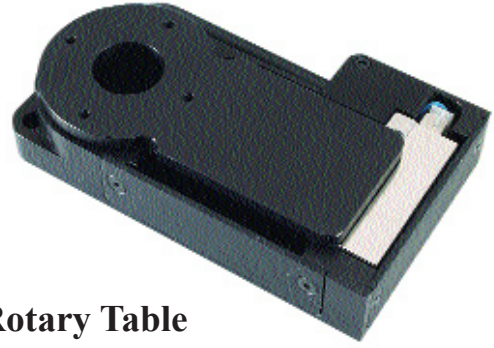


MicroTheta-5™ Direct Drive Rotary Table



Features

- :: Ultra-compact:
Only 20mm high
x 54mm wide x
88mm long!
- :: 2 micro-radian
(0.4 arc-second)
resolution,
repeatability &
stability
- :: +/- 5° travel
- :: 360° per second
top speed
- :: 15mm
through-bore
- :: 15,000 counts per
second² angular
acceleration

Ultra-Compact Direct Drive Rotary Table

Danaher Motion-Dover's MicroTheta-5 RotaryStage is an ultra-compact direct drive rotary table and provides very high performance rotary positioning in an exceptionally small package (20mm high x 54mm wide x 88mm long).

It is ideally suited for photonic alignment applications and provides $\pm 5^\circ$ of motion with a resolution, repeatability, and stability of only two micro-radians (0.4 arc seconds). The direct drive motor has no contacting parts and drives the rotary table directly via magnetic fields. The motor is a two wire, single phase design, and can hence be driven by any brush type servo amplifier. A 15mm through-bore

allows optical paths or cables to be routed through the main bearing. The MicroTheta-5 Stage features built-in limit switches as well as a unique index signal repeatable to two micro-radians. A removable cover on the side of the unit allows large angle manual rotation through 270° ; in conjunction with a master sphere ball, this allows precision location of the rotary axis.

A pair of these stages can be co-mounted so as to produce a high performance actual (as opposed to virtual) pivot, of considerable value in fiber, collimator, and filter alignment.

MICROTHETA-5 DIRECT DRIVE ROTARY TABLE SPECIFICATIONS

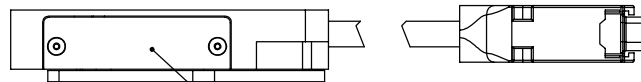
Specification	
Table Diameter	38mm
Through-bore Diameter	15mm
Accuracy	± 90 micro-radians (± 18 arc seconds)
Resolution	2 micro-radians (0.4 arc seconds)
Bi-directional Repeatability	2.5 micro-radians (0.5 arc-second)
Maximum Speed	$360^\circ/s$
Maximum Angular Acceleration	15,000 counts per second ²
Axial Motion	<2 microns
Radial Motion	<2 microns
Tilt Motion	<40 micro-radians
Axial Load Capacity	5kg centered about vertical axis
Axial Stiffness	8.6×10^7 N/m
Radial Stiffness	2.7×10^6 N/m
Torsional Stiffness	4.2×10^3 N-m/Rad
Total Mass	0.31kg
Connector Mass	0.14kg
Rotational Inertia	5.50×10^{-5} kg-m ²
Motor Torque Constant	0.07 N-m/A
Back-emf Constant	0.07V/Rad/s
Coil Resistance	4.3 Ohms
Coil Inductance	1.28 mH
Continuous Current	1.2 A
Peak Current	3.6 A
Motor Continuous Torque	0.085 N-m
Motor Peak Torque	0.250 N-m
Fundamental Motor Constant	0.034 N-m/ $\sqrt{\text{Watt}}$
Motor Type	Direct Drive
Travel	$\pm 5^\circ$

MicroTheta-5™ Rotary Table

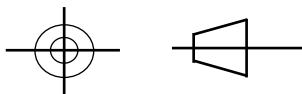
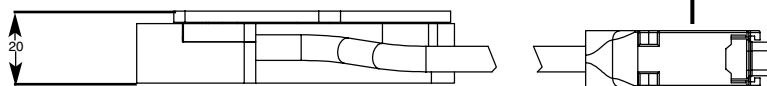
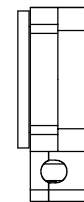
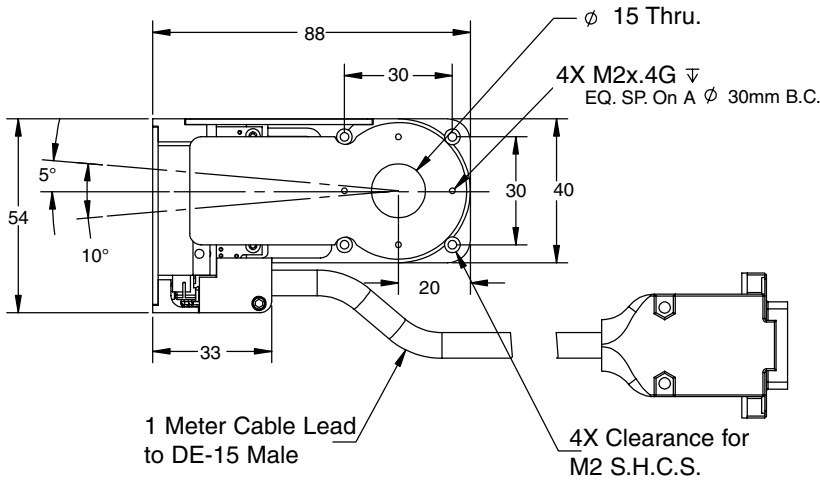
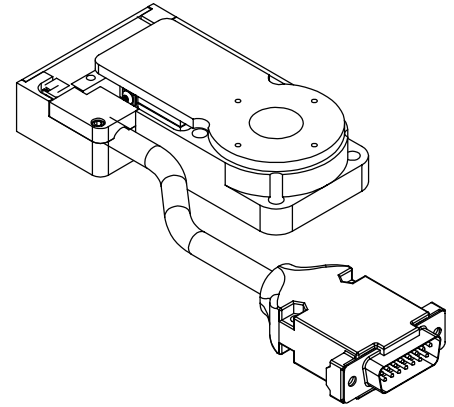
MICROTHETA-5 DIRECT DRIVE ROTARY TABLE SPECIFICATIONS



Helping you build a better machine, faster.



Removable Cover For Alignment Purposes



Third Angle Projection

- Cleanroom compatible option available.
- 9,9; 9,15; 3,15,9 pin configurations available.

MicroTheta-5 Stage Pinouts

1	+ Motor
2	- Motor
3	+5V to +24V Limit Supply
4	+5V Encoder Supply
5	+ Limit
6	Encoder A
7	Encoder A
8	Index
9	Index
10	Limit Ground
11	N/C
12	Encoder Ground
13	- Limit
14	Encoder B
15	Encoder B