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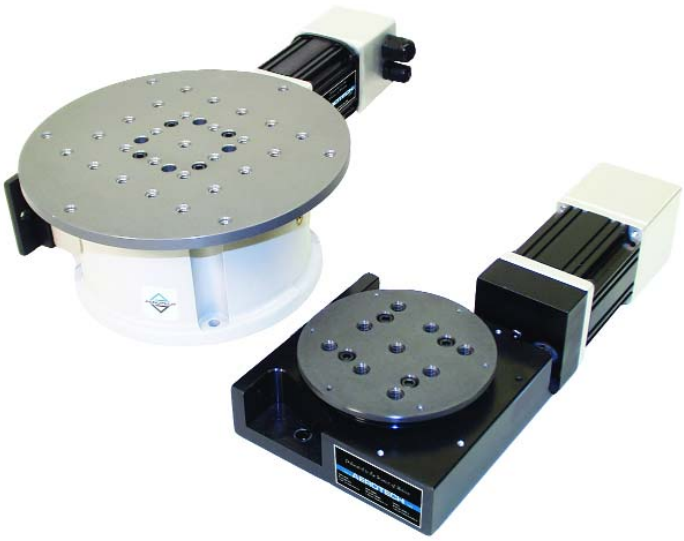
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Find the *Aerotech 310SMB3-HM* at our website: *Click HERE*

ART300 Series

Mechanical-Bearing Rotary Stage

- Continuous 360° rotary positioning
- Precision worm gear drive for outstanding accuracy and repeatability
- High speed and load capacity
- Includes brushless servomotor
- Horizontal or vertical mounting orientation
- Range of gearing options allows optimization of either speed or resolution



The ART300 series of motorized stages provides precision rotational positioning for laboratory and industrial applications alike. This industrial-grade stage has excellent accuracy and resolution, making it the ideal indexer for precision factory automation.

Construction Features

The bases of the ART310 and ART315 stages are fabricated from a special aluminum alloy tooling plate, while the ART320 and ART330 bases are machined castings of the same material. This material offers significant weight savings in multi-axis arrangements and other weight critical applications, while providing high structural stiffness and long-term stability.

Each stage incorporates dual large diameter pre-loaded angular contact bearings that are spaced to provide excellent runout and wobble specifications, as well as good load handling capability. The drive mechanism is a precision gear and matched worm that are pre-loaded to reduce backlash.

Both the ART320 and ART330 are oil-filled to assure long gear life at high continuous table speeds.

All stage tabletops feature Teflon®-impregnated hardcoats, with stainless steel Helicoil inserts to prevent thread wear.

Flexible Options

Options include aperture tabletops, home marker cams, and alternate gear ratios to optimize stage performance for the application. All stages are constructed to be easily mounted in the horizontal or vertical position without the need for a right-angle bracket.

Motor and Drives

All ART300 stages include an Aerotech brushless servomotor. A full range of matching drives and controls are available for a complete single-source solution.

WORLD HEADQUARTERS: Aerotech, Inc., 101 Zeta Drive, Pittsburgh, PA 15238, USA +1-412-963-7470 Fax: +1-412-963-7459
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ART300 Series SPECIFICATIONS

