

ROMER / CIMCORE PRODUCT DATA SHEET

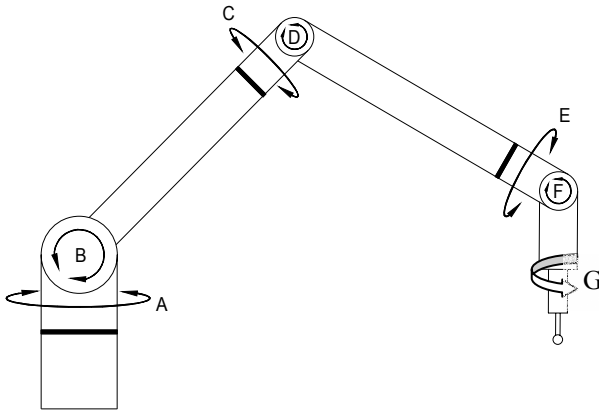
INFINITE SC, 7th Axis Portable Coordinate Measuring Machine



General:

Machine Model -	Seven Axis Articulated Portable Coordinate Measuring Machine
Probing System Type -	Rigid, Flexible or Non-Contact.
Modes of Operation -	Manual, Articulated by User
Standard Features -	Integrated 7.2 volt Li-ION rechargeable battery Wireless communication via DPAC WIFI 802.11b controller Next generation integrated “Zero G” Counterbalance
Control Modes -	Manual
Special Accessories -	Additional Contact and Non-Contact probes, GridLOK Positioning System, SpaceLOK System, TooLOK
Software -	WinRDS Interface / Support Software Various Application Software Packages, (See Catalog)
Operating Systems -	Windows 2000, Win XP, (WinRDS 4.0 +up)

Machine Classification, Degrees of Freedom - 2-2-3



Axis	A	B	C	D	E	F	G
Degrees of Rotation	Infinite	170°	Infinite	180°	Infinite	180°	Infinite

Degrees of Rotation with C/Balance	Infinite	145°	Infinite	180°	Infinite	180°	Infinite
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Dimensions, Weights and Moments:

Measuring Range (X,Y,Z - Spherical)

Arm Model	Range (mm)	Range (Inches)
5012SC	1200 mm	48 inches (4')
5018SC	1800 mm	72 inches (6')
5024SC	2400 mm	96 inches (8')
5028SC	2800 mm	108 inches (9')
5030SC	3000 mm	118 inches (10')
5036SC	3600 mm	144 inches (12')

