (1)		输入 Beam in(mm)	输出Beam out(μm)						
QP20-A	-TF270-10600	< 7. 1	385. 6	761. 8	1135	1505. 4	1871. 6	–	–
QP30-A/NP30D	-TF360-10600	< 8	– (4)	485	722	957. 8	1191. 4	1424. 8	1656. 8
QP30H-A/NP30DH/QP30EH/NP30EDH	-TF195-10600	< 14. 8	–	427. 6	635. 6	841. 8	1045. 8	1248. 8	1450. 2
工作距离 Working distance(mm) (2)									
QP20-A	-TF270-10600		227	502	777	1052	1326	–	–
QP30-A/NP30D	-TF360-10600		–	501	776	1051	1325	1600	1875
QP30H-A/NP30DH/QP30EH/NP30EDH	-TF195-10600		–	501	776	1051	1325	1600	1875
Z 向范围 Z range(mm) (3)									
QP20-A	-TF270-10600		20	200	710	–	–	–	–
QP30-A/NP30D	-TF360-10600		–	45	185	440	865	–	–
QP30H-A/NP30DH/QP30EH/NP30EDH	-TF195-10600		–	45	190	450	885	–	–
分辨率 Resolution(μm)			3	6	9	12	15	18	21

Nd:YAG (λ = 1064nm):

工作范围 Working dimension(mm)			200x200	300x300	400x400	500x500	600x600	800x800	1000x1000	1200x1200
光斑直径 Spot diameter (1)		输入 Beam in(mm)	输出 Beam out(μm)							
QP10	-TF200FSIII-1064	< 5	73. 8	108	142. 2	–	–	–	–	–
QP14/NP14D	-TF200FSIII-1064	< 7	54	78. 6	103. 2	128. 4	154. 2	–	–	–
QP20-A/NP20D	-TF250FSIII-1064	< 8	38. 8	57. 7	76. 6	95. 6	114. 8	153. 4	192. 2	–
NP20DH	-TF200FSIII-1064	< 9. 5	_	55	73	92	110	146	183	_
QP30-A/NP30D	-TF350FSIII-1064	< 8. 3	– (4)	–	48. 8	60. 8	73	97. 5	122	146. 5
工作距离 Working distance(mm) (2)										
QP10	-TF200FSIII-1064		247. 5	385. 5	522. 5	–	–	–	–	–
QP14/NP14D	-TF200FSIII-1064		245. 5	383. 5	520. 5	857. 5	795. 5	–	–	–
QP20-A/NP20D	-TF250FSIII-1064		227	365	502	639	777	1052	1326	–
NP20DH	-TF200FSIII-1064		_	376	514	650	788	1063	1338	_
QP30-A/NP30D	-TF350FSIII-1064		–	–	501	638	776	1051	1325	1600
Z 向范围 Z range(mm) (3)										
QP10	-TF200FSIII-1064		130	180	1169	–	–	–	–	–
QP14/NP14D	-TF200FSIII-1064		155	480	1330	–	–	–	–	–
QP20-A/NP20D	-TF250FSIII-1064		25	90	220	420	755	–	–	–
NP20DH	-TF200FSIII-1064		_	0	30	75	140	340	655	_
QP30-A/NP30D	-TF350FSIII-1064		–	–	30	75	150	290	665	1165
分辨率 Resolution(μm)			3	4. 6	6	7. 6	9	12	15	18

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Nd:YAG 倍频（λ = 532nm）：

工作范围 Working dimension(mm)			200x200	300x300	400x400	500x500	600x600
光斑直径 Spot diameter (1)		输入 Beam in(mm)	输出 Beam out(μm)				
QP10	-TF200FSIII-532	<5	36.9	54	71.1	- (4)	-
QP14/NP14D	-TF200FSIII-532	<7	27	39.3	51.6	64.2	77.1
工作距离 Working distance(mm) (2)							
QP10	-TF200FSIII-532		247.5	385.5	522.5	-	-
QP14/NP14D	-TF200FSIII-532		245.5	383.5	520.5	657.5	795.5
Z 向范围 Z range（mm）(3)							
QP10	-TF200FSIII-532		130	180	1169	-	-
QP14/NP14D	-TF200FSIII-532		155	480	1330	-	-
分辨率 Resolution(μm)			3	4.6	6	7.6	9