Basic Model		ART310	ART315	ART320	ART330
Table Diameter		100 mm (4 in)	150 mm (6 in)	200 mm (8 in)	300 mm (12 in)
Total Travel		360° Continuous			
Drive System		Precision Worm Gear (54:1 motor-to-table ratio standard)		Precision Worm Gear in Oil Bath (108:1 motor-to-table ratio standard)	
Resolution	54:1	29.1 µrad (6 arc sec) @ 4000 steps/rev motor resolution			N/A
	108:1	14.6 µrad (3 arc sec) @ 4000 steps/rev motor resolution			
	216:1	7.28 µrad (1.5 arc sec) @ 4000 steps/rev motor resolution			N/A
Maximum Speed	54:1	11 rpm		27 rpm	N/A
	108:1	5.5 rpm		27 rpm	32 rpm
	216:1	2.75 rpm		13.5 rpm	N/A
Accuracy		0.87 mrad (3 arc min)		0.29 mrad (1.0 arc min)	0.15 mrad (0.5 arc min)
Repeatability (Unidirectional)		58.2 µrad (12 arc sec)		58.2 µrad (12 arc sec)	29.1 µrad (6 arc sec)
Axis Wobble		97 µrad (20 arc sec)		48.5 µrad (10 arc sec)	24.3 µrad (5 arc sec)
Axis Runout[1]	Radial	15.0 µm (600 µin)			
	Axial	3.0 µm (120 µin)		2.0 µm (80 µin)	
Maximum Load	Axial	25.0 kg (55.1 lb)		45.0 kg (99.2 lb)	115.0 kg (253.5 lb)
	Radial	10.0 kg (22.0 lb)		25.0 kg (55.1 lb)	90.0 kg (198.4lb)
	Output Torque (Static)	0.3 kg-m (25 lb-in)		0.7 kg-m (60 lb-in)	4.6 kg-m (400 lb-in)
Nominal Stage Weight	Less Motor	2.0 kg (4.4 lb)	2.9 kg (6.4 lb)	6.4 kg (14.1 lb)	14.3 kg (31.5 lb)
	With Motor	3.1 kg (6.8 lb)	4.0 kg (8.8 lb)	7.5 kg (16.5 lb)	17.9 kg (39.5 lb)
Material	Stage and Table	Aluminum		Stage: Cast Aluminum; Table: Aluminum	
Finish	Stage	Black Anodize		Paint: Textured Epoxy (Polane-T); Pebble Grey Color	
	Table	Hard Coating (62 Rockwell Hardness Teflon® Impregnated)			

Note:
1. Measured 75 mm (3 in) above table; includes wobble and eccentricity components.

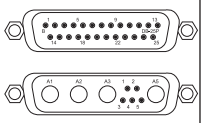


Large aperture versions of the ART300 series are available.

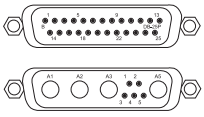
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ART300 Series SPECIFICATIONS

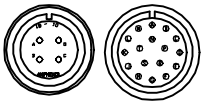
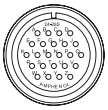
Standard Motor Information (ART310/315)

Code	Type	Model	Bus	Amps	Cable	Driver	Connector(s)
-BMS (default)	Brushless Servo	BMS60-A-D25-E1000H	up to 160 VDC	up to 1.8 A_{rms} Cont up to 7.3 A_{rms} Peak	BMCHPD/BFCD	U511/DR500/DR600	
					PMCHPD/BFCD	BB501 + BA	
					PMCHPD/BFCD	BAI	
					BMP2HPD/BFCD	U100Z	
-DC	DC Servo	1035LT-MSOF-E1000LD	40 VDC	up to 4.1 A Cont up to 8.2 A Peak	DC-MSO	U511/DR500/DR600	
					BADC-MSO1	BB501 + BA	
					BADC-MSO1	BAI	
					DCC	U100S	
-SM	Microstepping	50SMB2-HM	40 VDC	up to 1 A	SMS-O	U511/DR500/DR600	
					SMC	U100M	

Standard Motor Information (ART320)

Code	Type	Model	Bus	Amps	Cable	Driver	Connector(s)
-BMS (default)	Brushless Servo	BMS60-A-D25-E1000H	up to 160 VDC	up to 1.8 A_{rms} Cont up to 7.3 A_{rms} Peak	BMCHPD/BFCD	U511/DR500/DR600	
					PMCHPD/BFCD	BB501 + BA	
					PMCHPD/BFCD	BAI	
					BMP2HPD/BFCD	U100Z	
-DC	DC Servo	1050LT-MSOF-E1000LD	40 VDC	up to 5.4 A Cont up to 10.8 A Peak	DC-MSO	U511/DR500/DR600	
					BADC-MSO1	BB501 + BA	
					BADC-MSO1	BAI	
					DCC	U100S	
-SM	Microstepping	101SMB2-HM	40 VDC	up to 5 A	SMS-O	U511/DR500/DR600	
					SMC	U100M	

Standard Motor Information (ART330)

