CEDRAT TECHNOLOGIES
Innovation in Mechatronics

DTT35XS-SI-2

PIEZO TIP TILT

APPLICATIONS

- Fast steering mirror
- Point ahead mechanism
- Line of sight stabilisation
- Microscanning
- Tracking
- Pointing

KEY FEATURES

- Compact size
- Space Heritage
- Short settling time
- High control bandwidth
- Very Low capacitance per axis
- Large optical deflection angle > 0.6°
- Strain Gauges (SG) positioning sensor
- Operating temperature range -55°C..+70°C

RELATED PRODUCTS

- CCBu20
- CCBu40

AVAILABLE OPTIONS

- Glass mirror size under request
- Specific control loop calibration

AVAILABLE INTERFACES

- Specific mirror interface

ANNOTATIONS

Performances measured in labs environment. A misused can lead to temporary or definitive alterations of properties. Contact CEDRAT TECHNOLOGIES prior using actuators under non standard technical conditions

(1) Full voltage range @ 1Hz

(2) Peak to peak stroke in open & closed loop within the voltage range at ambient.
Piezo actuators are free of friction and their resolution is only limited by the SNR of the voltage amplifier and the measuring equipment resolution

(3) In closed loop with SG sensor

(4) Blocked-free: The actuator is fixed to a mechanical support assumed infinitely stiff

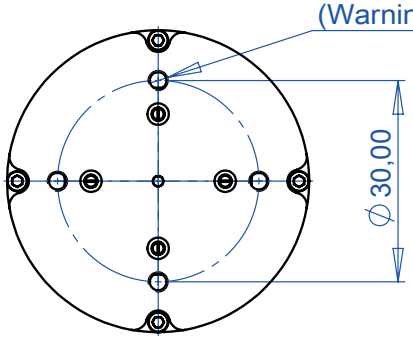
(5) Loaded with an optional Glass mirror 12.2 mm diameter and 3 mm thickness

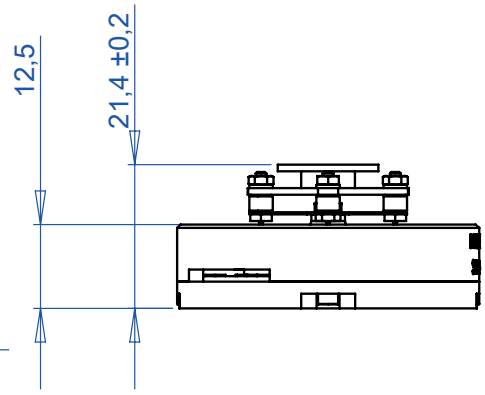
(6) @-3dB and loaded with an optional Glass mirror 12.2 mm diameter and 3 mm thickness and controlled by CCBu40 controller

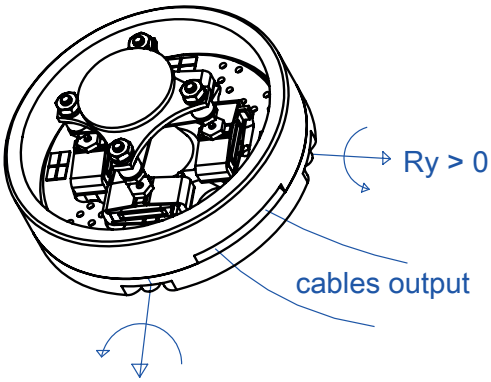
(7) Unloaded, excluding wires

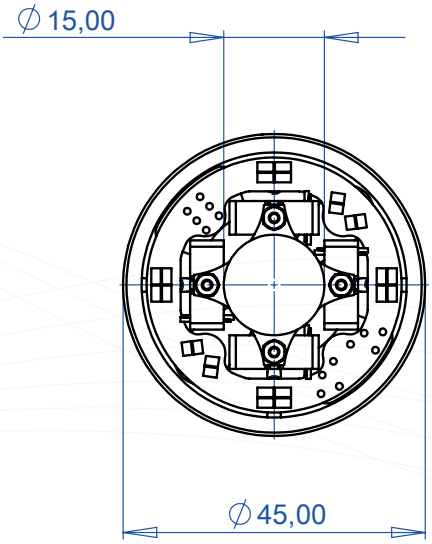
NON CONTRACTUAL PICTURE

PARAMETER	TYPICAL VALUE	UNIT
Quasistatic performances (1)		
Max Angular stroke (2)	> 5	mrad
Resolution (3)	< 1	µrad
Linearity (3)	< 0.2	%
Dynamic performances		
Unloaded resonance frequency (4)	> 2.600	Hz
loaded resonance frequency (5)	> 2.400	Hz
Control Bandwidth (6)	> 600	Hz
5 mrad Settling time @ +/-5% (6)	< 1.5	ms
1 mrad Settling time @ +/-5% (6)	< 1.5	ms
Driving		
Voltage range	-20...+150	V
Capacitance per axis	0.5	µF
Dimensions & interfaces (7)		
Heigth	<22	mm
Diameter	<45	mm
Mass	65	g
Mechanical interfaces	see icd	
Optical interface	see icd	
Electrical interfaces	see icd	