Nd:YAG 三倍频（λ = 355nm）：

工作范围 Working dimension(mm)			200x200	300x300	400x400	500x500	600x600	800x800	1000x1000
光斑直径 Spot diameter (1)		输入 Beam in(mm)	输出 Beam out(μm)						
QP10	-TF200FSIII-355	<5	24.6	36	47.4	- (4)	-	-	-
QP14/NP14D	-TF200FSIII-355	<7	18	26.2	34.4	42.8	51.4	-	-
QP20-A/NP20D	-TF240FSIII-355	<8	12.6	19.5	24.9	32.3	37.4	50	62.8
工作距离 Working distance(mm) (2)									
QP10	-TF200FSIII-355		247.5	385.5	522.5	-	-	-	-
QP14/NP14D	-TF200FSIII-355		245.5	383.5	520.5	657.5	795.5	-	-
QP20-A/NP20D	-TF240FSIII-355		227	365	502	639	777	1052	1326
Z 向范围 Z range(mm) (3)									
QP10	-TF200FSIII-355		130	180	1169	-	-	-	-
QP14/NP14D	-TF200FSIII-355		155	480	1330	-	-	-	-
QP20-A/NP20D	-TF240FSIII-355		35	125	285	560	1030	-	-
分辨率 Resolution(μm)			3	4.6	6	7.6	9	12	15

适用波段与最大激光功率

激光 Laser	CO2	Nd：YAG	Nd：YAG 倍频	Nd：YAG 三倍频
波长 Wavelength（nm）	10600	1064	532	355
最大激光功率 Max. Laser power(W)				
常规功率 (Regular-Power)	200	200	50	250
高功率 (5) (High-Power)	1000	-	-	-

1. 上述资料如有更改，将不作另行通知 The above information is subject to change without prior notice.

2. 以上参数均为理论值 All of the above parameters are theoretical values.

(1) 实际光斑尺寸和标刻速度取决于材料及应用, 输入光束质量 M^2=1 Actual spot size and writing speed depend on the material and application, input beam quality M^2=1.

(2) 扫描系统出光处下沿到工作平面的距离。该距离取决于产品型号，并随着激光发散角和物镜公差而有所不同。
Distance between lower edge of galvo system where beam out and working plane. The distance depends on the product model and varies with the laser divergence angle and objective lens tolerance.

(3) 焦点在光轴方向上的可移动范围，其中包含了平场需要使用的高度。
The travel range of the focal point along the optical axis, which includes the height required for the flat-field application.

(4) “-”符号代表无参考数据，非产品推荐参数。 The hyphen ("-") denotes the absence of reference data and should not be construed as a recommended product specification.

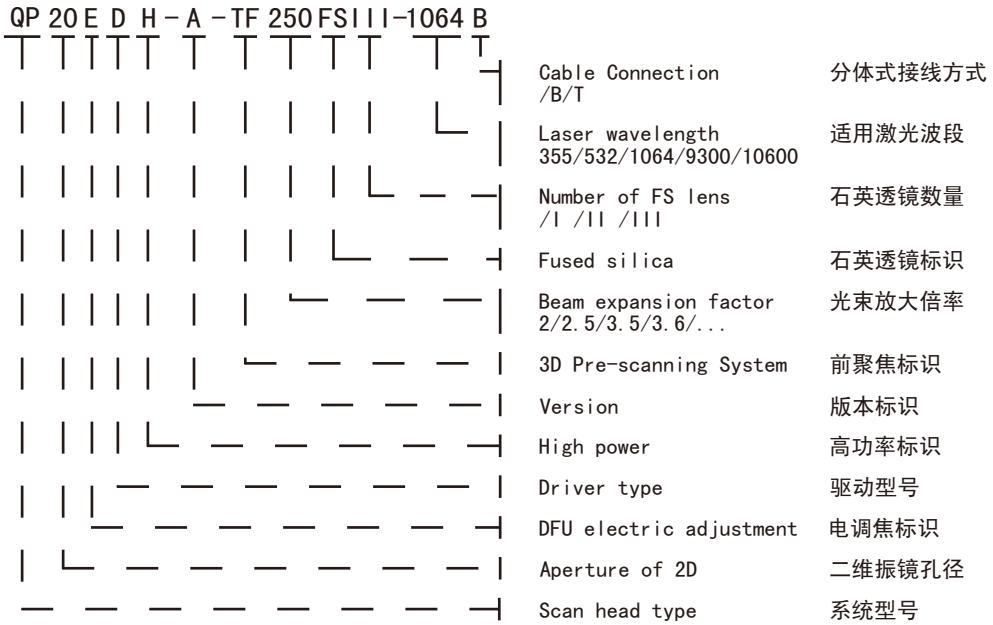
(5) 识别设备是否为高功率需要参照“前聚焦3D扫描系统型号说明”中的高功率标识。不具有此标识为常规配置。
To identify whether a device is high-power, refer to the high-power mark specified in the "Front Focus 3D Scanning System Model Description". Devices without this mark are considered to have a regular configuration.