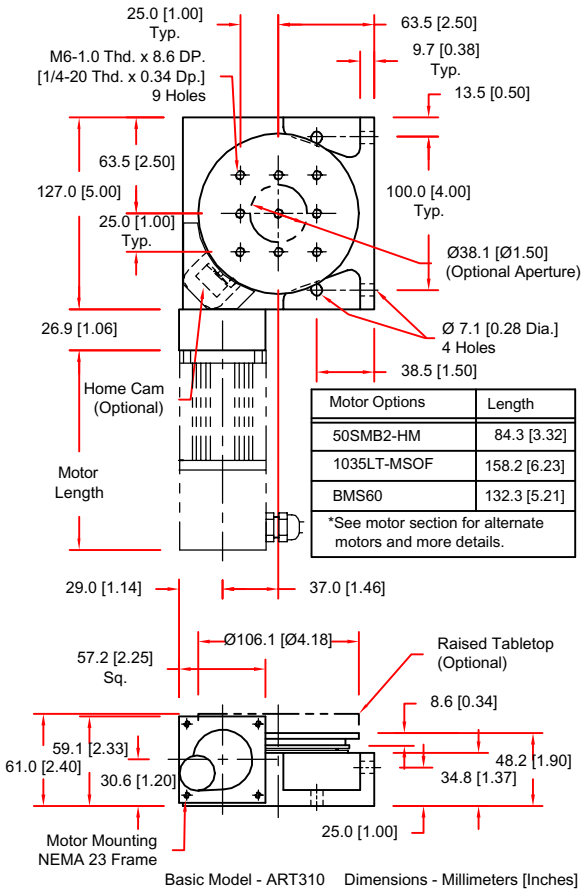
Code	Type	Model	Bus	Amps	Cable	Driver	Connector(s)
-BM (default)	Brushless Servo	BM250E	up to 320 VDC	up to 7.1 A_{rms} Cont up to 17.8 A_{rms} Peak	BMC2/BFC	U511/DR500/DR600	
					PMC/BFC	BB501 + BA	
					PMC/BFC	BAI	
					BMP2/BFC	U100Z	
-DC	DC Servo	1135LT-MSOF-E1000LD	80 VDC	up to 5.5 A Cont up to11.0 A Peak	DC-MSO	U511/DR500/DR600	
					BADC-MSO1	BB501 + BA	
					BADC-MSO1	BAI	
					DCC	U100S	
-SM	Microstepping	310SMB3-HM	80 VDC	up to 6 A	SMS-O	U511/DR500/DR600	
					SMC	U100M	

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ART300 Series DIMENSIONS

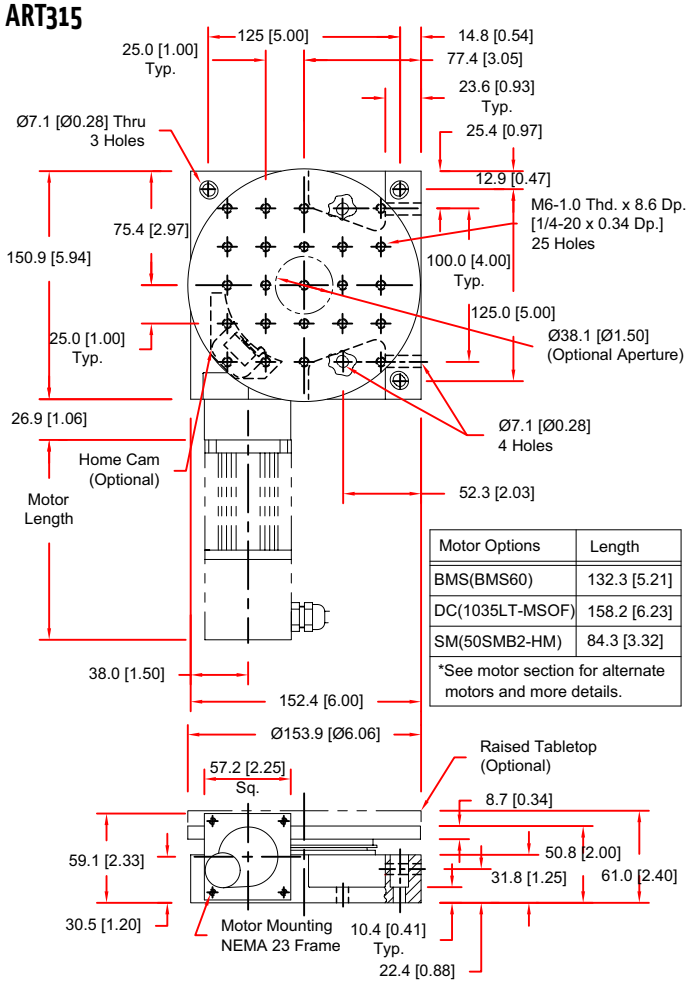
ART310



Motor Options	Length
50SMB2-HM	84.3 [3.32]
1035LT-MSOF	158.2 [6.23]
BMS60	132.3 [5.21]
*See motor section for alternate motors and more details.	

