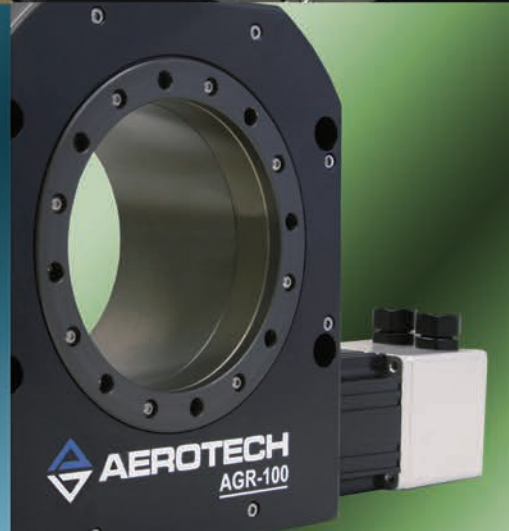
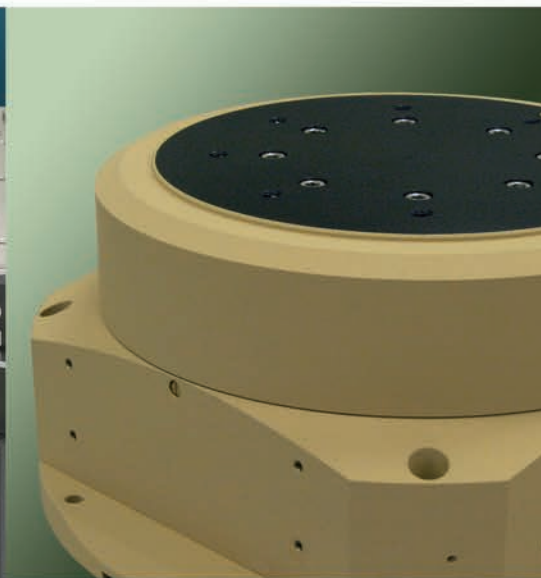
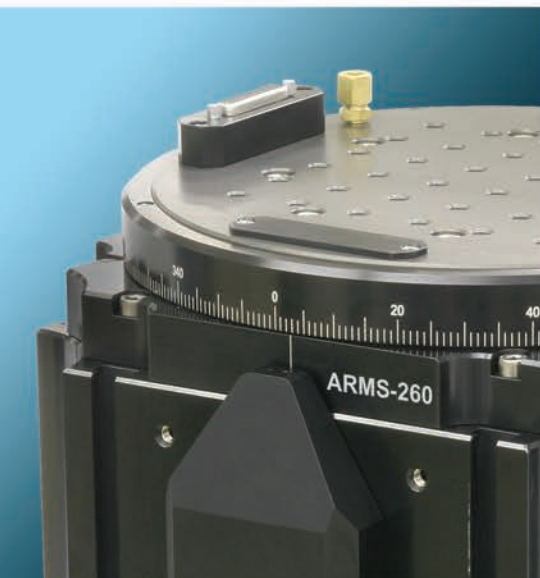


 **AEROTECH**
旋轉平台
Precision in Motion



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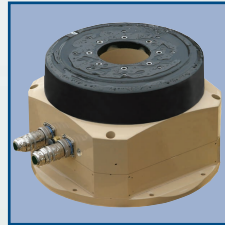
ABRS



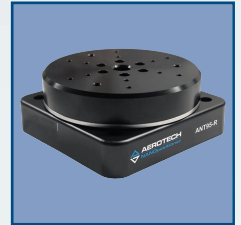
ABRT



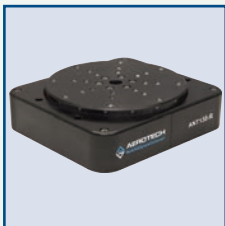
AXR



ASRT



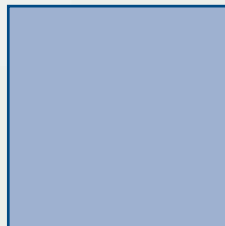
ANT95-R



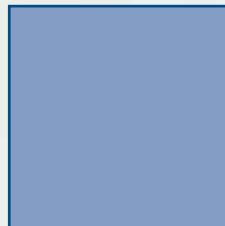
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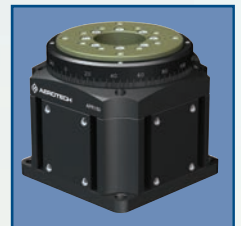
ASR1000



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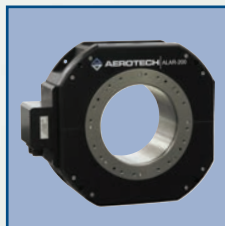
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APR



ARMS



ALAR



ACS



ACS LP

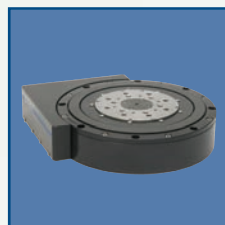


ASR1100

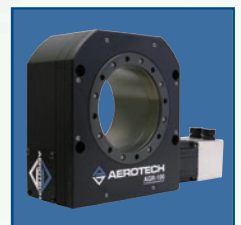
Aerotech 生產各種高精度旋轉平台包含 - 使用 Aerotech 生產之無刷伺服之直驅 (DD) 旋轉平台，與渦桿傳動旋轉平台。旋轉平台有許多種選項包含 - 不同尺寸之中空孔徑 (Aperture)，台面大小，安裝孔位選項等，為各種不同工業自動化應用之理想解決方案。Aerotech 生產之旋轉平台具有極佳的擺動 (Wobble) 與偏轉 (Runout) 特性，適用於工業機械手臂，光纖，光電，視覺檢測系統，工具機，封裝，半導體設備，醫療裝置雷射加工，電子零件生產，與其他高性能工業自動化應用等。另外，Aerotech 生產高性能驅動器與運動控制器，與高精度旋轉平台整合成極高性能之運動系統。



ASR1200



WaferMax T



AGR

ABRT

空氣軸承, 直驅旋轉平台

- 大扭力輸出, 直接驅動無槽, 無刷伺服馬達
- 無頓轉 (Zero cogging) 伺服馬達以提供極高之速度穩定性
- 極佳的誤差運動 (Error Motion) 與偏轉 (Runout) 特性
- 直接耦合, 高精度旋轉編碼器 (光學尺)
- 大尺寸中空口徑
- 完全無機械接觸

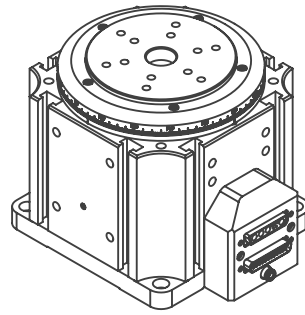
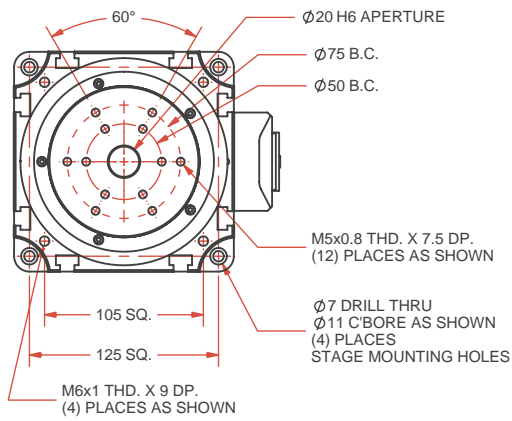
ABRT系列空氣軸承旋轉平台提供傑出之角度定位精度, 速度穩定性, 與誤差運動規格, 同時維持大負載能力與軸向與徑向剛性。ABRT可達到DVD 刻板 (DVD mastering), 晶圓檢測, 高精度量測, X-ray繞射, 光學元件檢測與生產, 微機電 / 奈米裝置生產之各種嚴苛要求。

ABRT Series	ABRT-150	ABRT-200	ABRT-260	
Width	146 mm	196 mm	260 mm	
Tabletop Diameter	100 mm	145 mm	200 mm	
Height	135 mm	165 mm	185 mm	
Aperture	20 mm	30 mm	50 mm	
Total Travel	360° Continuous			
Motor	Direct-Drive Brushless Servomotor			
Stall Torque, Continuous	0.36 N-m	3.7 N-m	6.7 N-m	
Peak Torque	1.4 N-m	14.6 N-m	26.6 N-m	
BEMF, Line-Line, Max	10.9 V _{pk} /krpm	163.6 V _{pk} /krpm	129.8 V _{pk} /krpm	
Continuous Current, Stall	3.8 A _{pk}	2.7 A _{pk}	6.2 A _{pk}	
	2.7 A _{rms}	1.9 A _{rms}	4.4 A _{rms}	
Torque Constant	0.09 N-m/A _{pk}	1.35 N-m/A _{pk}	1.07 N-m/A _{pk}	
	0.13 N-m/A _{rms}	1.91 N-m/A _{rms}	1.52 N-m/A _{rms}	
Bus Voltage	Up to 320 VDC			
Resolution ⁽¹⁾	0.267 μrad (0.055 arc sec)	0.174 μrad (0.036 arc sec)	0.133 μrad (0.027 arc sec)	
Fundamental Encoder Resolution	11,840 lines/rev	18,000 lines/rev	23,600 lines/rev	
Max Speed ⁽²⁾	1200 rpm	800 rpm	600 rpm	
Accuracy ⁽³⁾	±2 arc sec			
Repeatability	<1 arc sec			
Max Load ⁽⁴⁾	Axial	20 kg	41 kg	69 kg
	Radial	3 kg	6 kg	10 kg
	Tilt	3.5 N-m	8 N-m	18 N-m
Axial Error Motion (Synchronous)	<100 nm			
Radial Error Motion (Synchronous)	<150 nm			
Tilt Error Motion (Synchronous)	<2.4 μrad (<0.5 arc-sec)			
Axial Error Motion (Asynchronous)	<20 nm			
Radial Error Motion (Asynchronous)	<20 nm			
Tilt Error Motion (Asynchronous)	<0.2 μrad (<0.04 arc-sec)			
Operating Pressure ⁽⁶⁾	80 psig (5.5 bar) ± 5 psig (0.3 bar)			
Air Consumption ⁽⁷⁾	<56.6 SLPM (<2 SCFM)			
Inertia	Unloaded	2300 kg·mm ²	13,500 kg·mm ²	46,400 kg·mm ²
Total Mass		6.7 kg	14.7 kg	27.1 kg
Material	Aluminum			
Finish	Hardcoat (62 Rockwell Hardness)			

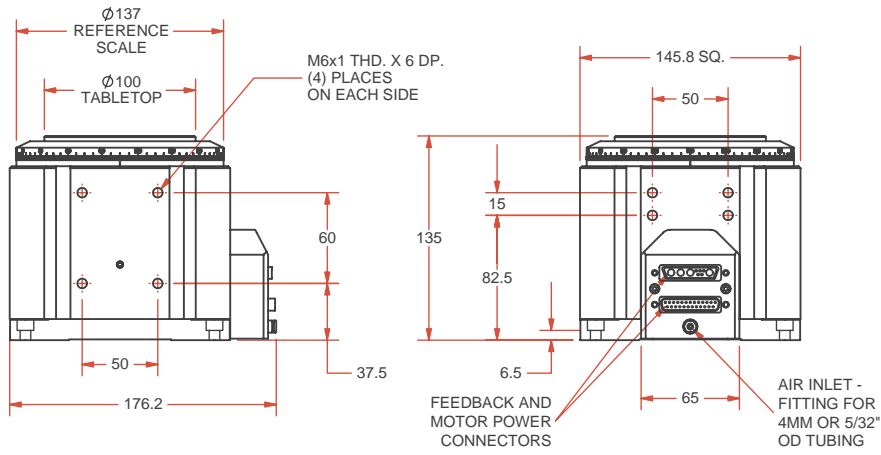
Notes:

1. Maximum resolution presumes A3200 controller using MXH500 multiplication, and accounts for controller quadrature.
2. Maximum speed based on stage capability. Maximum application velocity may be limited by system data rate and system resolution.
3. Certified with each stage. Requires the use of an Aerotech controller.
4. Maximum loads are mutually exclusive.
5. All error motion specifications measured at 60 rpm.
6. To protect air bearing against under-pressure, an in-line pressure switch tied to the motion controller is recommended.
7. Air supply must be clean, dry to 0° F dew point, and filtered to 0.25 μm or better. Recommend nitrogen at 99.9% purity.

ABRT-150



DIMENSIONS - MILLIMETERS



ABRT空氣軸承旋轉平台具有大負載能力與傑出軸向與徑向剛性

ABRS

空氣軸承, 直驅旋轉平台

- 直接驅動無槽, 無刷伺服馬達
- 無頓轉 (Zero cogging) 伺服馬達以提供極高之速度穩定性
- 極佳的誤差運動 (Error Motion) 與擺動 (Wobble) 特性
- 直接耦合, 高精度旋轉編碼器 (光學尺)
- 平面式設計, 降低平台高度
- 完全無機械接觸

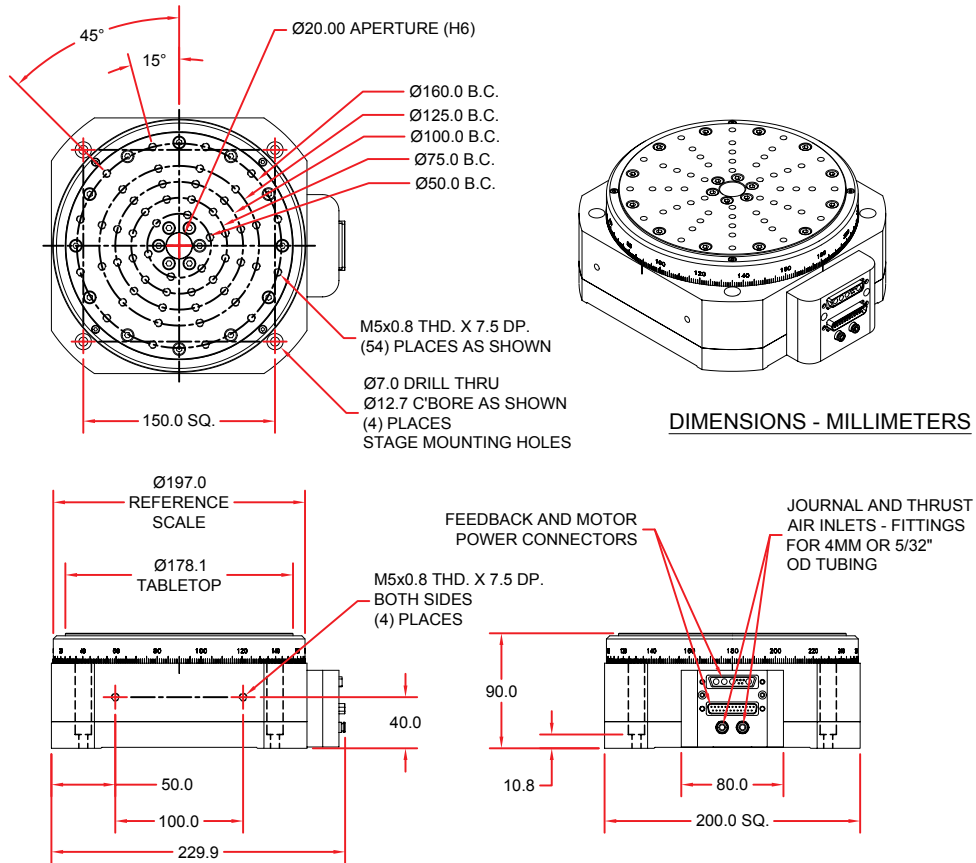
ABRS系列空氣軸承旋轉平台提供傑出之角度定位精度, 速度穩定性, 與誤差運動規格同時維持極低的平台整體高度。ABRS可達到晶圓檢測, 高精度量測, X-ray繞射, 光學元件檢測與生產, 微機電/奈米裝置生產之各種嚴苛要求。ABRS之特殊設計能夠將平台高度降到最低。