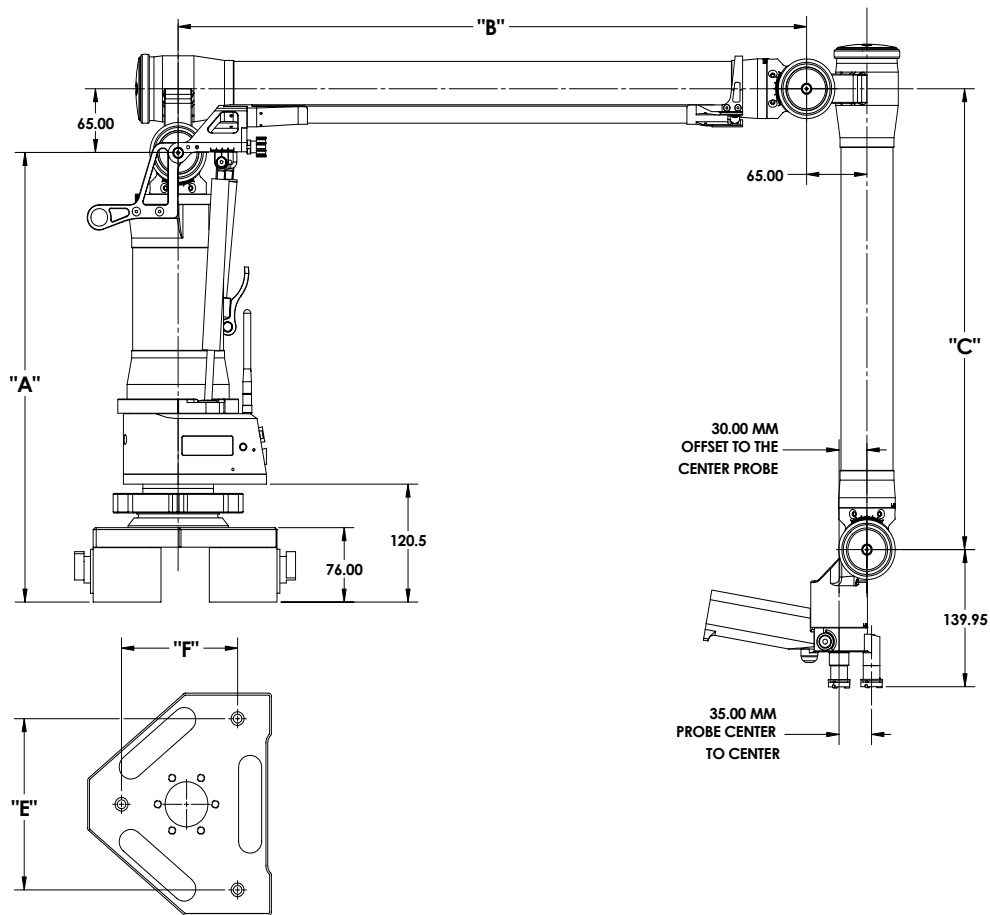
Mass

Arm Model	Mass (Kg.)	Mass (lb.)
5012SC	7.37 Kg	16 lbs 4 oz
5018SC	8.05 Kg	17 lbs 12 oz
5024SC	8.33 Kg	18 lbs 6 oz
5028SC	8.50 Kg	18 lbs 12 oz
5030SC	8.85 Kg	19 lbs 8 oz
5036SC	9.13 Kg	20 lbs 2 oz

*** Arm Weights are ARM ONLY**

Magnetic base with 3 - 100KG switch-able magnets 5.84 Kg (12 lbs 14 oz)

Arm Dimensions



ARM MODEL	" A " DIM	" B " DIM	" C " DIM	" E " DIM	" F " DIM
5012i	455.00 mm	265.82 mm	265.82 mm	175.0 mm	125.0 mm
5018i	455.00 mm	495.42 mm	340.82 mm	175.0 mm	125.0 mm
5024i	455.00 mm	678.42 mm	467.82 mm	175.0 mm	125.0 mm
5028i	455.00 mm	769.82 mm	530.82 mm	175.0 mm	125.0 mm
5030i	455.00 mm	861.82 mm	594.32 mm	175.0 mm	125.0 mm
5036i	455.00 mm	1045.82 mm	720.62 mm	175.0 mm	125.0 mm

Performance Data

Arm Model	Point Accuracy (2 Sigma)	Length Accuracy (2 Sigma)
5012SC	+/- .016 mm (+/- 0.0006")	+/- .023 mm (+/- 0.0009")
5018SC	+/- .024 mm (+/- 0.0009")	+/- .035 mm (+/- 0.0014")
5024SC	+/- .028 mm (+/- 0.0011")	+/- .040 mm (+/- 0.0016")
5028SC	+/- .045 mm (+/- 0.0018")	+/- .064 mm (+/- 0.0025")
5030SC	+/- .050 mm (+/- 0.0020")	+/- .071 mm (+/- 0.0028")
5036SC	+/- .070 mm (+/- 0.0028")	+/- .100 mm (+/- 0.0040")

Point Accuracy: Obtained via Single Point Articulation Test, Values at 2 Sigma Confidence per Pending B89 Specification, Range/2 method

Length Accuracy: Obtained via Volumetric Length Accuracy Test, Values at 2 Sigma Confidence per Pending B89 Specification, Range/2 method

Arm Model	Linear Displacement Accuracy
5012SC	+/- .040 mm (+/- .0016")
5018SC	+/- .045 mm (+/- .0018")
5024SC	+/- .050 mm (+/- .0020")
5028SC	+/- .055 mm (+/- .0022")
5030SC	+/- .060 mm (+/- .0024")
5036SC	+/- .065 mm (+/- .0026")

Linear Displacement Accuracy: Obtained on certified step-gage throughout measuring volume. Horizontal (X & Y) orientations and 45° inclinations at 2 Sigma Confidence. Certification statistics calculated via "Range/2" method.