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Front Focus 3D Scanning System Model Description

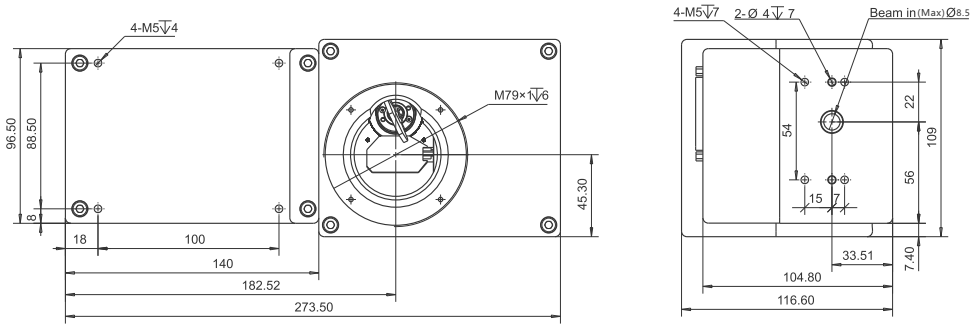
前聚焦3D扫描系统 型号说明



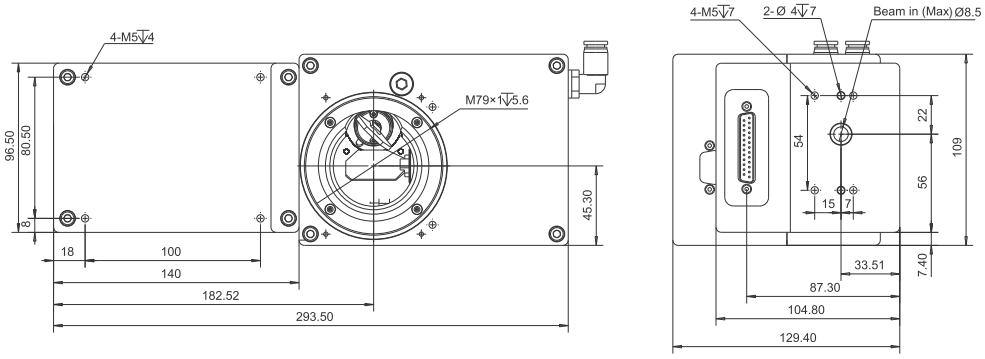
3D Pre-Scanning Solution Mechanical Drawings