ABRS Series	ABRS-150MP	ABRS-200MP	ABRS-250MP	ABRS-300MP	
Width	150 mm	200 mm	250 mm	300 mm	
Tabletop Diameter	128.1 mm	178.1 mm	228.1 mm	278.1 mm	
Height	80 mm	90 mm	100 mm	110 mm	
Aperture	8 mm	20 mm	35 mm	75 mm	
Total Travel	360° Continuous				
Motor	S-50-39-A	S-76-35-A	S-130-39-A	S-180-44-A	
Stall Torque, Continuous	0.20 N-m	0.53 N-m	2.36 N-m	5.99 N-m	
Peak Torque	0.82 N-m	2.12 N-m	9.42 N-m	23.98 N-m	
BEMF, Line-Line, Max	10.3 V _{pk} /Krpm	32.1 V _{pk} /Krpm	75.1 V _{pk} /Krpm	268.7 V _{pk} /Krpm	
Continuous Current, Stall	2.4 A _{pk}	2.0 A _{pk}	3.8 A _{pk}	2.7 A _{pk}	
	1.7 A _{pk}	1.4 A _{pk}	2.7 A _{pk}	1.9 A _{pk}	
Torque Constant	0.09 N-m/A _{pk}	0.26 N-m/A _{pk}	0.62 N-m/A _{pk}	2.22 N-m/A _{pk}	
	0.12 N-m/A _{rms}	0.37 N-m/A _{rms}	0.88 N-m/A _{rms}	3.14 N-m/A _{rms}	
Bus Voltage	80 VDC				
Resolution ⁽¹⁾	0.873 μrad (0.18 arc sec)	0.383 μrad (0.079 arc sec)	0.267 μrad (0.055 arc sec)	0.174 μrad (0.036 arc sec)	
Fundamental Encoder Resolution	3600 lines/rev	8192 lines/rev	11,840 lines/rev	18,000 lines/rev	
Max Speed ⁽²⁾	300 rpm	300 rpm	500 rpm	500 rpm	
Accuracy ⁽³⁾	±3 arc sec				
Repeatability (Bi-Directional)	<2 arc sec				
Max Load ⁽⁴⁾	Axial	8 kg	31 kg	66 kg	97 kg
	Radial	4 kg	15 kg	36 kg	51 kg
	Tilt	3 N-m	10 N-m	28 N-m	45 N-m
Axial Error Motion (Synchronous)	<175 nm				
Radial Error Motion (Synchronous)	<450 nm				
Tilt Error Motion (Synchronous)	<9.7 μrad (<2.0 arc sec)	<3.4 μrad (<0.7 arc-sec)	<2.4 μrad (<0.5 arc sec)	<2.4 μrad (<0.5 arc sec)	
Axial Error Motion (Asynchronous)	<20 nm				
Radial Error Motion (Asynchronous)	<20 nm				
Tilt Error Motion (Asynchronous)	<0.4 μrad (<0.08 arc sec)	<0.3 μrad (<0.06 arc-sec)	<0.2 μrad (<0.04 arc sec)	<0.2 μrad (<0.04 arc sec)	
Operating Pressure ⁽⁶⁾	80 psig (5.5 bar) + 0 psig (0.0 bar) / - 10 psig (0.7 bar)				
Air Consumption ⁽⁷⁾	<56.6 SLPM (<2 SCFM)				
Inertia	Unloaded	3850 kg-mm ²	13,800 kg-mm ²	39,100 kg-mm ²	102,000 kg-mm ²
Total Mass		4.8 kg	9.1 kg	15.6 kg	24.5 kg
Material	Aluminum				
Finish	Hardcoat (62 Rockwell Hardness)				

Notes:

1. Maximum resolution presumes A3200 controller using MXH500 multiplication, and accounts for controller quadrature.
2. Maximum speed based on stage capability. Maximum application velocity may be limited by system data rate and system resolution.
3. Certified with each stage. Requires the use of an Aerotech controller.
4. Maximum loads are mutually exclusive.
5. All error motion specifications measured at 60 rpm.
6. To protect air bearing against under-pressure, an in-line pressure switch tied to the motion controller is recommended.
7. Air supply must be clean, dry to 0° F dew point, and filtered to 0.25 μm or better. Recommend nitrogen at 99.9% purity.

ABRS-200MP



ABRS之特殊設計能夠
將平台高度降到最低



ADRT

機械軸承, 直驅旋轉平台

- 大扭力輸出, 直接驅動無槽, 無刷伺服馬達
- 無頓轉 (Zero cogging) 伺服馬達以提供極高之速度穩定性
- 極佳的誤差運動 (Error Motion) 與偏轉 (Runout) 特性
- 直接耦合, 高精度旋轉編碼器 (光學尺)
- 大尺寸中空口徑

ADRT系列機械軸承直驅旋轉平台提供傑出之角度定位精度與速度穩定性, 適用於取放設備, 高速雷射加工, 高精度晶圓檢測等。大尺寸雙軸承提供最高的性能並維持傑出之擺動 (Wobble), 側向剛性, 與重複精度。大尺寸之軸承提供高負載並維持高性能。

ADRT Series		ADRT-100-85	ADRT-100-135	ADRT-150-115	ADRT-150-135	ADRT-150-180
Bearing Option		-P (Precision)/-S (Standard)				
Continuous Current, Stall	A _{pk}	2.0	3.7	3.8	3.4	3.1
	A _{rms}	1.43	2.6	2.7	2.4	2.2
Motor Type		S-76-35-A	S-76-85-A	S-130-39-A	S-130-60-A	S-130-102-A
Bus Voltage		Up to 320 VDC				
Accuracy ⁽¹⁾		5 arc sec (-P); 60 arc sec (-S)				
Repeatability		3 arc sec				
Axial Error Motion		5 μm (-P); 10 μm (-S)				
Radial Error Motion ⁽²⁾		5 μm (-P); 10 μm (-S)				
Tilt Error Motion		10 arc sec				
Height		85 mm	135 mm	115 mm	135 mm	180 mm
Aperture		13 mm		50 mm		
Resolution		0.873-87.3 μrad (0.18 -18 arc sec)				
Radial Load ⁽³⁾		10 kg		25 kg		
Axial Load		15 kg		30 kg		
Rated Speed		1000 rpm (-S); 1500 rpm (-P)		600 rpm		
Inertia		0.00028 kg-m ²	0.00067 kg-m ²	0.003379 kg-m ²	0.004958 kg-m ²	0.008118 kg-m ²
Mass		2.3 kg	2.9 kg	5.3 kg	6.9 kg	10.2 kg
Finish	Table	Hardcoat				
	Stage	Black Anodize				

ADRT Series		ADRT-200-155	ADRT-200-185	ADRT-260-160	ADRT-260-180
Bearing Option		-P (Precision)/-S (Standard)			
Continuous Current, Stall	A _{pk}	5.1	4.9	5.9	5.8
	A _{rms}	3.6	3.5	4.2	4.1
Motor Type		S-180-69-A	S-180-94-A	S-240-63-A	S-240-83-A
Bus Voltage		Up to 320 VDC			
Accuracy ⁽¹⁾		5 arc sec (-P); 60 arc sec (-S)			
Repeatability		3 arc sec			
Axial Error Motion		5 μm (-P); 10 μm (-S)			
Radial Error Motion ⁽²⁾		5 μm (-P); 10 μm (-S)			
Tilt Error Motion		10 arc sec			
Height		155 mm		160 mm	
Aperture		75 mm		100 mm	
Resolution		0.582-58.2 μrad (0.12-12 arc sec)			
Radial Load ⁽³⁾		80 kg		110 kg	
Axial Load		140 kg		170 kg	
Rated Speed		500 rpm		375 rpm	
Inertia		0.020991 kg-m ²	0.027666 kg-m ²	0.066488 kg-m ²	0.08566 kg-m ²
Mass		13.4 kg	16.7 kg	25.4 kg	30.6 kg
Finish	Table	Hardcoat			
	Stage	Black Anodize			

Note:

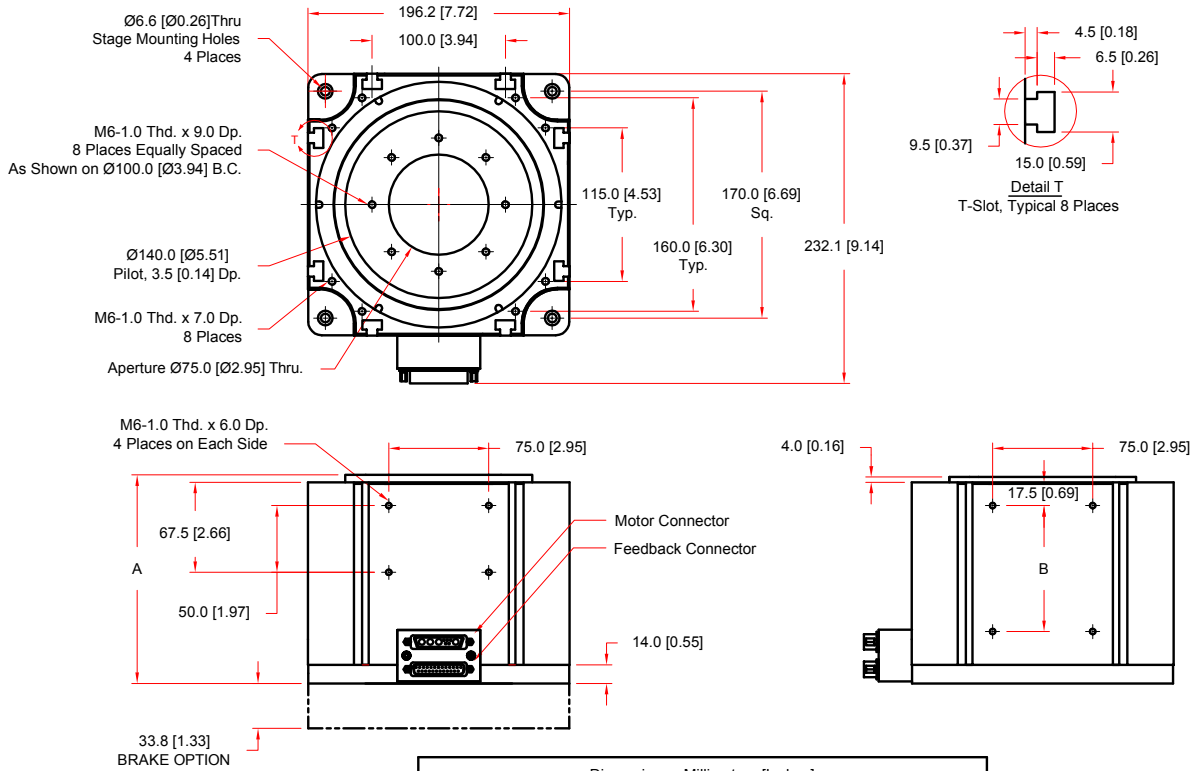
1. P accuracy requires calibration and Aerotech controls.

2. Specifications are for single axis systems. Performance of multi axis systems is payload and workpoint dependent. Consult factory for multi axis or nonstandard applications.

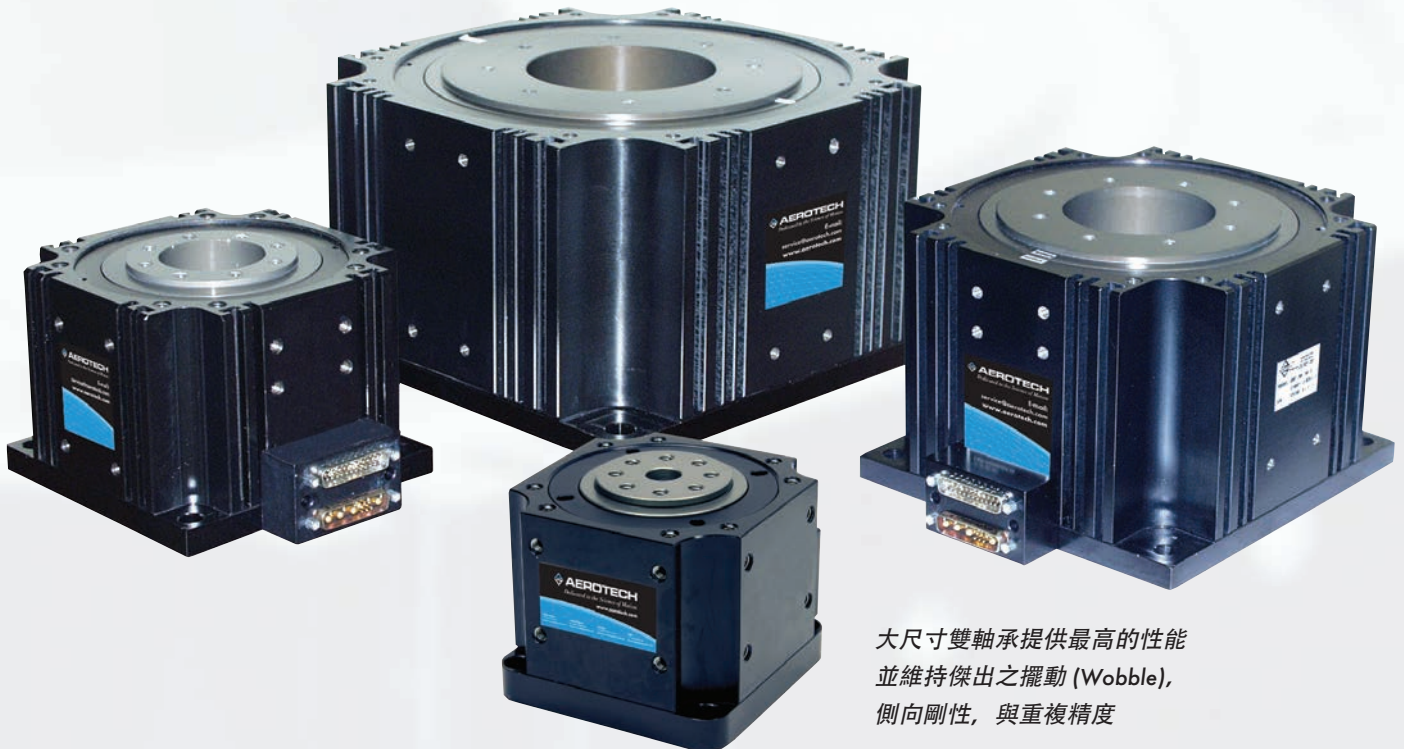
3. Moment load based on 5 year continuous rotation at 250 rpm with maximum axial load applied. Larger moment loads possible for low speed and/or low duty cycle applications.

Consult Aerotech for additional information.

ADRT-200



Dimensions - Millimeters [Inches]		
Base Model	A	B
ADRT-200-155-S	154.8 [6.09]	80 [3.15]
ADRT-200-155-P	154.8 [6.09]	80 [3.15]
ADRT-200-185-S	179.8 [7.08]	100 [3.94]
ADRT-200-185-P	179.8 [7.08]	100 [3.94]



大尺寸雙軸承提供最高的性能
 並維持傑出之擺動 (Wobble),
 側向剛性, 與重複精度

ADRS

機械軸承, 直驅旋轉平台

- 大扭力輸出, 直接驅動無槽, 無刷伺服馬達
- 無頓轉 (Zero cogging) 伺服馬達以提供極高之速度穩定性
- 直接耦合, 高精度旋轉編碼器 (光學尺)
- 極低的平台高度降低工作高度

ADRS之設計理念是將平台高度降到最低。極低的平台高度降低累加誤差, 另外, ADRS提供中空孔徑可以提供物件通過如雷射光束傳導。ADRS具有極低的保養需求與高產能, 提供使用者最低的擁有成本。

ADRS Series		ADRS-100		ADRS-150		ADRS-200	
Tabletop Diameter		95 mm		140 mm		190 mm	
Aperture		6 mm		15 mm		26 mm	
Motor (-A/-B)		S-76-35-A	S-76-35-B	S-130-39-A	S-130-39-B	S-180-44-A	S-180-44-B
Continuous Current, Stall	A _{pk}	2	4	3.8	7.6	2.7	5.3
	A _{rms}	1.4	2.8	2.7	5.4	1.9	3.8
Bus Voltage		320	160	320	160	320	160
Resolution		0.87-87.3 μrad (0.18-18 arc sec)		0.315-31.5 μrad (0.065-6.5 arc sec)			
Max Speed ⁽¹⁾		1500 rpm		600 rpm		400 rpm	
Accuracy	Uncalibrated	388 μrad (80 arc sec)					
	Calibrated ⁽²⁾	29.1 μrad (6 arc sec)					
Repeatability		14.6 μrad (3 arc sec)					
Max Load ⁽³⁾	Axial	7 kg		20 kg		40 kg	
	Radial	3 kg		10 kg		20 kg	
Axial Error Motion ⁽⁴⁾		2 μm		5 μm		5 μm	
Radial Error Motion ⁽⁴⁾		3 μm		5 μm		5 μm	
Tilt Error Motion		48.5 μrad (10 arc sec)					
Inertia	Unloaded	0.00038 kg-m ²		0.00242 kg-m ²		0.00843 kg-m ²	
Total Mass		2.0 kg		4.3 kg		7.6 kg	
Finish	Tabletop	Hardcoat					
	Stage	Black Anodize					

Notes:

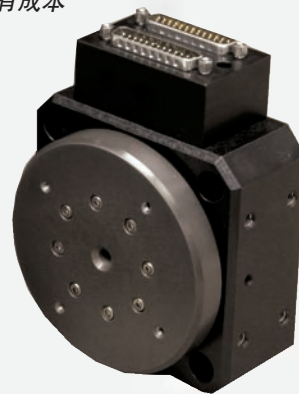
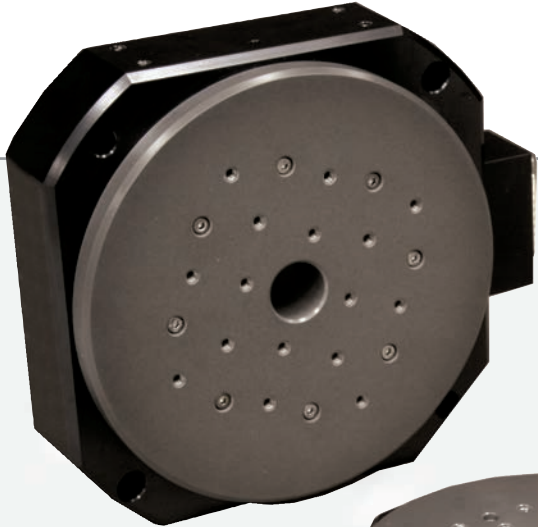
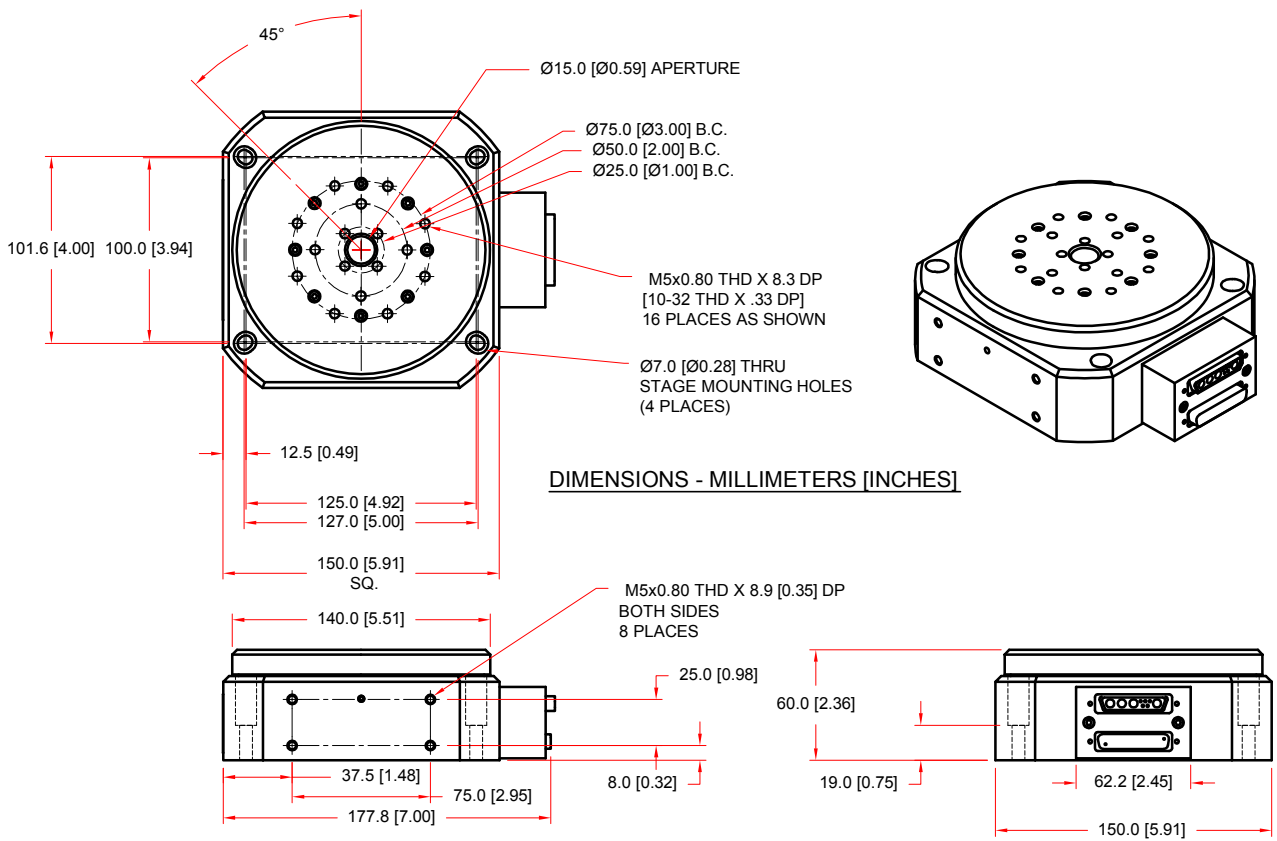
1. Maximum speed is based on stage capability. Actual speed may depend on encoder resolution, load, amplifier bus voltage, and motor. See the S-series rotary motor for more information.

2. With HALAR.

3. Maximum loads are mutually exclusive.

4. For the ADRS-100, error motion specifications are below 700 rpm. Above 700 rpm, the max radial error is 5 microns. Errors measured 25 mm above the tabletop.

ADRS-150



ADRS具有極低的保養需求與高產能，提供使用者最低的擁有成本

APR

機械軸承, 直驅旋轉平台

- 最供最高至 ± 1.5 arc-second 之定位精度
- 軸向負載最高至 450 kg
- 增量式或絕對式編碼器
- 大尺寸之軸承提供高負載與側向負載能力
- 375-800 rpm 連續旋轉速度
- 七種型號可供選擇, 每種型號可選擇 50, 75, or 100 mm 中空孔徑

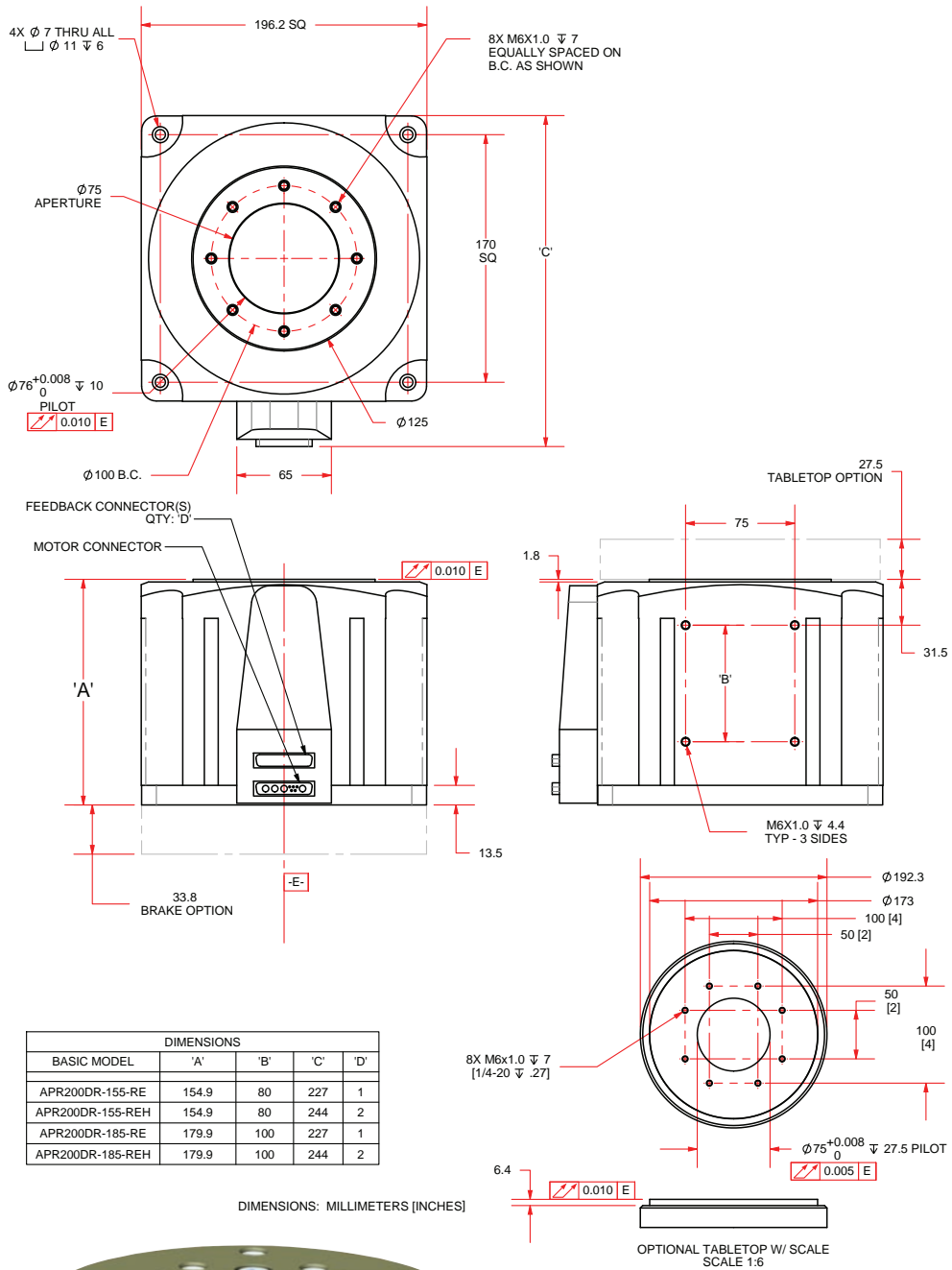
APR系列直接驅動旋轉平台具有極高的角度定位精度。經過精密加工研磨之平台零組件, 與高精度軸承提供極低的誤差運動 (Error Motion), 位置誤差, 與重複精度誤差。另外, 高精度光學編碼器提供極佳之定位能力與低抖動 (jitter) 特性。APR適用於旋轉平台測試, 定位, 光學元件校正與量測應用。

APR Series			APR200DR-155	APR200DR-185	APR260DR-160	APR260DR-180
Travel			Continuous (Optional 270° Max Limited)			
Accuracy	Standard	Uncalibrated	33 arc sec		25 arc sec	
		Calibrated	3 arc sec		2 arc sec	
	High Accuracy	Uncalibrated	3 arc sec		2 arc sec	
		Calibrated	1.75 arc sec		1.50 arc sec	
Resolution (Min. Mechanical Step)			0.06 arc sec		0.04 arc sec	
Repeatability (Bi-Directional) ⁽¹⁾			1.00 arc sec		0.75 arc sec	
Repeatability (Uni-Directional)			0.50 arc sec		0.50 arc sec	
Total Tilt Error Motion ⁽¹⁾			2.00 arc sec			
Total Axial Error Motion ⁽¹⁾			1.50 μ m			
Total Radial Error Motion ⁽¹⁾			1.50 μ m			
Maximum Speed ⁽³⁾	-A		500 rpm		375 rpm	
	-B		700 rpm		N/A	
Maximum Acceleration			380 rad/s ²	440 rad/s ²	175 rad/s ²	215 rad/s ²
Aperture			75 mm		100 mm	
Maximum Torque (Continuous)			11.12 Nm	15.93 Nm	19.71 Nm	29.09 Nm
Load Capacity	Axial		205 kg		250 kg	
	Radial		100 kg		135 kg	
Rotor Inertia (Unloaded)			0.026 kg-m ²	0.032 kg-m ²	0.10 kg-m ²	0.12 kg-m ²
Stage Mass ⁽⁴⁾			17.8 kg	22 kg	29.8 kg	35.4 kg
Material			Aluminum; Hardcoat/Anodize Finish			
MTBF (Mean Time Between Failure)			20,000 hours			

Notes:

1. Certified with each stage.
2. All error motion specifications are measured at 60 rpm.
3. Maximum speed listed is stage and motor dependent (assuming a 340 V bus). Actual speed may be lower due to motor back emf or encoder bandwidth (see Encoder Bandwidth table). Consult an Aerotech Applications Engineer for more details.
4. Mass listed is for the standard stage option (no brake and no tabletop). Consult Aerotech if brake and tabletop masses are desired.

APR200



APR適用於旋轉平台測試，定位，
光學元件校正與量測應用

ALAR

機械軸承, 直驅旋轉平台

- 5 種不同中空孔徑: 100 mm, 150 mm, 200 mm, 250 mm, 325 mm
- 無限或有限行程
- 軸向負載最高至 595 kg
- 大尺寸之軸承提供高負載與側向負載能力
- 傑出的定位精度與重複精度
- 直接驅動, 長時間運作維持定位精度不變
- 45-300 rpm 連續旋轉速度
- 提供 10^{-6} 真空選項

Aerotech's ALAR 系列直驅旋轉平台提供傑出之角度定位精度與速度穩定性, 與極大的中空孔徑。整合大孔徑與直驅馬達, ALAR系列讓渦桿驅動大口徑旋轉平台成為歷史。傳統渦桿驅動大口徑旋轉平台若要承載相同負載時, 通常僅只能具有15 rpm或更低的速度。ALAR直驅旋轉平台在相同負載下, 可達到300 rpm連續轉速, 具有超過渦桿驅動平台五倍的速度。



ALAR Series		ALAR-100-SP	ALAR-100-LP	ALAR-150-SP	ALAR-150-LP
Aperture		100 mm (3.94 in)	100 mm (3.94 in)	150 mm (5.91 in)	150 mm (5.91 in)
Motor		S-180-44-A	Brushless Slotless	S-240-43-A	Brushless Slotless
Continuous Current	A_{pk}	2.7	5.76	6.2	5.41
	A_{rms}	1.9	4.1	4.4	4.1
Peak Current, Stall	A_{pk}	10.8	33.5	24.8	31.4
	A_{rms}	7.6	23.7	17.5	22.2
Bus Voltage		Up to 340 VDC			
Length		250 mm (9.84 in)	250 mm (9.84 in)	300 mm (11.81 in)	300 mm (11.81 in)
Width		250 mm (9.84 in)	250 mm (9.84 in)	300 mm (11.81 in)	300 mm (11.81 in)
Height		100 mm (3.94 in)	65 mm (2.56 in)	100 mm (3.94 in)	65 mm (2.56 in)
Unlimited Travel		Yes			
Maximum Limited Travel		$\pm 170^\circ$	$\pm 170^\circ$	$\pm 170^\circ$	$\pm 170^\circ$
Maximum Velocity @ 160 V Bus ⁽¹⁾		300 rpm	50 rpm	250 rpm	45 rpm
Maximum Acceleration		1364 rad/s ²	1009 rad/s ²	1330 rad/s ²	829 rad/s ²
Resolution ⁽²⁾		0.1 μ rad (0.02 arc-sec)	0.1 μ rad (0.02 arc-sec)	0.08 μ rad (0.016 arc-sec)	0.09 μ rad (0.018 arc-sec)
Maximum Torque		23.9 N-m (211.5 lb-in)	11.9 N-m (105.3 lb-in)	42.9 N-m (379.7 lb-in)	15.4 N-m (136.3 lb-in)
Continuous Torque		6.0 N-m (53.1 lb-in)	2.0 N-m (17.7 lb-in)	10.7 N-m (94.7 lb-in)	2.6 N-m (23.0 lb-in)
Stage Mass		16.3 kg	8.3 kg	18.6 kg	9.8 kg
Stage Mass with Limits		17 kg	8.9 kg	19.6 kg	10.8 kg
Shaft Inertia		0.022 kg-m ²	0.022 kg-m ²	0.040 kg-m ²	0.031 kg-m ²
Shaft Inertia with Limits		0.026 kg-m ²	0.026 kg-m ²	0.051 kg-m ²	0.042 kg-m ²
Axial Load		1550 N (348 lb)	1175 N (264 lb)	1950 N (438 lb)	1325 N (298 lb)
Radial Load		1350 N (303 lb)	950 N (214 lb)	1925 N (433 lb)	1275 N (287 lb)
Moment Load		250 N-m	150 ⁽³⁾ N-m	450 N-m	225 ⁽³⁾ N-m
Repeatability		$\pm 2.4 \mu$ rad (± 0.5 arc sec)			
Accuracy ⁽⁴⁾		$\pm 9.7 \mu$ rad (± 2 arc sec)			
Tilt-Error Motion		9.7 μ rad (2.0 arc sec)			

Note:

1. Square-wave digital encoder options will limit maximum speed below the listed value. Contact factory for specific stage and encoder speed combination.