Basic Model - ART310 Dimensions - Millimeters [Inches]

ART315



Motor Options	Length
BMS(BMS60)	132.3 [5.21]
DC(1035LT-MSOF)	158.2 [6.23]
SM(50SMB2-HM)	84.3 [3.32]
*See motor section for alternate motors and more details.	

Basic Model - ART315 Dimensions - Millimeters [Inches]

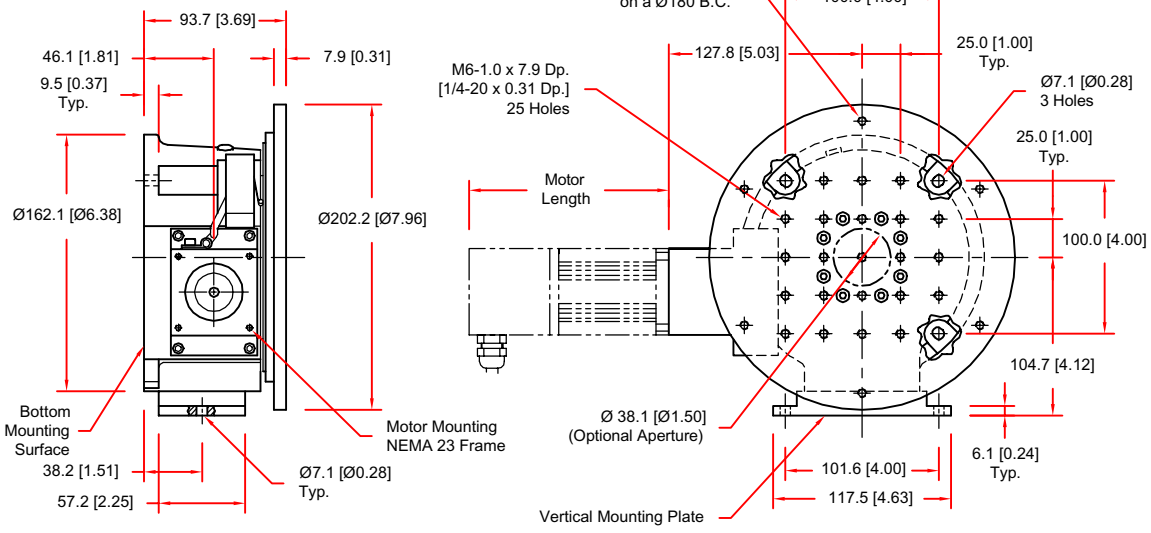
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ART300 Series DIMENSIONS

ART320

Motor Options	Length
BMS(BMS60)	132.3 [5.21]
DC(1050LT-MSOF)	178.6 [7.03]
SM(101SMB2-HM)	135.1 [5.32]
*See motor section for alternate motors and more details.	