前聚焦3D扫描系统 机械图纸

QP14



NP14



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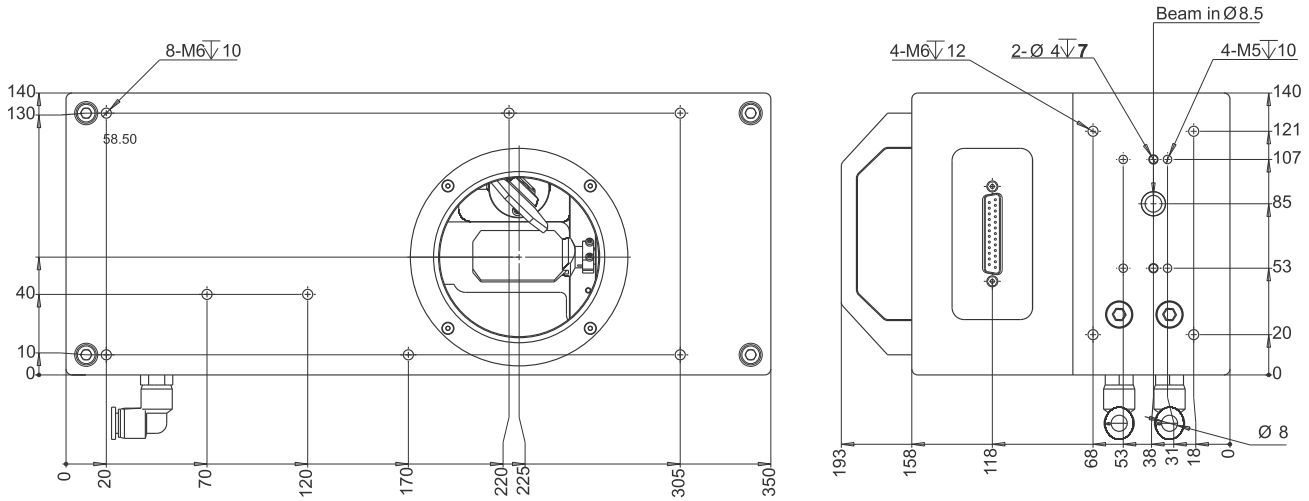
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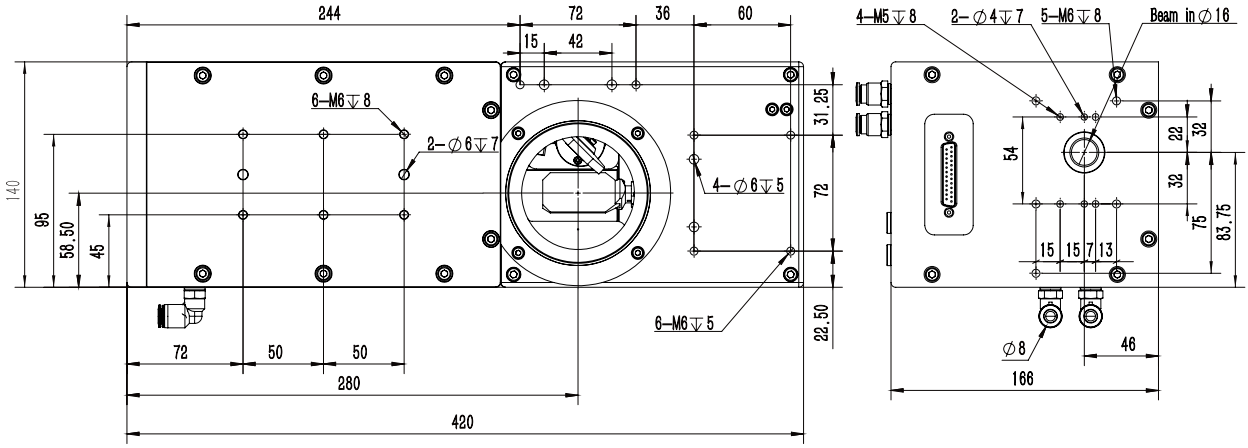
3D Pre-Scanning Solution Mechanical Drawings