2. Resolution assumes -AS encoder with 2000X controller multiplication.

3. The ALAR-LP base must be fully supported by a rigid mounting plate to achieve this moment load.

4. Certified with each stage. Requires the use of an Aerotech controller.

ALAR Series	ALAR-200-SP	ALAR-200-LP	ALAR-250-SP-2	ALAR-250-SP-3	ALAR-250-LP	
Aperture	200 mm (7.87 in)	200 mm (7.87 in)	250 mm (9.84 in)	250 mm (9.84 in)	250 mm (9.84 in)	
Motor	Brushless Slotless					
Continuous Current	A _{pk}	5.3	5.3	5.3	7.95	5.3
	A _{rms}	3.75	3.75	3.75	5.62	3.75
Peak Current, Stall	A _{pk}	34.8	34.8	34.8	52.2	34.8
	A _{rms}	24.6	24.6	24.6	36.9	24.6
Bus Voltage	Up to 340 VDC					
Length	400 mm (15.75 in)	400 mm (15.75 in)	450 mm (17.72 in)	450 mm (17.72 in)	450 mm (17.72 in)	
Width	400 mm (15.75 in)	400 mm (15.75 in)	450 mm (17.72 in)	450 mm (17.72 in)	450 mm (17.72 in)	
Height	150 mm (5.91 in)	100 mm (3.94 in)	150 mm (5.91 in)	150 mm (5.91 in)	100 mm (3.94 in)	
Unlimited Travel	Yes					
Maximum Limited Travel	±170°	±170°	±170°	±170°	±170°	
Maximum Velocity ⁽¹⁾	90 rpm	90 rpm	140 rpm	140 rpm	90 rpm	
Maximum Acceleration	361 rad/s ²	570 rad/s ²	287 rad/s ²	287 rad/s ²	407 rad/s ²	
Resolution ⁽²⁾	0.06 µrad (0.012 arc-sec)	0.07 µrad (0.014 arc-sec)	0.05 µrad (0.01 arc-sec)	0.05 µrad (0.01 arc-sec)	0.05 µrad (0.01 arc-sec)	
Maximum Torque	86 N-m (761.2 lb-in)	86 N-m (761.2 lb-in)	92 N-m (814.3 lb-in)	138 N-m (1221.4 lb-in)	92 N-m (814.3 lb-in)	
Continuous Torque	12.9 N-m (114.2 lb-in)	12.9 N-m (114.2 lb-in)	14.1 N-m (124.8 lb-in)	21.1 N-m (186.8 lb-in)	14.1 N-m (124.8 lb-in)	
Stage Mass	40.4 kg	28.2 kg	51.3 kg	51.3 kg	35.0 kg	
Stage Mass with Limits	43.1 kg	30.1 kg	54.5 kg	54.5 kg	37.4 kg	
Shaft Inertia	0.320 kg-m ²	0.190 kg-m ²	0.500 kg-m ²	0.500 kg-m ²	0.310 kg-m ²	
Shaft Inertia with Limits	0.359 kg-m ²	0.229 kg-m ²	0.573 kg-m ²	0.573 kg-m ²	0.383 kg-m ²	
Axial Load	4675 N (1051 lb)	4350 N (978 lb)	4950 N (1113 lb)	4950 N (1113 lb)	4950 N (1113 lb)	
Radial Load	4775 N (1073 lb)	4125 N (927 lb)	5200 N (1169 lb)	5200 N (1169 lb)	5050 N (1135 lb)	
Moment Load	1600 N-m	1075 ⁽³⁾ N-m	1825 N-m	1825 N-m	1475 ⁽³⁾ N-m	
Repeatability	±2.4 µrad (±0.5 arc sec)					
Accuracy ⁽⁴⁾	±9.7 µrad (±2 arc sec)					
Tilt-Error Motion	9.7 µrad (2.0 arc sec)					

ALAR Series	ALAR-325-SP-2	ALAR-325-SP-3	ALAR-325-LP	
Aperture	325 mm (12.80 in)	325 mm (12.80 in)	325 mm (12.80 in)	
Motor	Brushless Slotless			
Continuous Current	A _{pk}	5.1	7.65	5.1
	A _{rms}	3.63	5.41	3.63
Peak Current, Stall	A _{pk}	31.2	46.8	31.2
	A _{rms}	22.1	33.1	22.1
Bus Voltage	Up to 340 VDC			
Length	525 mm (20.67 in)	525 mm (20.67 in)	525 mm (20.67 in)	
Width	525 mm (20.67 in)	525 mm (20.67 in)	525 mm (20.67 in)	
Height	150 mm (5.91 in)	150 mm (5.91 in)	100 mm (3.94 in)	
Unlimited Travel	Yes			
Maximum Limited Travel	±170°	±170°	±170°	
Maximum Velocity ⁽¹⁾	150 rpm	150 rpm	120 rpm	
Maximum Acceleration	185 rad/s ²	185 rad/s ²	339 rad/s ²	
Resolution ⁽²⁾	0.04 µrad (0.009 arc-sec)	0.04 µrad (0.009 arc-sec)	0.04 µrad (0.009 arc-sec)	
Maximum Torque	143 N-m (1265.7 lb-in)	214.9 N-m (1902.0 lb-in)	143 N-m (1265.7 lb-in)	
Continuous Torque	23.4 N-m (207.1 lb-in)	35.1 N-m (310.7 lb-in)	23.4 N-m (207.1 lb-in)	
Stage Mass	61.2 kg	61.2 kg	44.5 kg	
Stage Mass with Limits	64.9 kg	64.9 kg	49.9 kg	
Shaft Inertia	1.01 kg-m ²	1.01 kg-m ²	0.55 kg-m ²	
Shaft Inertia with Limits	1.2 kg-m ²	1.2 kg-m ²	0.675 kg-m ²	
Axial Load	5825 N (1310 lb)	5825 N (1310 lb)	5825 N (1310 lb)	
Radial Load	6650 N (1495 lb)	6650 N (1495 lb)	6450 N (1450 lb)	
Moment Load	2650 N-m	2650 N-m	2200 ⁽³⁾ N-m	
Repeatability	±2.4 µrad (±0.5 arc sec)			
Accuracy ⁽⁴⁾	±9.7 µrad (±2 arc sec)			
Tilt-Error Motion	9.7 µrad (2.0 arc sec)			

Note:

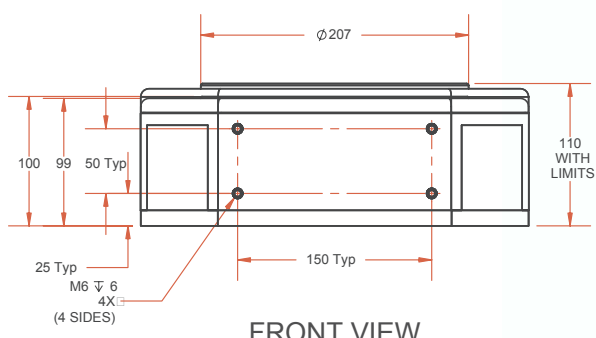
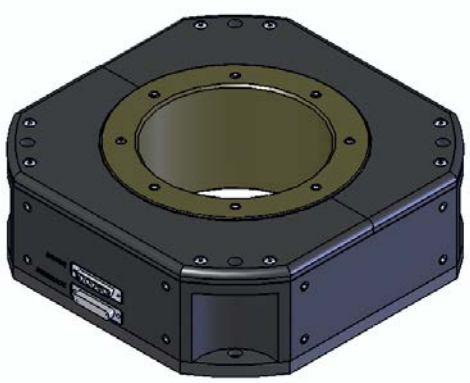
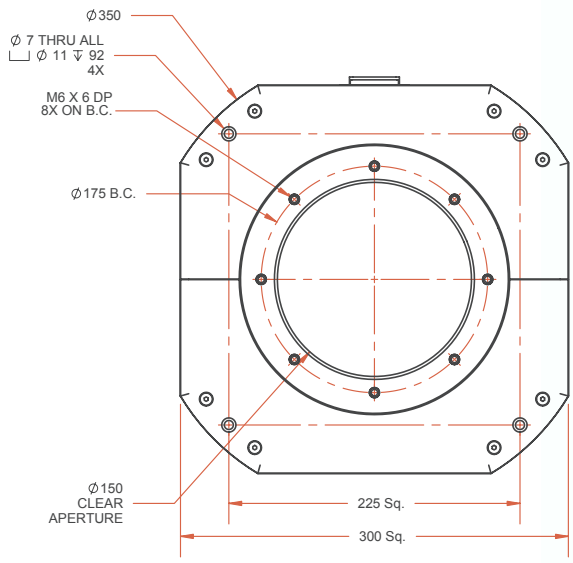
1. Square-wave digital encoder options will limit maximum speed below the listed value. Contact factory for specific stage and encoder speed combination.

2. Resolution assumes -AS encoder with 2000X controller multiplication.

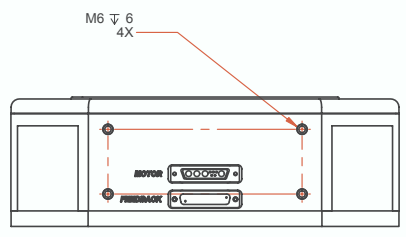
3. The ALAR-LP base must be fully supported by a rigid mounting plate to achieve this moment load.

4. Certified with each stage. Requires the use of an Aerotech controller.

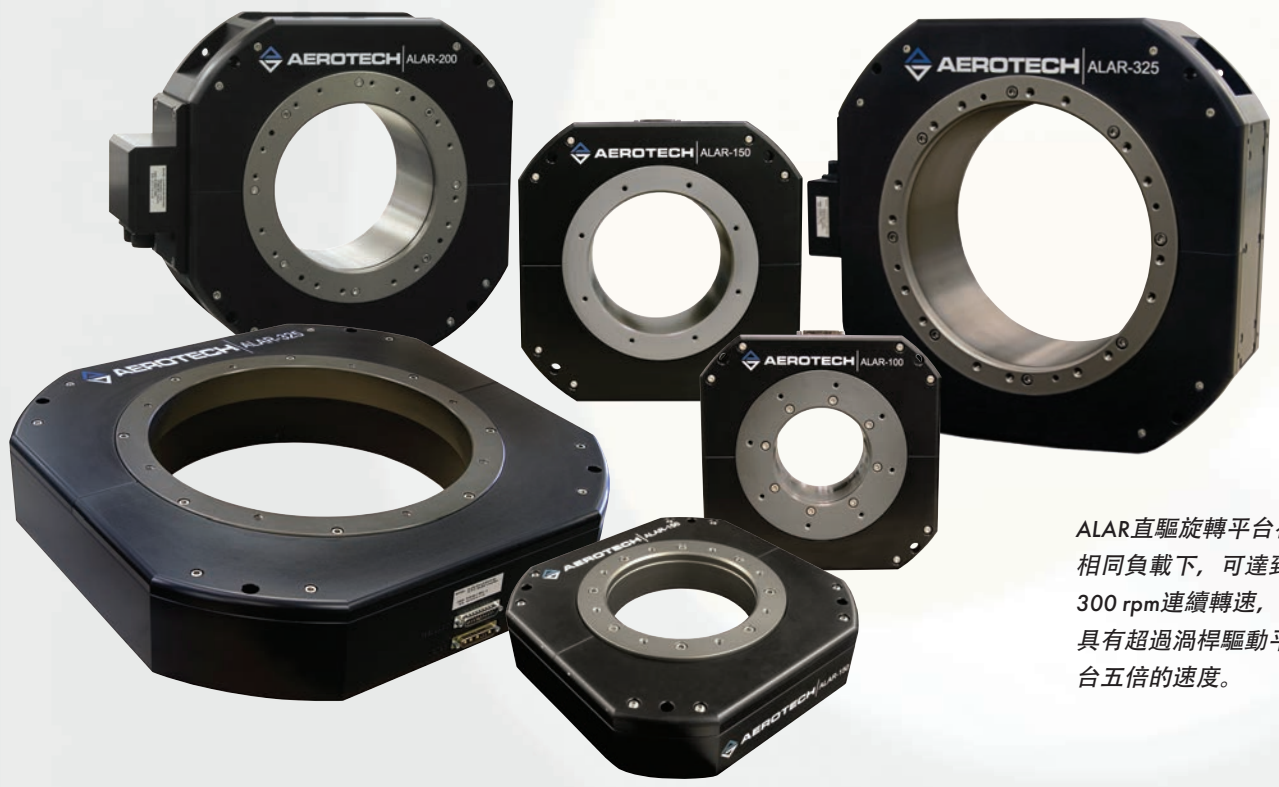
ALAR-150-SP



FRONT VIEW

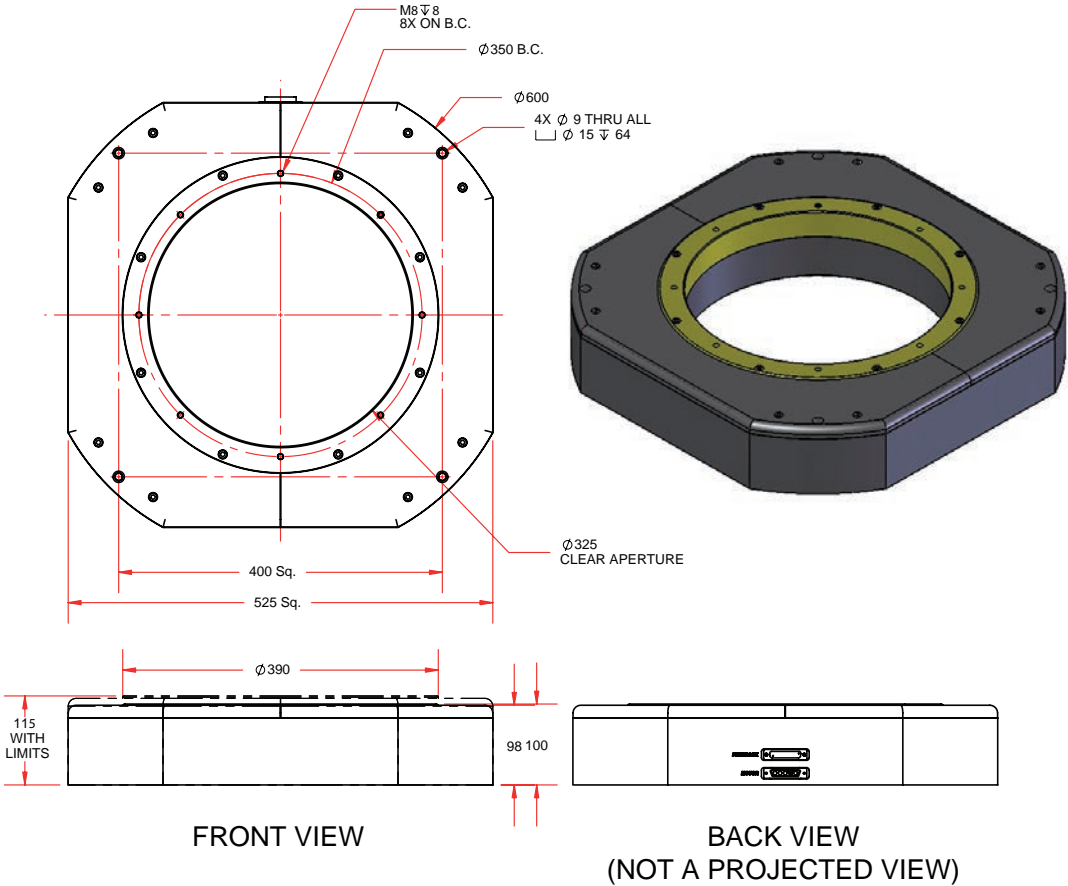


BACK VIEW
(NOT A PROJECTED VIEW)



ALAR直驅旋轉平台在相同負載下，可達到300 rpm連續轉速，具有超過渦桿驅動平台五倍的速度。

ALAR-325-LP



ANT95-R

機械軸承, 直驅旋轉平台

- 高解析度 (0.01 arc sec)
- 大行程高精度
- 極佳的誤差運動 (Error Motion) 特性
- 極佳的定位穩定性 (In position stability)
- 可整合成多軸架構
- 高動態性能

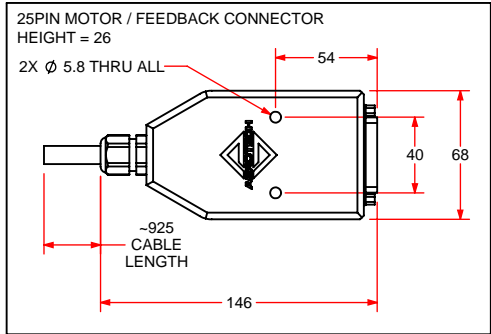
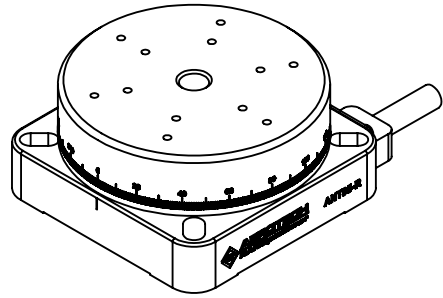
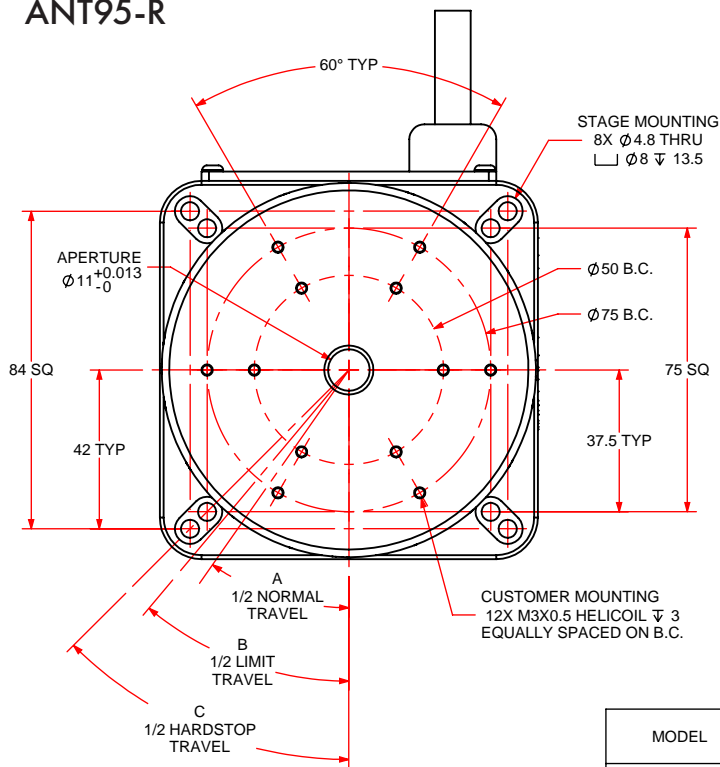
ANT95-R 與ANT95-R-PLUS直驅旋轉平台為 Aerotech奈米定位科技系列產品線之一。此旋轉平台具有無可取代的定位穩定性 (0.005 arc sec), 與低於0.01 arc-sec 之最小步徑量, 並提供兩種定位精度等級。ANT95-R 系列可輕易的與Aerotech ANT系列線性位移平台整合, 將這些平台整合後將提供高精度, 穩定性, 與極小步徑性能提供奈米尺寸之裝置生產或檢測應用。