System Resolution

Resolution of Measuring System, (Radial): 0.65 Arc Seconds

Resolution of Measuring System, (Linear): Dependent on distance

Resolution at a distance = $(2\pi / 2 \times 10^6) * R$ (in mm)

Arm Model	Linear Resolution at Maximum radial distance
5012sc	0.00180 mm / mm
5018sc	0.00283 mm / mm
5024sc	0.00372 mm / mm
5028sc	0.00440 mm / mm
5030sc	0.00465 mm / mm
5036sc	0.05650 mm / mm

Probing system: Three Point Kinematic Seat

Probing mounting error: 0.005 mm (0.0002")

Measuring forces (applied during point measurement)

Fixed Value	.15 N
Pre-selectable	NO
Pre-selectable in steps (resolution):	N/A
Maximum stylus mass:	450 g
Maximum stylus length:	300 mm

Repeatability of probe/stylus change:

In all planes referred to probe tip center (range)	0.127 mm (0.0005")
For a probe length of:	300mm

Scanning

Resolution:	(See Arm Resolution)
Operating Range:	Entire Spherical Volume of Arm
Data Rate:	80 Cycles / Second Max

Operating conditions

1. Stylus Length:	Variable
2. Type Diameter:	Variable
3. Number of Measurement Points:	80 Cycles / Second Max (USB)
4. Scanning Speed:	80 / Sec Max (USB)
5. Number and Location of measurement lines:	Single Point, Probe Center

Supply Data:

Universal Worldwide Voltage

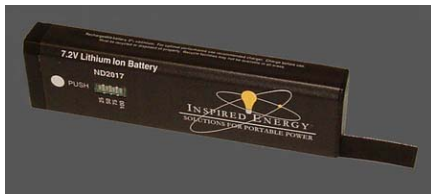
Power supply

Voltage:	110 Volts or 220 Volts
Current:	15 Amps
Permissible voltage variation:	100 - 240 Volts (10%)
Permissible voltage peaks between:	1 μ s and 100 μ s: at 250 Vp
Power consumption:	54 VA
Frequency:	From 50 Hz to 60 Hz

Air supply

Pressure:	N/A
Consumption at:	N/A
Purity Specification:	N/A

7.2 Volt Li-Ion Recharge able battery



ND2017 Smart Li Ion Battery Specification Summary

Capacity:	ND2017A22: 4.4Ah
Chemistry:	Lithium Ion
Voltage:	7.2 V
Max Current Discharge:	2A Continuous
Weight:	200 g
Communications:	Fully SMBus Compatible
Height:	0.79" +.02, -.01"
	20.07mm +.51, -.25
Length:	5.695" \pm 0.01"
	144.65mm \pm 0.25
Width:	1.48" \pm 0.01"
	37.59mm \pm 0.25

Permissible Environmental conditions

Air Humidity: Relative Humidity from 5% to 95%, Non-Condensing

Vibration (55 to 2000Hz): $\leq 100 \text{ ms} / \text{s}^2$ EN 60 068-2-6

Shock (6ms): $\leq 1000 \text{ ms} / \text{s}^2$ EN 60 068-2-27

Protection: Provides protection to IP 64 Standards

Temperature range:

Of machine not in use: 32°F to 115°F (0° C to 46° C)

Required for operation: 32°F to 115°F (0° C to 46° C)

Temperature conditions in which the specified length-measuring uncertainties are guaranteed:

Ambient temperature: 20° C \pm 3.3° C (68° F \pm 6° F)

Air temperature variation: Per Hour: \pm 2° F

Acceleration:

Permissible angular: 105 rad/s²

Vibration maximum: 55 to 2000 Hz (IEC 68-2-27)

Shock and Impact: 6ms (IEC 68-2-27)

DOCUMENT REVISION HISTORY

<u>DATE</u>	<u>DESCRIPTION OF REVISION</u>	<u>RELEASED BY</u>
5/1/05	Initial Official Release of Document	Steve Ilmrud, V.P. Operations