前聚焦3D扫描系统 机械图纸

QP20-A/NP20D



NP20DH



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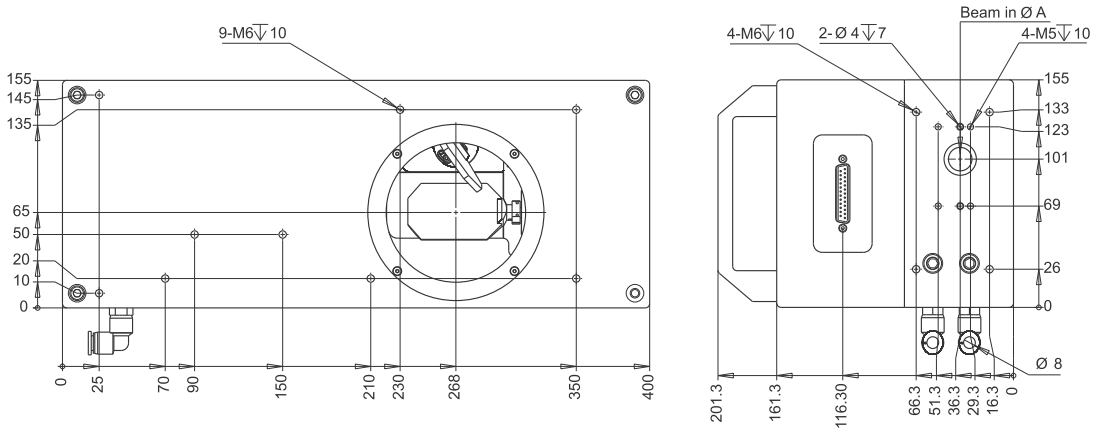
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3D Pre-Scanning Solution Mechanical Drawings

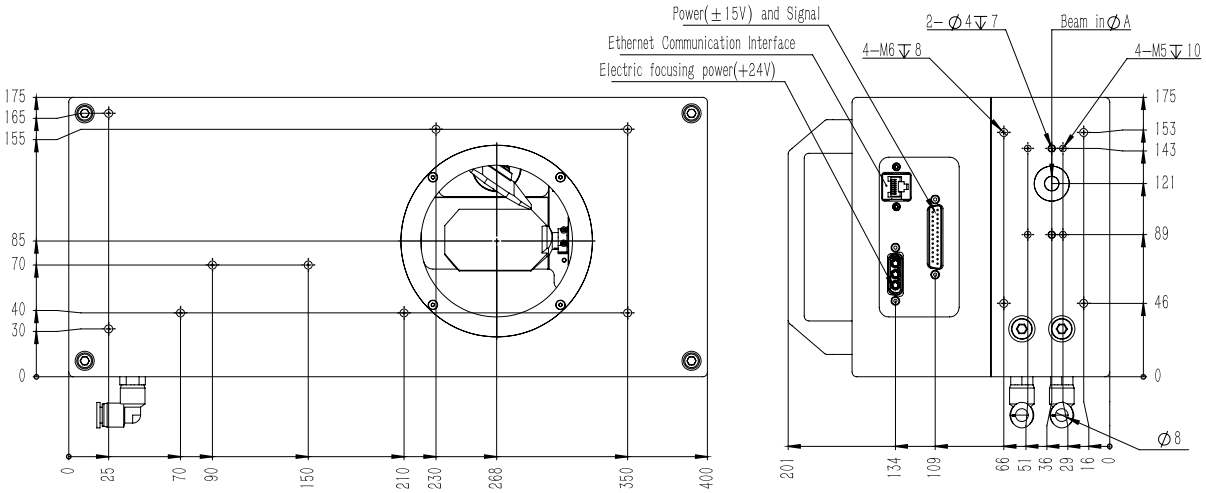
前聚焦3D扫描系统 机械图纸

QP30-A/QP30H-A/NP30D/NP30DH

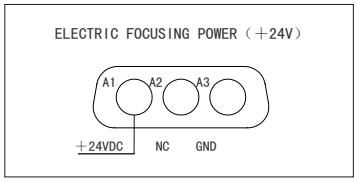


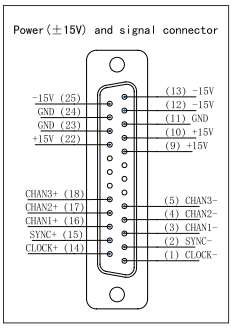
产品型号	A (mm)
QP30-A/NP30D	8.5
QP30H-A/NP30DH	16

QP30EH/NP30EDH



产品型号	A (mm)
QP30EH-TF320/NP30EDH-TF320	9
QP30EH-TF200/NP30EDH-TF200	16
QP30EH-TF195/NP30EDH-TF195	16





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Specific size is in accordant with the final product, Anshan precise have the right to make the change of the drawing. The above information is subject to change without notice

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