Mechanical Specifications		ANT95-20-R	ANT95-20-R-PLUS	ANT95-180-R	ANT95-180-R-PLUS	ANT95-360-R	ANT95-360-R-PLUS
Rotation Angle		20°	20°	180°	180°	±360° Continuous	±360° Continuous
Accuracy ⁽¹⁾		10 arc sec	3 arc sec	10 arc sec	3 arc sec	10 arc sec	3 arc sec
Resolution		0.01 arc sec	0.01 arc sec	0.01 arc sec	0.01 arc sec	0.01 arc sec	0.01 arc sec
Repeatability (Bi-Directional) ⁽¹⁾		1.5 arc sec	1.5 arc sec	1.5 arc sec	1.5 arc sec	1.5 arc sec	1.5 arc sec
Repeatability (Uni-Directional)		0.5 arc sec	0.5 arc sec	0.5 arc sec	0.5 arc sec	0.5 arc sec	0.5 arc sec
Tilt Error Motion	Synchronous	NA	NA	NA	NA	10 arc sec	10 arc sec
	Asynchronous	NA	NA	NA	NA	3 arc sec	3 arc sec
Axial Error Motion ⁽¹⁾	Synchronous	NA	NA	NA	NA	2 μm	2 μm
	Asynchronous	NA	NA	NA	NA	0.5 μm	0.5 μm
Radial Error Motion ⁽¹⁾	Synchronous	NA	NA	NA	NA	3 μm	3 μm
	Asynchronous	NA	NA	NA	NA	1 μm	1 μm
Maximum Speed		20 rpm	20 rpm	20 rpm	20 rpm	200 rpm	200 rpm
Maximum Acceleration		400 rad/s ²	400 rad/s ²	400 rad/s ²	400 rad/s ²	400 rad/s ²	400 rad/s ²
In-Position Stability ⁽²⁾		0.005 arc sec	0.005 arc sec	0.005 arc sec	0.005 arc sec	0.005 arc sec	0.005 arc sec
Aperture		11 mm (0.433 in)	11 mm (0.433 in)	11 mm (0.433 in)	11 mm (0.433 in)	11 mm (0.433 in)	11 mm (0.433 in)
Maximum Torque (Continuous)		0.2 Nm	0.2 Nm	0.2 Nm	0.2 Nm	0.2 Nm	0.2 Nm
Load Capacity ⁽³⁾	Axial	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)
	Radial	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)
	Moment	2 Nm	2 Nm	2 Nm	2 Nm	2 Nm	2 Nm
Rotor Inertia (Unloaded)		0.00065 kg-m ²	0.00065 kg-m ²	0.00066 kg-m ²	0.00066 kg-m ²	0.00069 kg-m ²	0.00069 kg-m ²
Stage Mass		1.2 kg (2.6 lb)	1.2 kg (2.6 lb)	1.2 kg (2.6 lb)	1.2 kg (2.6 lb)	1.2 kg (2.6 lb)	1.2 kg (2.6 lb)
Material		Aluminum Body/Black Hardcoat Finish					
MTBF (Mean Time Between Failure)		30,000 Hours					

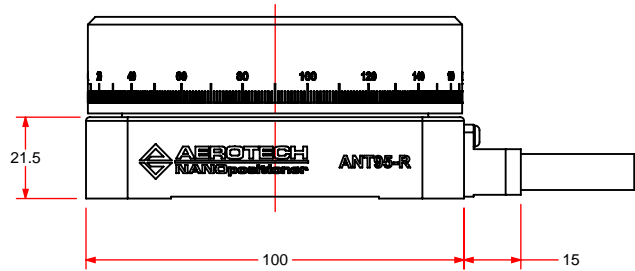
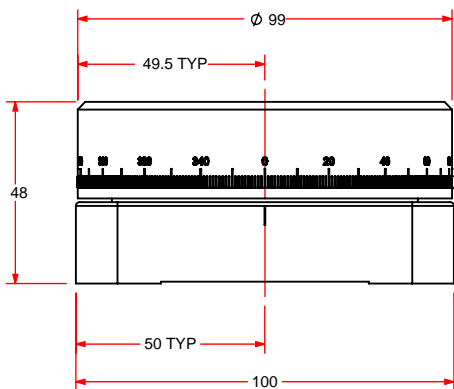
Notes:

1. Certified with each stage. Requires the use of an Aerotech controller.
 2. In-Position Jitter listing is 3 sigma value.
 3. Axis orientation for on-axis loading is listed.
- Specifications are per axis, measured 25 mm above the tabletop. Consult factory for multi-axis or non-standard applications.
 - All error motion specifications are measured at 60 rpm.
 - For high speed operation, customer payload must be balanced to G1.0 per ISO 1940.

ANT95-R



MODEL	TRAVEL [DEGREES]		
	A	B	C
ANT95-20-R	10	15	27
ANT95-180-R	90	95	107
ANT95-360-R	360 CONT.	-	-



ANT95-R 不須要週
期性保養，保證數
年以上的正常運作



ANT130-R

機械軸承, 直驅旋轉平台

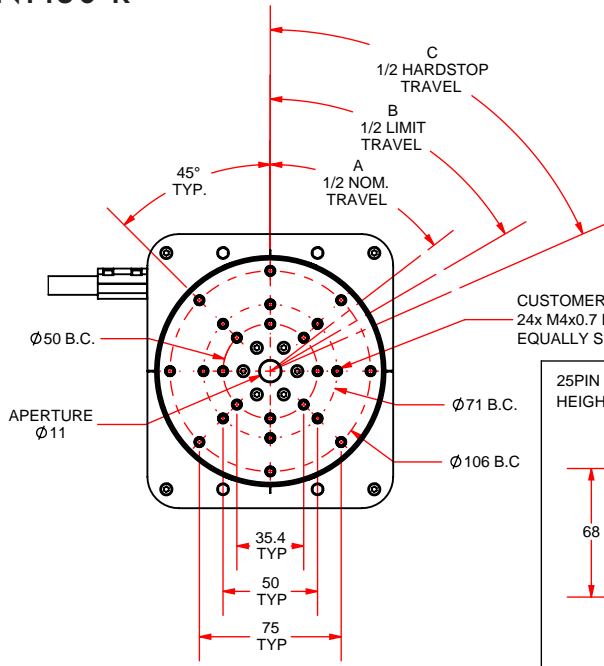
- 高解析度 (0.01 arc sec)
- 大行程高精度
- 極佳的誤差運動 (Error Motion) 特性
- 極佳的定位穩定性 (In position stability)
- 可整合成多軸架構
- 高動態性能

ANT130-R 與ANT130-R-PLUS直驅旋轉平台為 Aerotech奈米定位科技系列產品線之一。此旋轉平台具有無可取代的定位穩定性(0.005 arc sec), 與低於0.01 arc-sec 之最小步徑量, 並提供兩種定位精度等級。ANT130-R是基於24/7的生產環境所設計, 不像其他的旋轉位移裝置, ANT130-R不須要週期性保養, 保證數年以上的正常運作。

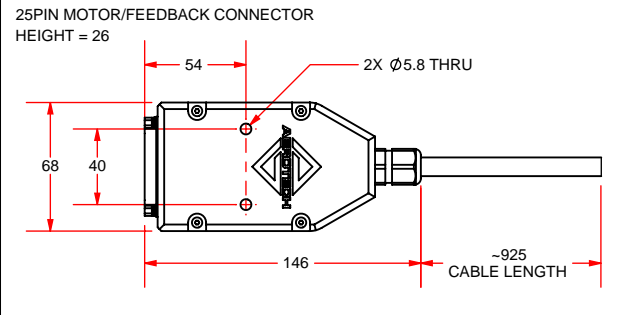
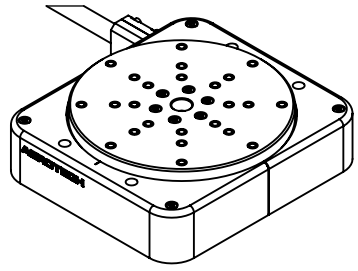
Mechanical Specifications	ANT130-20-R	ANT130-20-R-PLUS	ANT130-180-R	ANT130-180-R-PLUS	ANT130-360-R	ANT130-360-R-PLUS
Rotation Angle	20°	20°	180°	180°	±360° Continuous	±360° Continuous
Accuracy ⁽¹⁾	10 arc sec	3 arc sec	10 arc sec	3 arc sec	10 arc sec	3 arc sec
Resolution	0.01 arc sec	0.01 arc sec	0.01 arc sec	0.01 arc sec	0.01 arc sec	0.01 arc sec
Repeatability (Bi-Directional) ⁽¹⁾	1.5 arc sec	1.5 arc sec	1.5 arc sec	1.5 arc sec	1.5 arc sec	1.5 arc sec
Repeatability (Uni-Directional)	0.5 arc sec	0.5 arc sec	0.5 arc sec	0.5 arc sec	0.5 arc sec	0.5 arc sec
Tilt Error Motion	Synchronous	NA	NA	NA	10 arc sec	10 arc sec
	Asynchronous	NA	NA	NA	3 arc sec	3 arc sec
Axial Error Motion ⁽¹⁾	Synchronous	NA	NA	NA	2 µm	2 µm
	Asynchronous	NA	NA	NA	0.5 µm	0.5 µm
Radial Error Motion ⁽¹⁾	Synchronous	NA	NA	NA	3 µm	3 µm
	Asynchronous	NA	NA	NA	1 µm	1 µm
Maximum Speed	20 rpm	20 rpm	20 rpm	20 rpm	200 rpm	200 rpm
Maximum Acceleration	400 rad/s ²	400 rad/s ²	400 rad/s ²	400 rad/s ²	400 rad/s ²	400 rad/s ²
In-Position Stability ⁽²⁾	0.005 arc sec	0.005 arc sec	0.005 arc sec	0.005 arc sec	0.005 arc sec	0.005 arc sec
Aperture	11 mm	11 mm	11 mm	11 mm	11 mm	11 mm
Maximum Torque (Continuous)	0.2 Nm	0.2 Nm	0.2 Nm	0.2 Nm	0.2 Nm	0.2 Nm
Load Capacity ⁽³⁾	Axial	3.0 kg (6.6 lb)	3.0 kg (6.6 lb)	3.0 kg (6.6 lb)	3.0 kg (6.6 lb)	3.0 kg (6.6 lb)
	Radial	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)	2.0 kg (4.4 lb)
	Moment	3 Nm	3 Nm	3 Nm	3 Nm	3 Nm
Rotor Inertia (Unloaded)	0.001 kg-m ²	0.001 kg-m ²	0.001 kg-m ²	0.001 kg-m ²	0.0016 kg-m ²	0.0016 kg-m ²
Stage Mass	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)	1.7 kg (3.74 lb)	1.7 kg (3.74 lb)
Material	Aluminum Body/Black Hardcoat Finish					
MTBF (Mean Time Between Failure)	30,000 Hours					

- Notes:
1. Certified with each stage. Requires the use of an Aerotech controller.
 2. In-Position Jitter listing is 3 sigma value.
 3. Axis orientation for on-axis loading is listed.
- Specifications are per axis, measured 25 mm above the tabletop. Consult factory for multi-axis or non-standard applications.
 - All error motion specifications are measured at 60 rpm.
 - For high speed operation, customer payload must be balanced to G1.0 per ISO 1940.

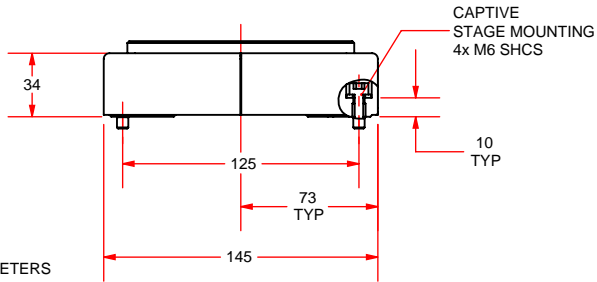
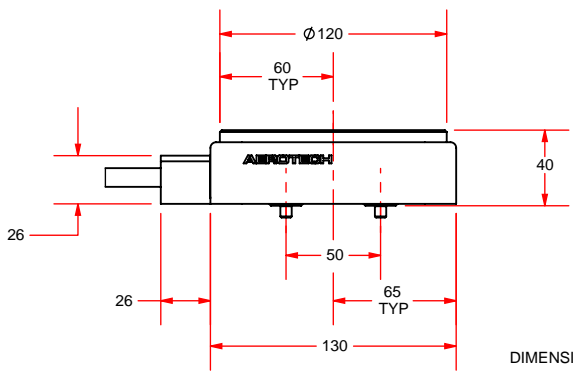
ANT130-R



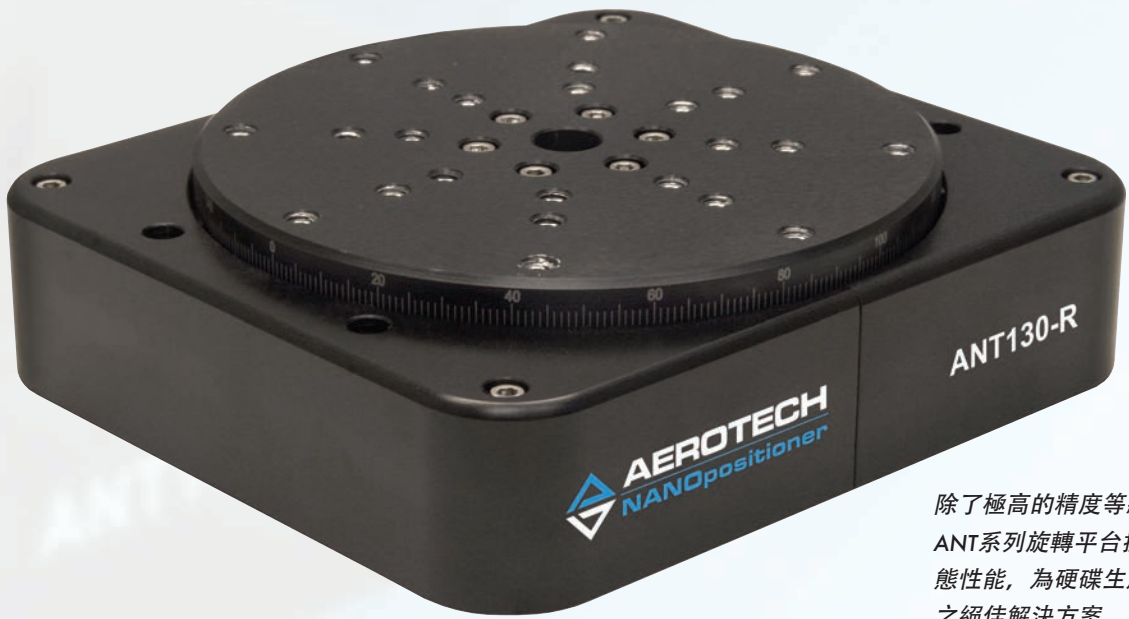
CUSTOMER MOUNTING
24x M4x0.7 HELICOIL ∇ 4.0
EQUALLY SPACED ON B.C.