Basic Model - ART320

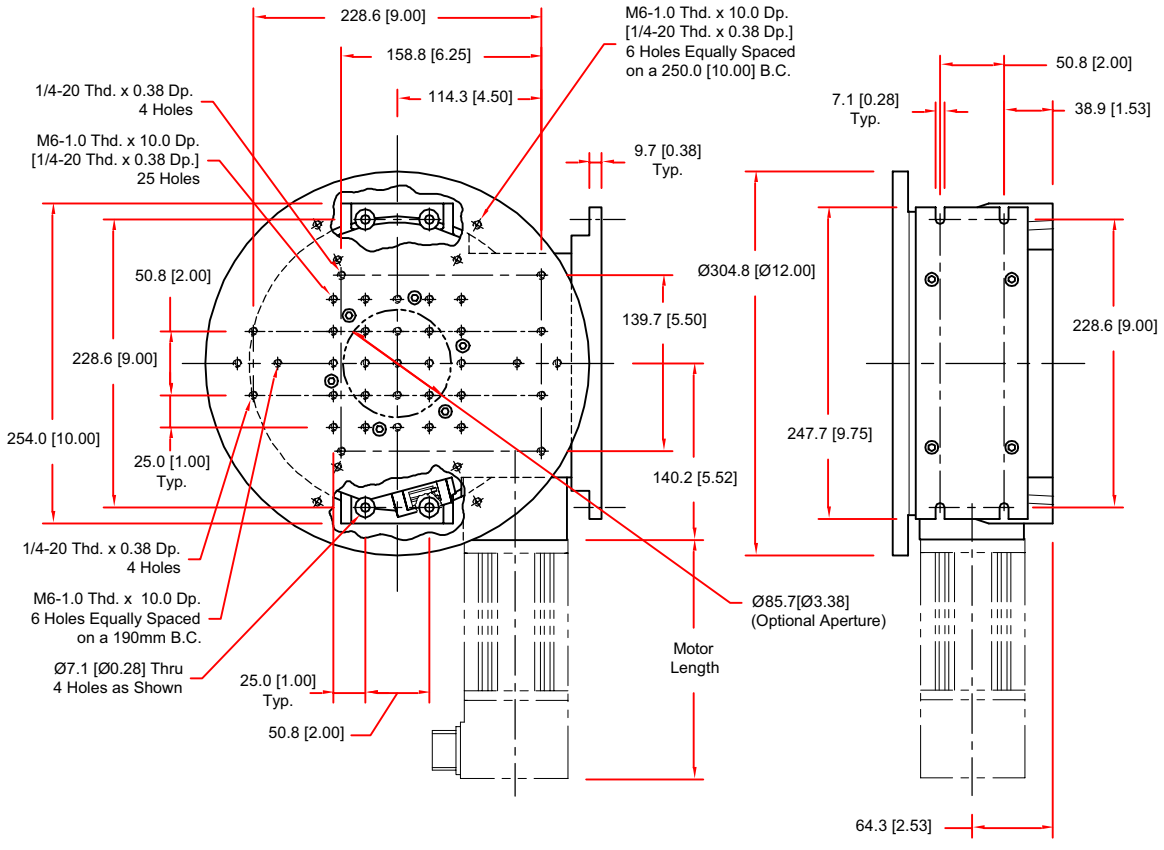
Dimensions - Millimeters [Inches]

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ART300 Series DIMENSIONS

ART330



Motor Options	Length
BMS(BM250-MS)	190.0 [7.48]
DC(1135LT-MSOF)	202.7 [7.98]
SM(310SMB3-HM)	165.4 [6.51]
*See motor section for alternate motors and more details.	

Basic Model - ART330

Dimensions - Millimeters [Inches]

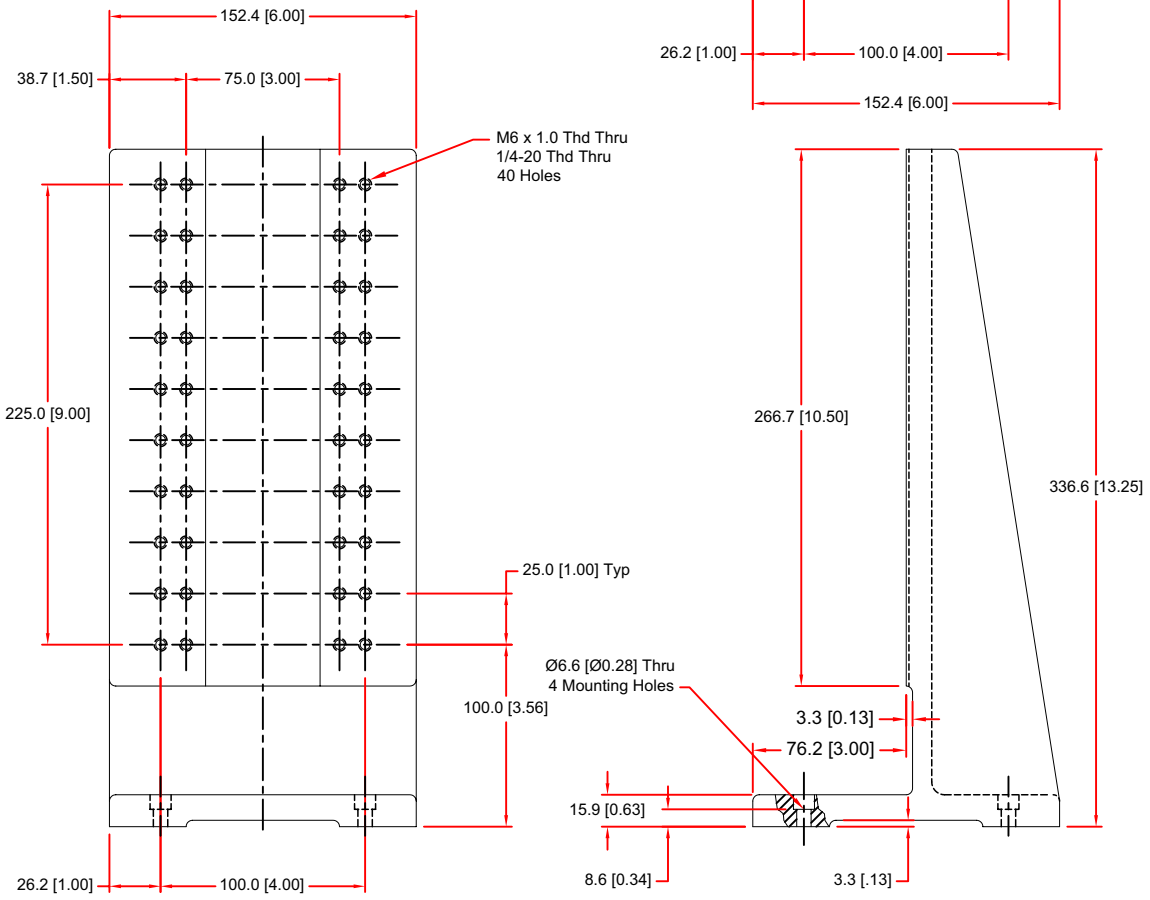
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ART300 Series DIMENSIONS