Note:

Mirror ∅ up to 15mm

Mechanical Interfaces:
4 x M3 on ∅ 30mm
Warning: Screw lengths have to be < 4mm

MECHANICAL INTERFACE

Matiere / *Material*	Norme Matière / *Material Standard:* -	Autre norme / *Additionnal Standard* -	
Ref Traitement / Treatment ref. / Ref. Traitement Surface / *Surface Treatment ref.*		Nom de projet / *Project Name* DTT35XS_SM_Small_Mirror	
		Désignation / *Title* ICD_DTT35XS_SM_Small_Mirror	
Dessine par / *Drawn by* aguignabert		CEDRAT TECHNOLOGIES Innovation in Mechatronics 59 chemin du vieux Chêne, 38246 Meylan TEL : 04 56 58 04 00	CONFIDENTIEL INDUSTRIE Ce document est la propriété de CEDRAT TECHNOLOGIES. Ne peut être communiqué sans autorisation écrite.
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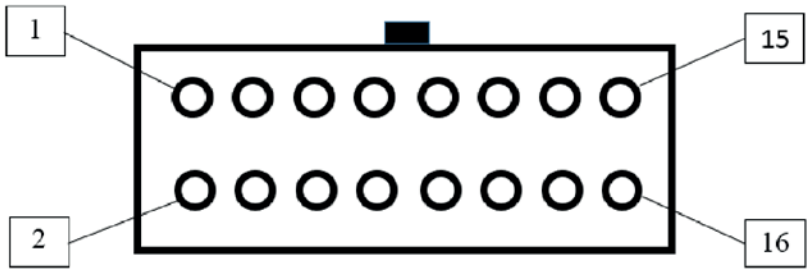
Validé par / *Approved by* aguignabert	Masse / *Mass* 65 g	Reference / Revision 021015 / A.02	Page 1/2

Pin Out table for SUB-D option

PIN NUMBER	SIGNAL	DESCRIPTION
1	VREF	Internal reference signal output (+5V)
2	AGND	Analog ground return for the mechanism
3	SG X+	SG+ output for X axis
4	SG X-	SG- output for X axis
5	SG Y+	SG+ output for Y axis
6	SG Y-	SG- output for Y axis
7	-	
8	-	
9	PGND	Power ground return for the mechanism
10	PGND	Power ground return for the mechanism
11	PGND	Power ground return for the mechanism
12	PGND	Power ground return for the mechanism
13	+130	+130V push-pull rail input for the piezo-actuators
14	PGND	Power ground return for the mechanism
15	VX	Input voltage for the Rx axis piezo-actuators of the mechanism
16	VY	Input voltage for the Ry axis piezo-actuators of the mechanism



Connector reference: HARWIN M80-4801642 16 pins

Electrical Interfaces (LEMO option):
- Piezo actuators: Wire length 1.5m
Lémo FGG.00.303.CLAD22
Cable X to actuate around Ox Axis
Cable Y to actuatre around Oy Axis

- SG Option: Wire length 1.5m
Lémo FGG.00.304.CLAD22

ELECTRICAL INTERFACE

Matiere / *Material*	Norme Matière / *Material Standard:* -		Autre norme / *Additionnal Standard* -
Ref Traitement / Treatment ref. Ref. Traitement Surface / *Surface Treatment ref.*	Tolérances générales selon ISO2768-fH *General tolerances according to ISO2768-fH* Ra = 1.6 max Ebavurage/*Deburring* : chamf. 45° 0.1 to 0.2 Rayon Raccord./*Radius Curvature* : 0.1 to 0.4 Battement/*Run Out* : 0.1mm Symétrie/*Symmetry*:0.5mm		Nom de projet / *Project Name* DTT35XS_SM_Small_Mirror Désignation / *Title* ICD_DTT35XS_SM_Small_Mirror
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