MODEL	TRAVEL (DEGREES)		
	A	B	C
ANT130-020-R	10	15	37
ANT130-180-R	90	95	117
ANT130-360-R	360 CONT.	-	-



DIMENSIONS: MILLIMETERS



除了極高的精度等級之外，ANT系列旋轉平台提供高動態性能，為硬碟生產與測試之絕佳解決方案

ASRT

機械軸承, 直驅旋轉平台

- IP66: 完全密封, 防止粉塵與水柱由任何方向侵入
- 直驅馬達提供高速高精度之位移, 無齒輪背隙問題
- 低摩擦係數之密封將轉向時產生的滯後 (hysteresis) 現象將到最低, 提供精密定位
- 無限或有限行程
- 軸向負載最高至 175 kg
- 傑出定位精度及重複精度
- 三種不同尺寸之中空孔徑:
30 mm, 80 mm, 130 mm
- 軸心開口 (Shaft aperture) 選項提供電, 氣, 與流體通過
- 100-200 rpm 連續旋轉速度

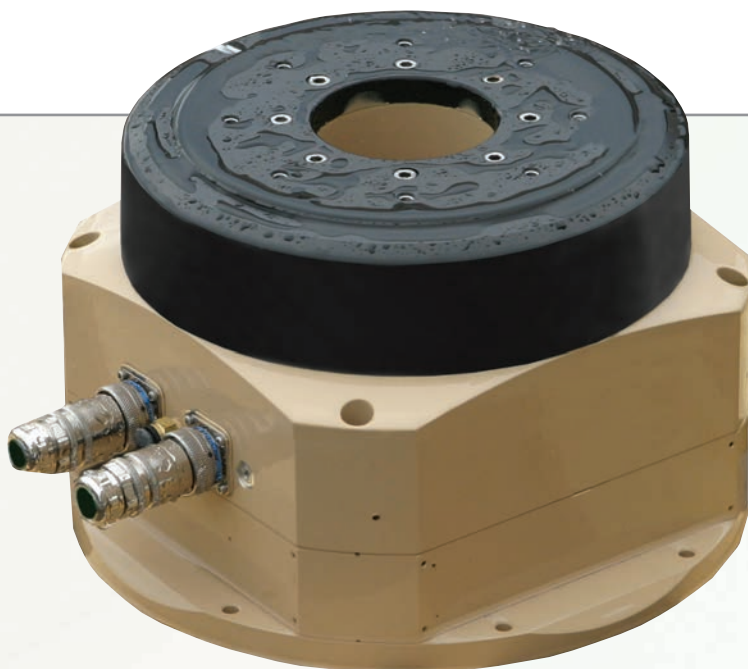
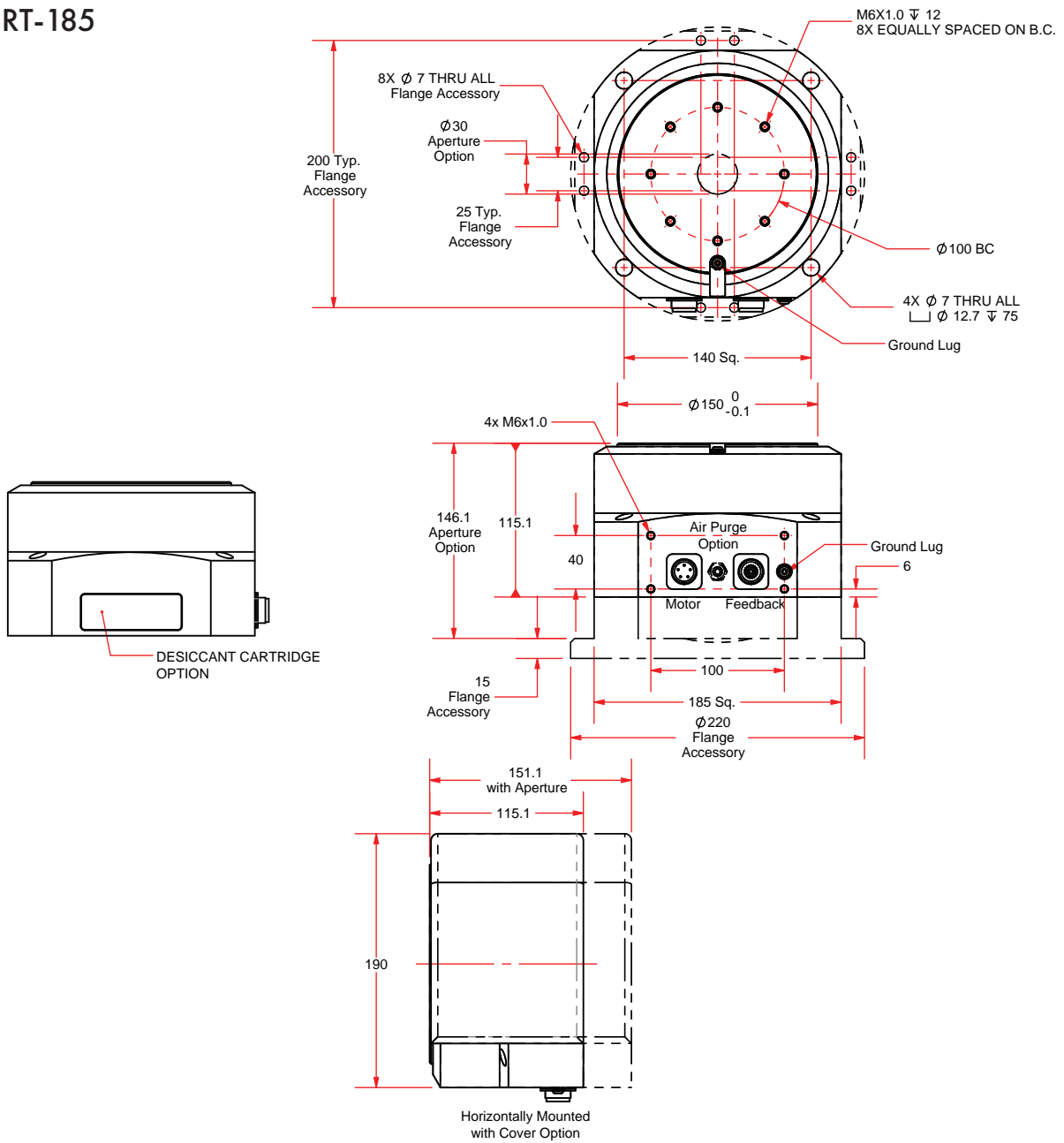
ASRT密封旋轉平台提供惡劣環境下之精密角度定位, 適用於具有髒污及液體的環境下。此旋轉平台可以防止粉塵與水注由任何方向侵入。ASRT平台可以使用在距有切削液存在之環境下, 可應用於機械加工應用或嚴苛環境的感測器定位。ASRT在產品的環境測試或者許多追蹤應用特別適用。

Mechanical Specifications		ASRT-185	ASRT-245	ASRT-300
Travel		360° Continuous		
Accuracy ⁽¹⁾ (-O)	Standard	20 arc sec		
	HALAR	2 arc sec		
Resolution (-O)		0.036 arc sec	0.027 arc sec	0.018 arc sec
Bi-Directional Repeatability ⁽¹⁾ (-O)		1 arc sec		
Accuracy ⁽¹⁾ (-M)	Standard	50 arc sec	45 arc sec	N/A
	HALAR	15 arc sec	15 arc sec	N/A
Resolution (-M)		0.63 arc sec	0.54 arc sec	N/A
Bi-Directional Repeatability ⁽¹⁾ (-M)		10 arc sec		
Tilt Error Motion		5 arc sec		
Maximum Speed		200 rpm	150 rpm	100 rpm
Maximum Acceleration		950 rad/s/s	900 rad/s/s	650 rad/s/s
Aperture		30 mm	80 mm	130 mm
Maximum Torque (Peak)		9.6 Nm	35.5 Nm	46.7 Nm
Maximum Torque (Continuous)		2.1 Nm	6.6 Nm	9.7 Nm
Load Capacity	Axial	30 kg	140 kg	175 kg
	Radial	25 kg	125 kg	150 kg
	Moment	175 Nm	425 Nm	500 Nm
Rotor Inertia (Unloaded)	Base Model	0.0096 kg-m ²	0.026 kg-m ²	0.066 kg-m ²
	Aperture Opt.	0.013 kg-m ²	0.039 kg-m ²	0.079 kg-m ²
Stage Mass	Base Model	10.3 kg	18.8 kg	25.0 kg
	Aperture Opt.	12.6 kg	21.9 kg	29.0 kg
Material		Polymer-Painted Aluminum/Aluminum Hardcoat		
MTBF (Mean Time Between Failure) ⁽²⁾		10,000 Hours		

Note:

1. Certified with each stage.
2. Application dependent. Dry environments between 0° and 70°C up to 10,000 hours.
3. Long-term exposure to temperature cycles and wet environments will require periodic maintenance.

ASRT-185



ASRT在產品的環境測試或者許多追蹤應用特別適用

ARMS

機械軸承, 直驅旋轉平台

- 設計於產生極精密之運動曲線
- 具有0.0001% 全行程 360°之速度穩定性
- 0.02 arc sec定位解析度
- 負載最高至 230 kg
- 整合滑環 (Slip ring) 及旋轉接頭 (rotary unions)
- 直驅無刷馬達提供高速及大扭力

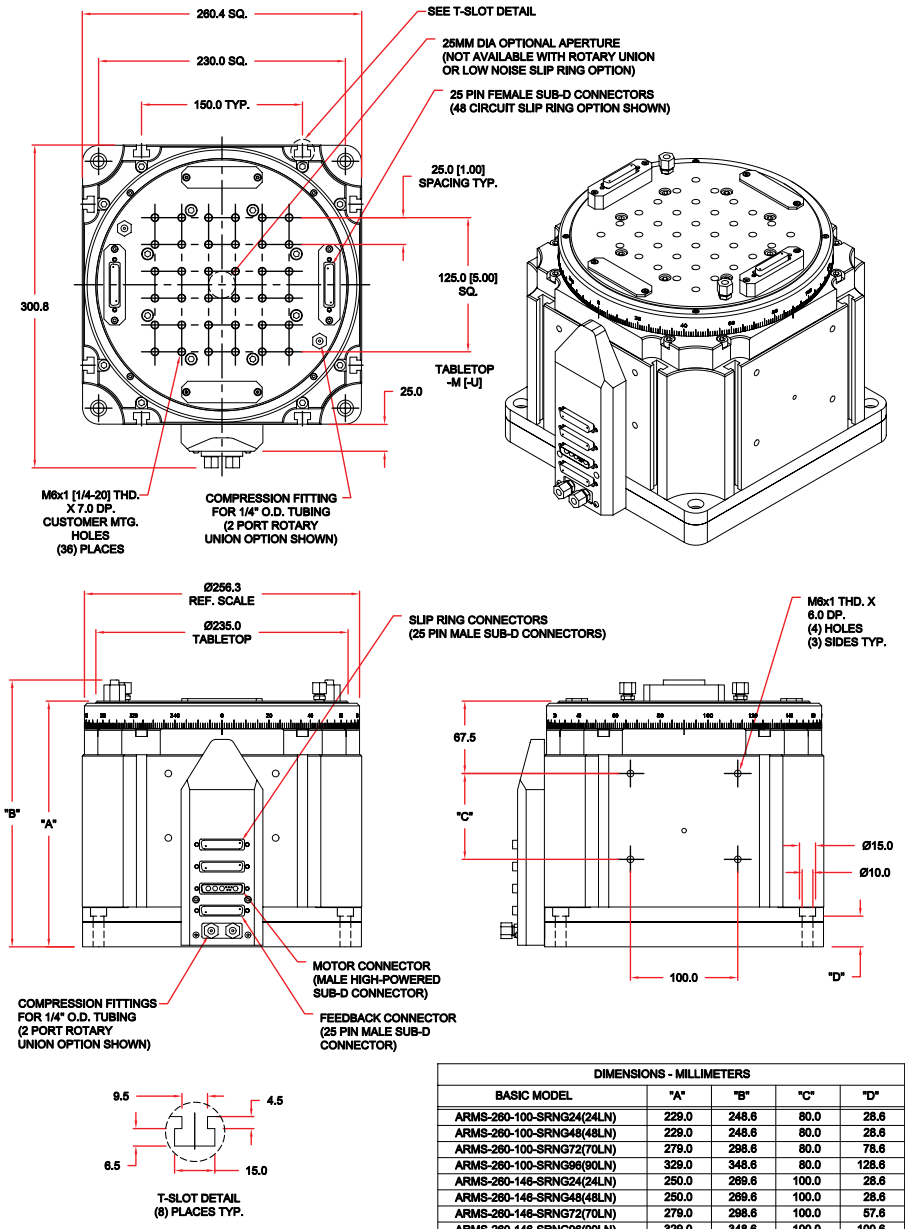
Aerotech的ARMS系列直驅旋轉運動模擬器 (motion simulators) 提供傑出的速度控制, 加速度控制, 與定位控制提供測試慣性元件或系統如MEMS, 角度規(gyroscopes), 慣性感測器, 航太設備, 加速度計 (accelerometers) 等。與 Aerotech先進運動控制器後, ARMS之解析度可以高達0.02 arc second, 定位精度達 ±2.5 arc seconds, 重複精度達 ±0.5 arc second。ARMS具有速度解析度達0.002 deg/s與速度穩定性達0.0001%。低慣量與無背隙之ARMS為需要頻繁轉換方向應用之最佳解決方案。

ARMS Series		ARMS-150-12	ARMS-150-37	ARMS-200-56	ARMS-200-80	ARMS-260-100	ARMS-260-146
Width		146 mm		196 mm		260 mm	
Height ⁽¹⁾		183 mm	246 mm	224 mm	249 mm	229 mm	250 mm
Aperture ⁽²⁾		8 mm				25 mm	
Total Travel		±360° Continuous					
Motor		S-130-39-A	S-130-102-A	S-180-69-A	S-180-94-A	S-240-63-A	S-240-83-A
Continuous Current, Stall	A _{pk}	3.8	3.1	5.1	4.9	5.9	5.8
	A _{rms}	2.7	2.2	3.6	3.5	4.2	4.1
Bus Voltage		Up to 320 VDC					
Peak Torque		11.7 N-m	37.4 N-m	55.6 N-m	80.0 N-m	100 N-m	146 N-m
Continuous Torque		2.8 N-m	9.2 N-m	13.7 N-m	19.9 N-m	24.9 N-m	36.5 N-m
Resolution		0.04-4 arc sec		0.03-3 arc sec		0.02-2 arc sec	
Fundamental Encoder Resolution		16,200 lines/rev		23,600 lines/rev		32,400 lines/rev	
Accuracy ⁽³⁾		±2.5 arc sec					
Repeatability		±0.5 arc sec					
Max Load ⁽⁴⁾	Axial	30 kg		140 kg		230 kg	
Max Load ⁽⁴⁾	Moment	175 N-m		425 N-m		650 N-m	
Wobble		±1 arc sec					
Maximum Rate ⁽⁵⁾		1500°/s					
Minimum Rate ⁽⁶⁾		0.002°/s				0.001°/s	
Rate Resolution ⁽⁶⁾		0.002°/s				0.001°/s	
Rate Stability ⁽⁶⁾	Over 360°	0.0001%					
	Over 10°	0.005%					
	Over 1°	0.05%					
Peak Acceleration ⁽⁷⁾		>20,000°/s ²					
Inertia (unloaded) ⁽⁷⁾		6,600 kg-mm ²	9,700 kg-mm ²	33,600 kg-mm ²	39,800 kg-mm ²	115,200 kg-mm ²	139,000 kg-mm ²
Total Mass ⁽⁷⁾		9 kg	15 kg	22 kg	26 kg	39 kg	44 kg
Servo Bandwidth ⁽⁸⁾		>70 Hz (-3 dB)					
Material		Aluminum					
Stage Finish		Black Anodize					
Tabletop Finish		Hard Coating (62 Rockwell Hardness)					

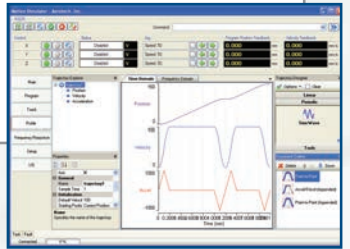
Notes:

1. Height may vary with certain slip ring and rotary union options. See product dimensional drawings for more details.
2. Aperture not available with all slip ring and rotary union options. See ordering information for more details.
3. Certified with each stage. Requires the use of an Aerotech controller.
4. Maximum loads are mutually exclusive.
5. Maximum rate is based on stage capability. Actual rate may depend on encoder resolution, load, amplifier bus voltage and motor. See the S-series rotary motor for more information.
6. Minimum rate, rate resolution and rate accuracy are based on stage capability. Actual rate, resolution and accuracy may depend on encoder resolution.
7. Peak acceleration, inertia and total mass based on unloaded stage with standard diameter tabletop.