HDZ2 Bracket



Dimensions - Millimeters [Inches]		
Basic Model	Recommended For Series	Weight kg [lb]
HDZ2	ART320	4.3 [9.5]



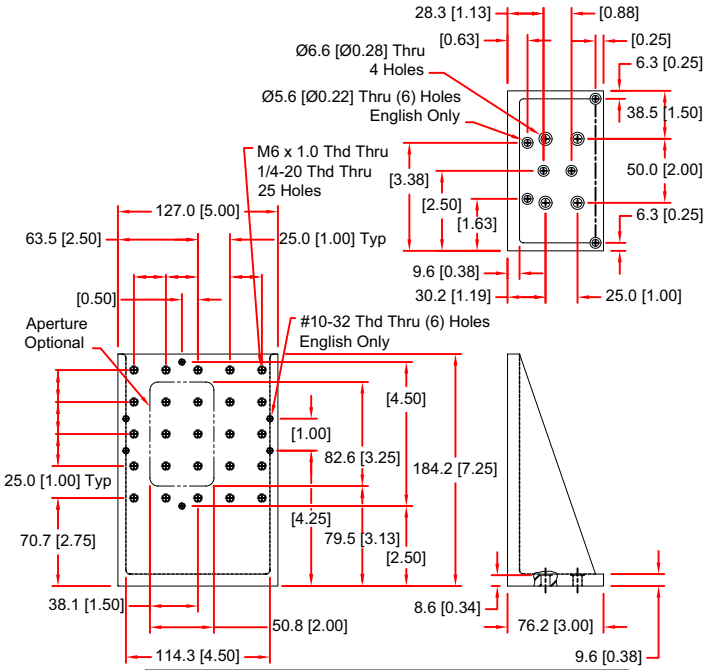
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ART300 Series DIMENSIONS