ARMS-260



DIMENSIONS - MILLIMETERS				
BASIC MODEL	"A"	"B"	"C"	"D"
ARMS-260-100-SRNG24(24LN)	229.0	248.6	80.0	26.6
ARMS-260-100-SRNG48(48LN)	229.0	248.6	80.0	26.6
ARMS-260-100-SRNG72(70LN)	279.0	298.6	80.0	76.6
ARMS-260-100-SRNG96(90LN)	329.0	348.6	80.0	126.6
ARMS-260-146-SRNG24(24LN)	250.0	269.6	100.0	26.6
ARMS-260-146-SRNG48(48LN)	250.0	269.6	100.0	26.6
ARMS-260-146-SRNG72(70LN)	279.0	298.6	100.0	57.6
ARMS-260-146-SRNG96(90LN)	329.0	348.6	100.0	100.6



低慣量與無背隙之ARMS
為需要頻繁轉換方向應
用之最佳解決方案

AGR

機械軸承, 齒輪傳動旋轉平台

- 提高速度與負載能力
- 革新的渦桿齒輪模組設計 (patent pending) 提供長時間工作下傑出定位精度與重複精度
- 大中空孔徑應用於廣泛應用
- 連續360°旋轉定位
- 可選配直接耦合圓光柵
- 可使用於溫度變化較大之環境下

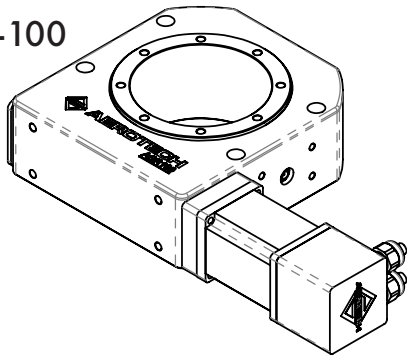
AGR系列馬達驅動旋轉平台大幅提高傳統渦桿驅動旋轉平台之性能, 包含速度, 負載能力, 長時間定位性能等。AGR系列強調使用於各種不同應用如實驗室或工業之泛用角度定位。獨特的預載方式避免磨耗問題 (changing wear characteristics), 提供較長的平台壽命並維持平台性能, 使平台可以在廣泛溫度條件下工作。

Mechanical Specifications		AGR50	AGR75	AGR100	AGR150	AGR200
Travel		360° (Limited Travel Versions Available)				
Accuracy ⁽¹⁾	Standard	180 arc sec		120 arc sec		
	Direct Encoder	20 arc sec				
Repeatability (Uni-Directional) ⁽¹⁾	Standard	10 arc sec				
	Direct Encoder	5 arc sec				
Repeatability (Bi-Directional) ⁽¹⁾	Standard	45 arc sec				
	Direct Encoder	8 arc sec				
Tilt Error Motion		10 arc sec				
Axial Error Motion		5 µm				
Radial Error Motion		10 µm				
Gear Ratio		51:1	67:1	85:1	117:1	126:1
Maximum Speed ⁽²⁾	BM/BMS	180°/s				120°/s
	SM	60°/s		40°/s		
Maximum Acceleration ⁽³⁾		720°/s ²				480°/s ²
Aperture	mm	50 mm	75 mm	100 mm	150 mm	200 mm
Load Capacity	Axial	40 kg	100 kg	200 kg	300 kg	425 kg
	Radial	20 kg	50 kg	100 kg	125 kg	200 kg
	Moment	See Moment Load Curves				
Maximum Torque Load to Stage Shaft		2.5 N·m	3.5 N·m	12 N·m	20 N·m	80 N·m
Rotor Inertia (Unloaded)		0.00052 kg·m ²	0.0013 kg·m ²	0.0035 kg·m ²	0.011 kg·m ²	0.076 kg·m ²
Stage Mass (No Motor)	Standard	1.9 kg	2.4 kg	4.5 kg	6.1 kg	18.6 kg
	Direct Encoder	2.5 kg	3.1 kg	5.6 kg	7.6 kg	21.7 kg
Material		Aluminum				

Note:

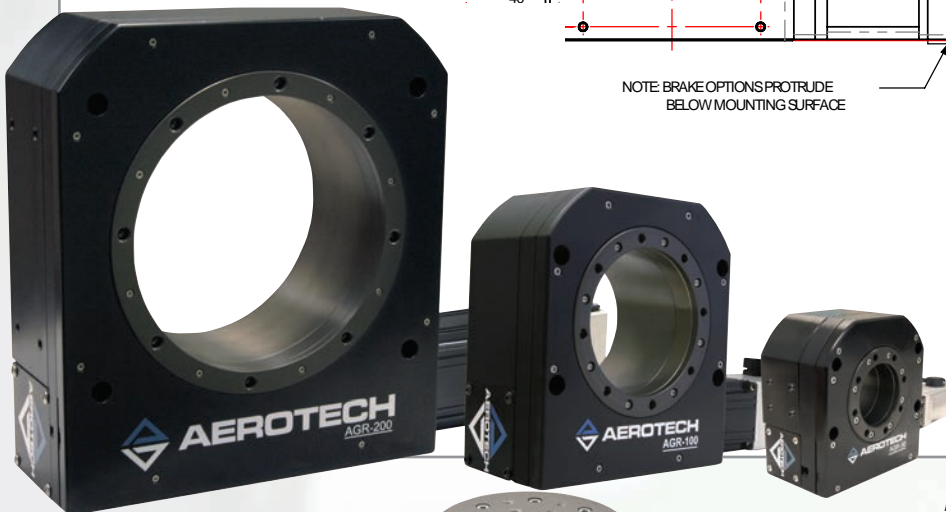
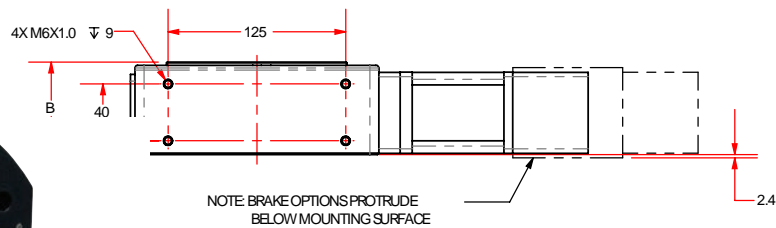
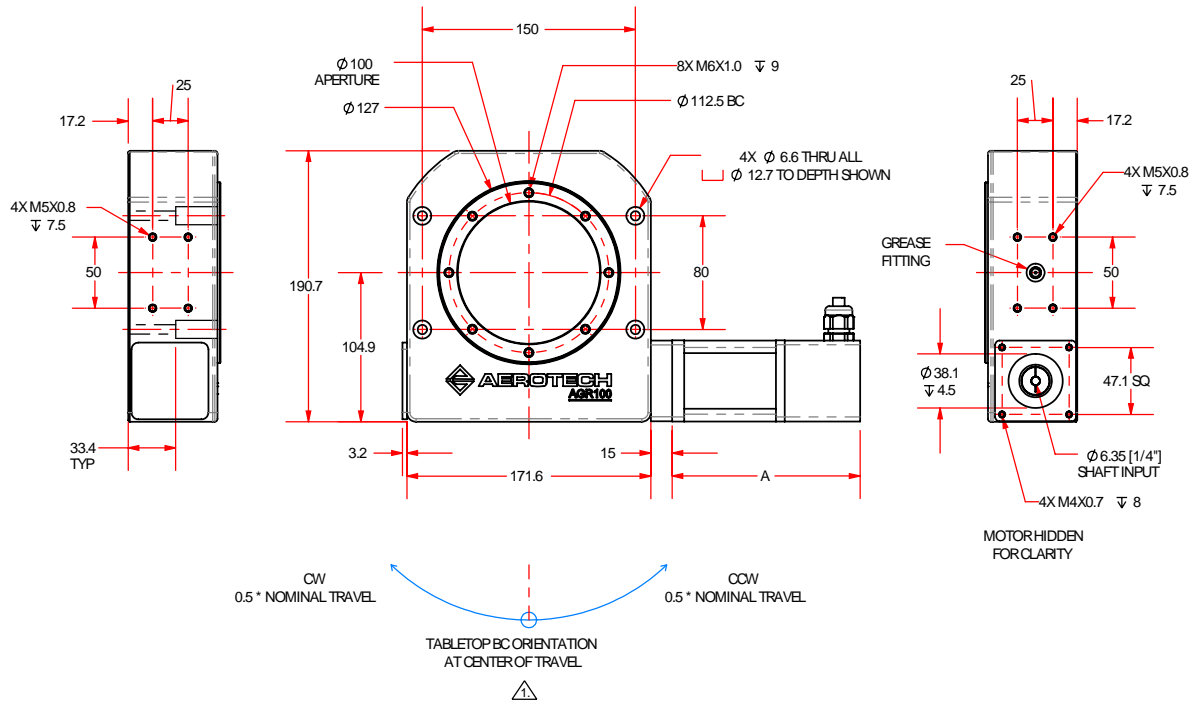
1. Certified with each stage.
2. Maximum speed is load dependent. Contact an Aerotech Application Engineer if imbalanced loads are present.
3. Unloaded acceleration.
4. On-axis loading is listed.
5. Specifications are for single-axis systems measured 25 mm above the tabletop. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.

AGR-100



MOTOR	LENGTH "A"
BM75	132.3
BM75-BRAKE	209.5
BMS60	132.3
BMS60-BRAKE	209.5
50SMB2-HM	84.3

OPTION	HEIGHT "B"
DEFAULT	65
SEAL	78
ENCODER	81
SEAL + ENCODER	94



除了大口徑以外，AGR系列強調需要使用通孔之應用如安裝鏡組等。

先進系統控制

GSE: 地面支援設備 (Ground Support Equipment)

- 節省時間與經費
 - Windows®-based 運動控制器提供簡潔, 容易使用之 LabVIEW®, .NET, C, C#, AeroBasic™ 軟體
 - 位置同步觸發 (Position Synchronized Output) 可觸發雷射, 渦電流, 或超音波感測器控制
 - 簡易設定無刷, 有刷或步徑馬達控制
 - 支援解角器, 感應同步器 (inductosyn), 增量式與絕對式編碼器
 - 擷取實驗中所有的運動曲線以進行品質控制
 - 內建先進頻率響應分析軟體
- 使用 .NET, C#, C, 與 LabVIEW® 函式庫或範例程式開發你的人機介面與其他程式
- 簡易設定的馬達參數計算與自動調校軟體
 - 使用高階的人機介面開發你的運動程式
 - 功能最強大的診斷軟體
 - 可靈活設定的 2D 誤差作圖

Automation 3200



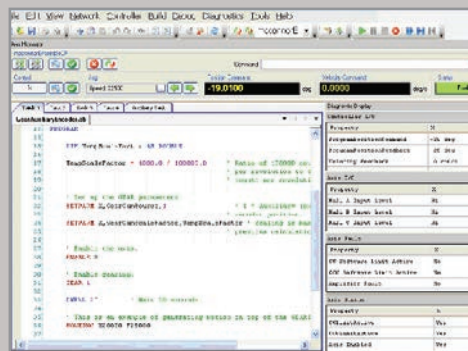
- 最高至 32 組任務 (Task)
- PC-based
- RS-274 G-code
- 先進控制技術應用於最嚴苛應用
- 1 至 32 軸同步運動
- 雷射打標之振鏡控制
- 高度整合之雷射控制功能
- 加強既有系統性能之翻新模組
- 類比與數位 I/O 控制

Ensemble

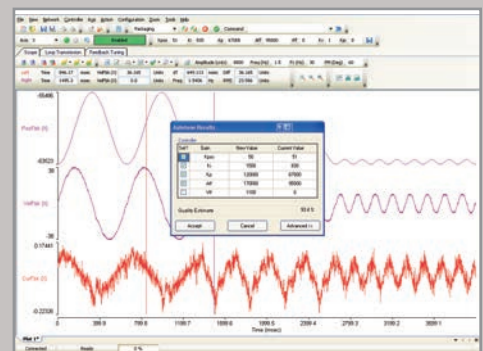


- 最高至四組任務 (Task)
- 1-10 軸之獨立控制器
- 靈活度高, 低成本, 同步運動
- PWM 或線性驅動器 (10-150 A 峰值電流輸出)

整合的開發環境



Programming Interface (程式設計界面)



Autotune (自動調校軟體)

線性與旋轉伺服或轉矩馬達



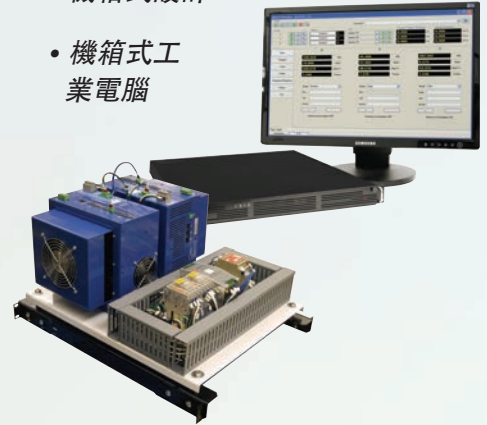
通訊協定

- Ethernet/IP™
- Modbus®/TCP
- DeviceNET
- Ethernet TCP/IP
- USB
- RS-232
- GPIB



Accessories

- 線性驅動器
- 緊急開關
- 機箱式設計
- 機箱式工業電腦

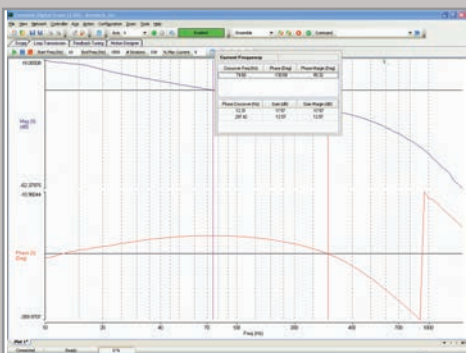


- 無刷, 有刷或步徑馬達控制
- 機箱式或嵌入式
- .NET, C++, or LabVIEW®
- GPIB, Ethernet, USB

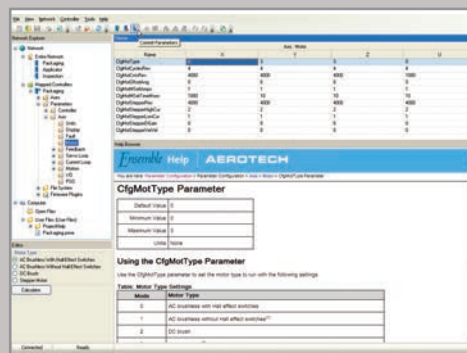
Soloist



- 精簡, 低成本高效能之單軸控制器
- 獨立控制器 (包含控制器與驅動器)
- PWM 或線性驅動器 (10-150 A 峰值電流輸出)
- .NET, C#, LabVIEW®
- Ethernet, USB



Loop Transmission (頻率響應分析軟體)



Parameter Editor (參數設定軟體)

簡介



總部 • Pittsburgh, PA • USA



Aerotech 英國分公司



Aerotech 德國分公司



Aerotech 日本分公司

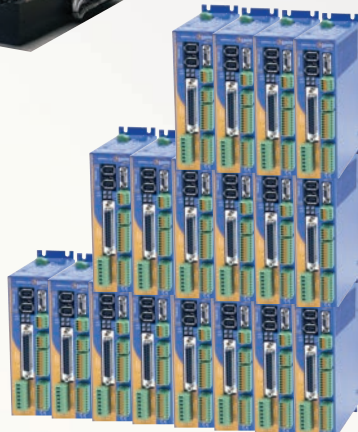


Aerotech 中國分公司

大量生產



超過100,000 軸於世界各地被廣泛應用



全球的業務與客服支持



全球的系統起始服務與到場陪訓

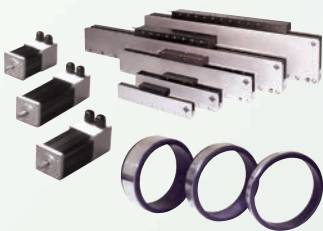


完善的培訓設施

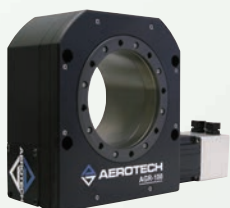


技術領先的零組件

最高性能的無刷
線性與旋轉馬達



AGR旋轉平台



PRO系列線
性馬達平台



Ndrive



A3200



Npaq

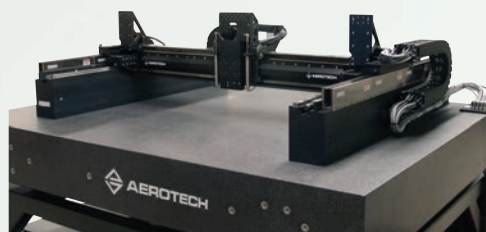
獲獎無數之Automation 3200 1-32軸運動，視覺，
PLC，機械手臂，與I/O控制

高性能模組

XYAB次系統提供高動態
定位性能，應用於雷射
鑽孔與微加工應用

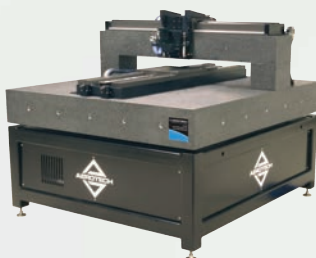


LaserTurn 5 高速圓
柱材料加工平台



高產能線性馬達龍門系統

市場上最高性能之次系統



高整合度之次系統包含，底座，
顯示器，與相關配電



客製化真空與無塵室條件之系統



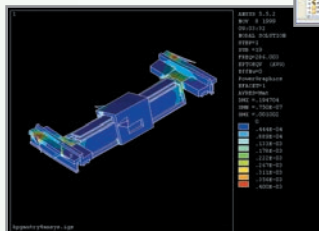
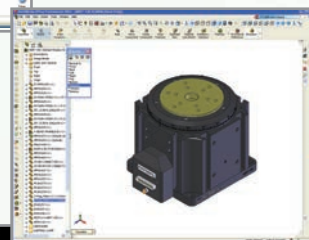
量產化，使用於平
面顯示器或半導體
應用之大尺寸空氣
軸承運動系統

廣泛的技術支持服務



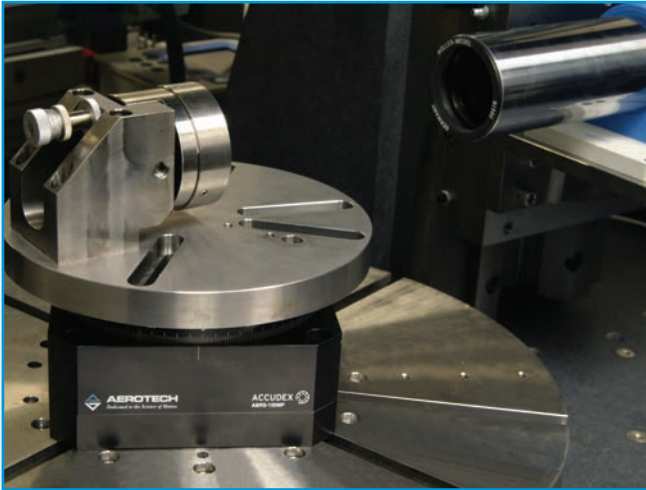
客製化軟體服務

3D模型加速與更
精準的系統設計



先進分析技術供最
佳化系統幾何設計

Aerotech 角度校正儀 (Aerotech Rotary Calibrator)



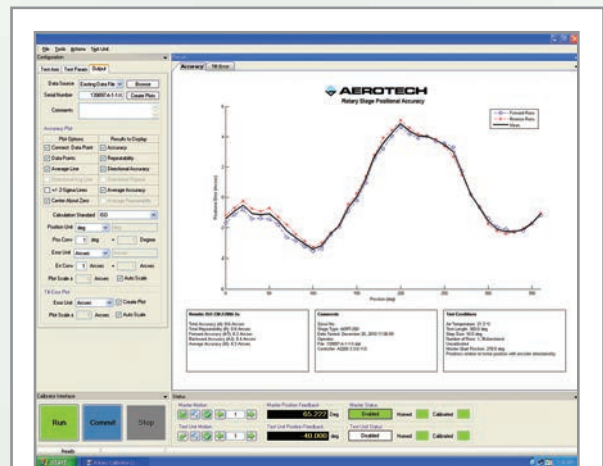
Aerotech 角度校正儀(ARC) 提供了一個校正角度或旋轉平台的新的工業標準。此角度校正儀的核心在於一個大型空氣軸承旋轉平台基準軸 (Master Axis), 其具有奈米等級誤差運動 (error motion) 規格。此高精度空氣軸承由鋼材製造, 設計於符合周圍花崗岩結構之熱膨脹係數。此空氣軸承平台為作為主要的角度產生裝置, 其產生超過360度全行程之0.015 arc-seconds的小角度。

此角度校正儀裝配有為高解析度, 高定位精度之電子準直儀 (autocollimator), 用來量測光學表面的回饋。整套系統由高精度花崗岩結構組成, 並使用被動式防震以隔絕機台底座與地面的震動。客製化機台外罩可隔絕空氣擾動, 高頻率溫度起伏, 與環境光害等。系統電器設施安裝於獨立的客製化配電箱內以隔絕機台的熱與電子雜訊。客製化校正軟體提供使用者簡易的控制角度位移, 量測步驟 (如 Circle enclosure), 與製圖/製表等。

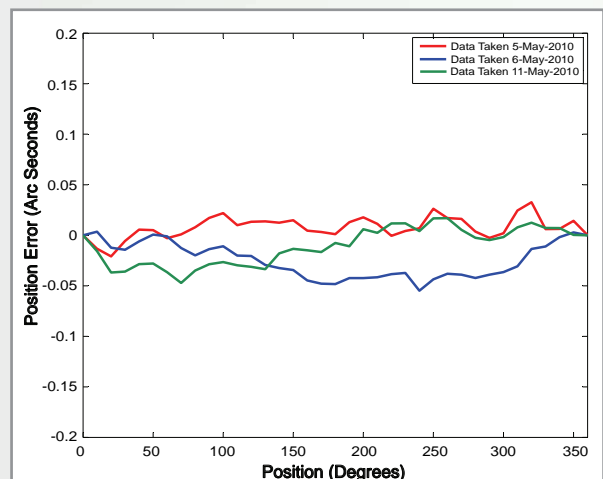


系統規格

- 基準軸定位精度: <0.15 arc-seconds (<727 nano-radians)
- 最小位移量 (min. angle): 0.015 arc-seconds (73 nano-radians)
- 系統數位解析度: 0.0069 arc-seconds (34 nano-radians)
- 角度量測不確定度: <0.2 arc-seconds expanded uncertainty, $k=2$ (<970 nano-radians, $k=2$)¹.



- 客製化軟體供自動進行測試驗證與製表



Aerotech 角度校正儀 (ARC) 基準軸重複精度誤差 - 校正後之重複精度經過數天運作

1. 角度量測不確定度 (uncertainty) 為依照 ANSI/NCSS Z540-2-1997: Guide to the Expression of Uncertainty in Measurement while calibration of a rotary table over 360° with 10° steps using a modified circle closure technique. 實驗室之溫度控制為: 20°C +/- 0.25°C.

得獎產品與相關指標



ANT-130XY榮獲2011年美國“控制工程”雜誌頒發的“工程師精選獎”



ANT-130XY榮獲美國“設計新聞”雜誌2010年“金鼠夾獎”(Golden Mousetrap)



“設計新聞”2009年“金鼠夾最佳產品”獎項評選中，LaserTurn® 1, AGS15000和ANT95-XY榮膺大獎



LaserTurn® 1榮獲2008年美國“控制工程”雜誌頒發的“工程師精選獎”



Ensemble™榮獲“半導體國際”2008年“編輯最佳產品獎”



“設計新聞”2008年“金鼠夾最佳產品”獎項評選中，Nmark™SSAM榮獲大獎



WaferMaxT™榮獲“半導體國際”2007年“編輯最佳產品獎”



WaferMaxZ™榮獲2006年歐亞集成電路工業獎



Automation3200 榮獲“產品設計與開發”2002年50強產品



Automation3200 榮獲美國“設計新聞”雜誌2002年最佳產品提名



Aandrijftechniek 2002年大獎 - FiberMax®



光波NFOEC2002年參與者精選大獎 - FiberMax®



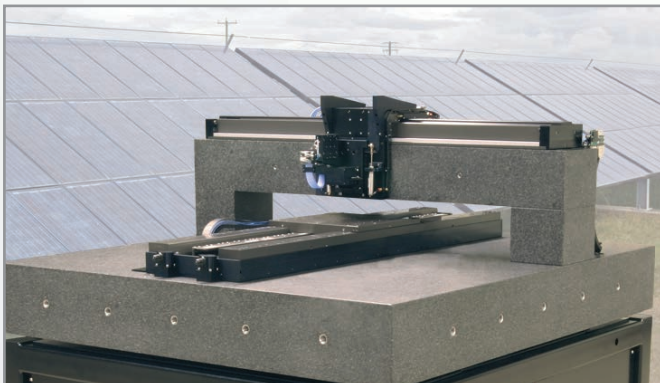
FiberAlign® 130榮獲2001年光波OFC頒發的“參與者精選獎”



“製造技術機械設計卓越獎” - Slides/Ways 1998年和2000於其他市場的技术能力



於其他市場的技術能力



太陽能，燃料電池與替代能源

Aerotech擁有豐富多樣的運動控制產品，具有廣闊的應用範圍，在太陽能(Photovoltaic)，燃料電池和其他替代能源製造與測試平台領域，Aerotech將會是您理想的合作夥伴。我們在世界各地已為這些領域設計製造了許多運動控制系統，我們會持續為您提供更多的創新解決方案。

通用自動化

Aerotech從1970年開始製造生產最高等級的自動化產品，在眾多運動控制產品製造商中，Aerotech產品系列的多樣性是獨一無二的。其中包括奈米定位平台，平面空氣軸承系統，高速龍門系統，線性運動平台，旋轉運動平台，提升運動平台，無刷線性及旋轉伺服馬達和驅動器，單軸及多軸運動控制器，測角儀，陀螺儀/光學支架。Aerotech is Dedicated to the Science of Motion.



控制系統

Aerotech運動控制器，馬達和驅動器可用於我們的定位系統，是全球終端使用者和設備製造商的不二之選。Automation 3200是一款基於軟體並可控制多達32軸的運動控制器，加之Soloist™單軸伺服控制器和Ensemble™多軸獨立式運動控制器，Aerotech可提供多項選擇來滿足您的應用要求。

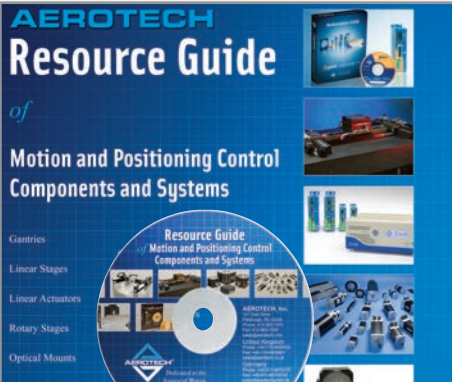
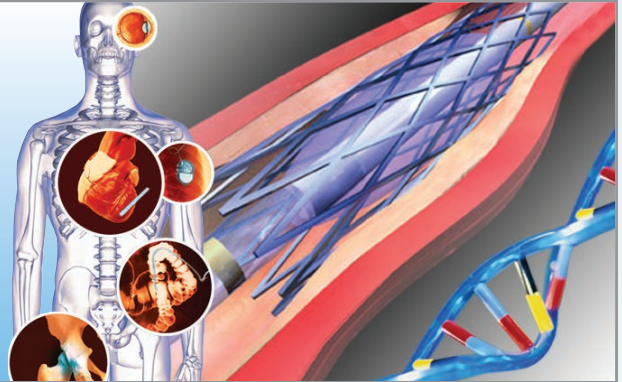
雷射加工

Aerotech在提供用於切割，焊接，打標，蝕刻和微切削加工等雷射加工的運動模組和子系統方面具有豐富的經驗，這些加工製程是市場中諸如太陽能電池製造，太空和醫療設備製造等先進技術的關鍵。



醫療設備製造及生命科學

Aerotech為醫療和生命科學應用製造性能優越的運動系統和模組，包括心導管支架切割，用於心臟起搏器和導尿管的醫療雷射焊接系統，人工晶體和隱形眼鏡製造，DNA順序分析，血液順序分析，觸摸式銑床和鑽床，X射線機，核磁共振掃描機和CAT掃描機。我們會根據您的具體要求定制醫療雷射焊接系統。

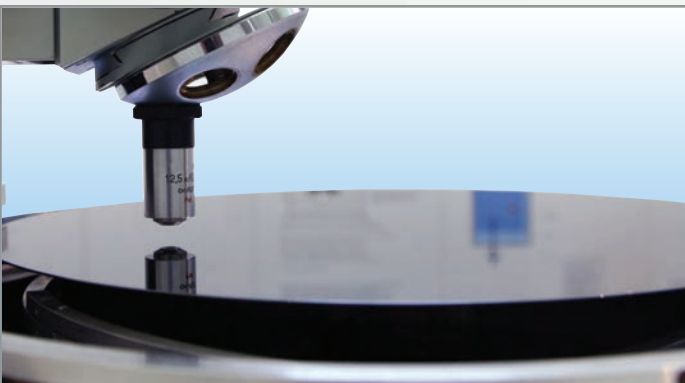
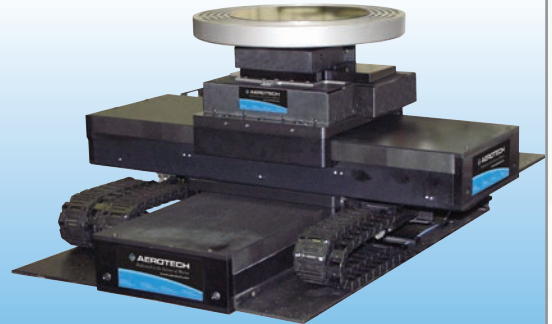


政府及教育研究和開發

Aerotech產品系列為學術及政府研發領域提供廣泛的解決方案。奈米定位產品系列可滿足光纖接頭焊接，微切削加工工作站和奈米切削加工工作站的精度要求。Aerotech的多軸旋轉平台和陀螺儀可滿足國防，衛星和空間科學研究的高精度要求。獨特的應用領域需要獨特的解決方案，Aerotech可為您提供定制系統以滿足您的具體要求。

電子製造與組裝

速度，精度和可靠性是取放設備，錫膏鋼板(Stencil)切割機，印刷電路板封裝和其他電子製造及組裝設備的關鍵要求。Aerotech從1970年就已經超過了用來評判電子製造和組裝設備的最嚴格的標準，並且我們還會採用先進的運動技術，通過應對取放設備，鋼板切割機，印刷電路板封裝的挑戰，繼續提高標準。



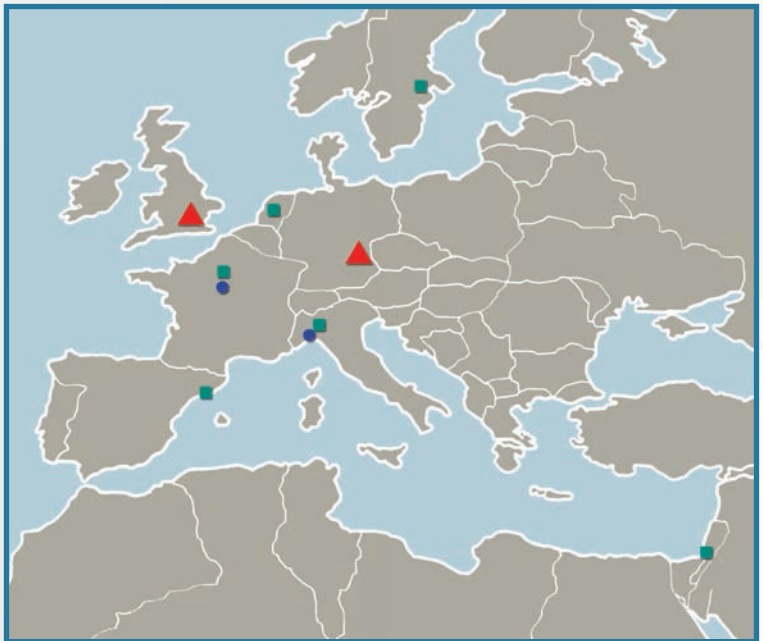
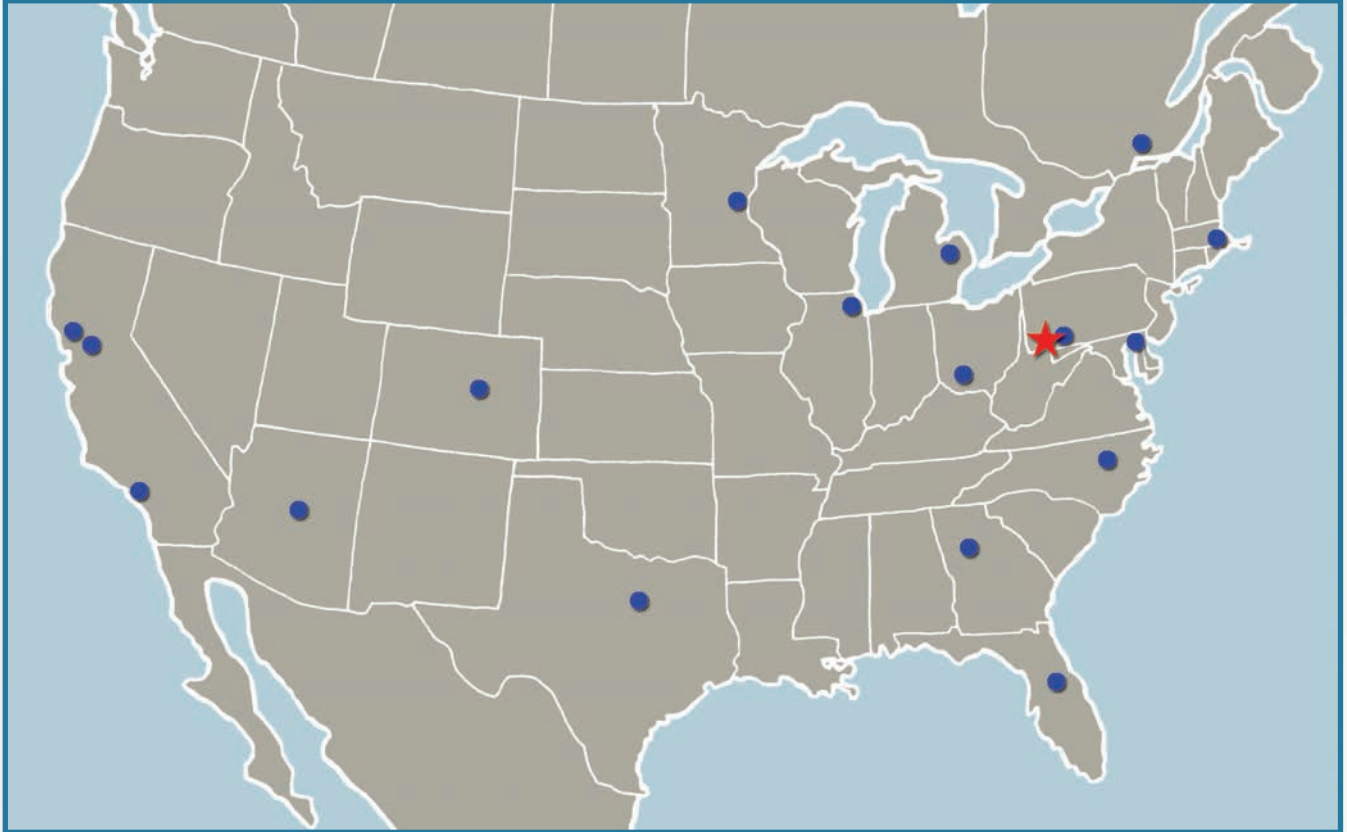
測試和檢驗

Aerotech為CMM，超音波，渦電流，X射線，光學和電子學等產業應用提供測試和檢驗服務。所有的這些應用完全依賴於Aerotech產品獨一無二的定位精度，重複精度和耐用性。光學檢測解決方案包括高階線性馬達驅動定位平台，包含底座，防震腳座，與運動控制器等，以及針對高價格敏感度的模組化系統。



Dedicated to the Science of Motion

Aerotech's 於世界各地之服務據點



★ - Aerotech 總部 ● - 直屬銷售中心 ▲ - Aerotech 子公司 ■ - 代理商

www.aerotech.com