HDZ3 Bracket

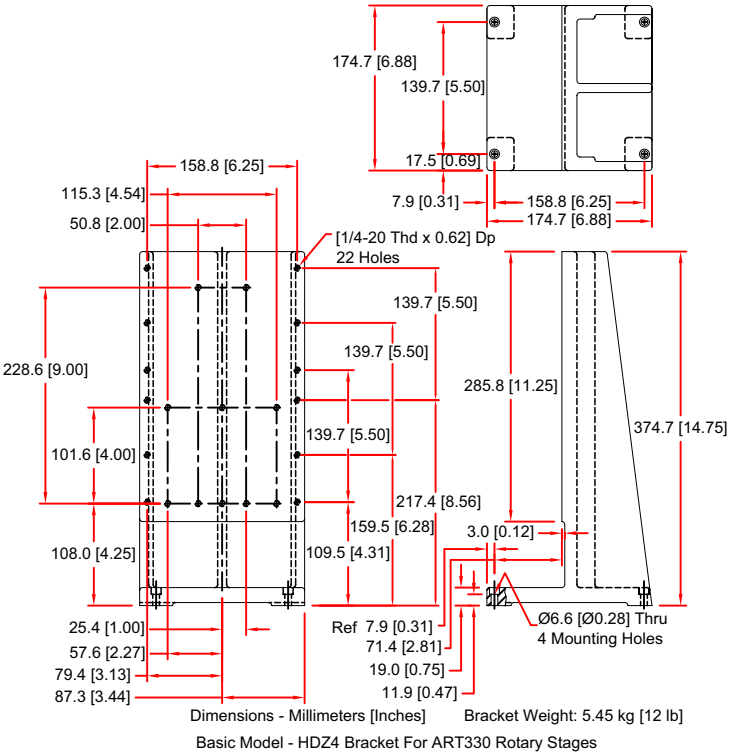




Dimensions - Millimeters [Inches]		
Basic Model	Recommended For Series	Weight kg [lb]
HDZ3	ART310, ART315	1.1 [2.4]

HDZ4 Bracket





Dimensions - Millimeters [Inches] Bracket Weight: 5.45 kg [12 lb]

Basic Model - HDZ4 Bracket For ART330 Rotary Stages

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ART300 Series ORDERING INFORMATION

Ordering Example

ART3	10	/VAC3	-M	-G54	-BMS	-HC
Series	Table Diameter	Stage Construction Options	Mounting and Grid Pattern	Gear Ratio	Motor	Options
50 100	10 15 20 30	/VAC3 /VAC6	-M -U -MA -UA	-G54 -G108 -G216	-BMS -BM -DC -SM -NM	-HC -RB310U -RB310M -RB310UA -RB310MA -RB315U -RB315M -RB315UA -RB315MA

ART300 Series Rotary Stage

ART310	100 mm (4 in) diameter rotary stage
ART315	150 mm (6 in) diameter rotary stage
ART320	200 mm (8 in) diameter rotary stage
ART330	300 mm (12 in) diameter rotary stage

Stage Construction Options

/VAC3	Vacuum preparation of stage to 10^{-3} torr.
/VAC6	Vacuum preparation of stage to 10^{-6} torr.

Mounting and Grid Pattern

-M	Tabletop with metric-dimension mounting pattern and holes
-U	Tabletop with English-dimension mounting pattern and holes
-MA	Tabletop with aperture and metric-dimension mounting pattern and holes
-UA	Tabletop with aperture and English-dimension mounting pattern and holes

Gear Ratio

-G54	54:1 gear ratio ART310, ART315 - standard ART320 - optional
-G108	108:1 gear ratio ART310, ART315 - optional ART320 - standard ART330 - standard (only ratio available with ART330)
-G216	216:1 gear ratio ART310, ART315 - optional

Motor

-BMS	Brushless servo motor with connectors and 1000-line encoder. Requires motor-to-controller cable. ART310, ART315, ART320 (BMS60-A-D25-E1000H/)
-BM	Brushless servo motor with connectors and 1000-line encoder. Requires motor-to-controller cable. ART330, (BM250-MS-E1000H/)
-DC	DC servo motor with connector and 1000-line encoder. Requires motor-to-controller cable. ART310, ART315, (1035LT-MSOF-E1000LD/) ART320, (1050LT-MSOF-E1000LD/) ART330, (1135LT-MSOF-E1000LD/)
-SM	Stepping motor with 4.6 m (15 ft) integral cable and home marker pulse (one per rev) ART310, ART315, (50SMB2-HM/) ART320, (101SMB2-HM/) ART330, (310SMB3-HM/)
-NM	No motor or encoder

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ART300 Series ORDERING INFORMATION

Options

-HC	Home cam assembly establishes home reference accurate to one count. Requires home marker or encoder option on motor.
-RB310U	Raised tabletop for ART310, English
-RB310M	Raised tabletop for ART310, metric
-RB315U	Raised tabletop for ART315, English
-RB315M	Raised tabletop for ART315, metric
-RB310UA	Raised tabletop for ART310, English with aperture
-RB310MA	Raised tabletop for ART310, metric with aperture
-RB315UA	Raised tabletop for ART315, English with aperture
-RB315MA	Raised tabletop for ART315, metric with aperture

Accessories (to be ordered as separate line item)

HDZ3	English right angle L-bracket for ART310, ART315
HDZ3M	Metric right angle L-bracket for ART310, ART315
HDZ2	English right angle bracket for ART320
HDZ2M	Metric right angle bracket for ART320
HDZ4	English right angle bracket for ART330
HDZ4M	Metric right angle bracket for ART330

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