

### APPLICATIONS

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

### KEY FEATURES

- > Compact
- > Low capacitance
- > High resonance frequency
- > Space heritage

### RELATED PRODUCTS

- > CCB $\mu$ 20
- > CCB $\mu$ 40

### OPTIONS AND INTERFACES

- > Available options

### VACUUM

- > Available interfaces
- > Specific mirror interface



NON CONTRACTUAL PICTURE

| PARAMETER  | TYPICAL VALUE | UNIT       |
|--|---------------|------------|
| <b>&gt; Quasistatic performances <sup>(1)</sup></b>        |               |            |
| Nominal stroke   | 2.8           | mrad (+/-) |
| Minimal stroke   | 2.5           | mrad (+/-) |
| Blocked force  | 19            | N          |
| Stiffness  | 2             | N/ $\mu$ m |
| Resolution <sup>(2)</sup>                                  | 0.3           | $\mu$ rad  |
| <b>&gt; Dynamic performances</b>                           |               |            |
| Force limit (0-peak) <sup>(3)</sup>                        | 13.5          | N          |
| Unloaded Blocked - free resonance frequency <sup>(4)</sup> | 2 600         | Hz         |
| <b>&gt; Driving</b>  |               |            |
| Voltage range  | -20/150       | V          |
| Capacitance <sup>(5)</sup>                                 | 0.5           | $\mu$ F    |
| <b>&gt; Dimensions &amp; interfaces</b>                    |               |            |
| Height   | 21.4          | mm         |
| Diameter   | 45            | mm         |
| Mass <sup>(6)</sup>  | 65            | g          |
| <b>&gt; Mechanical interfaces</b>                          | See ICD       |            |
| <b>&gt; Optical interface</b>                              | See ICD       |            |
| <b>&gt; Electrical interfaces <sup>(5)</sup></b>           | See ICD       |            |

### ANNOTATIONS

Guaranteed 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) AC voltage, full range @ 1Hz

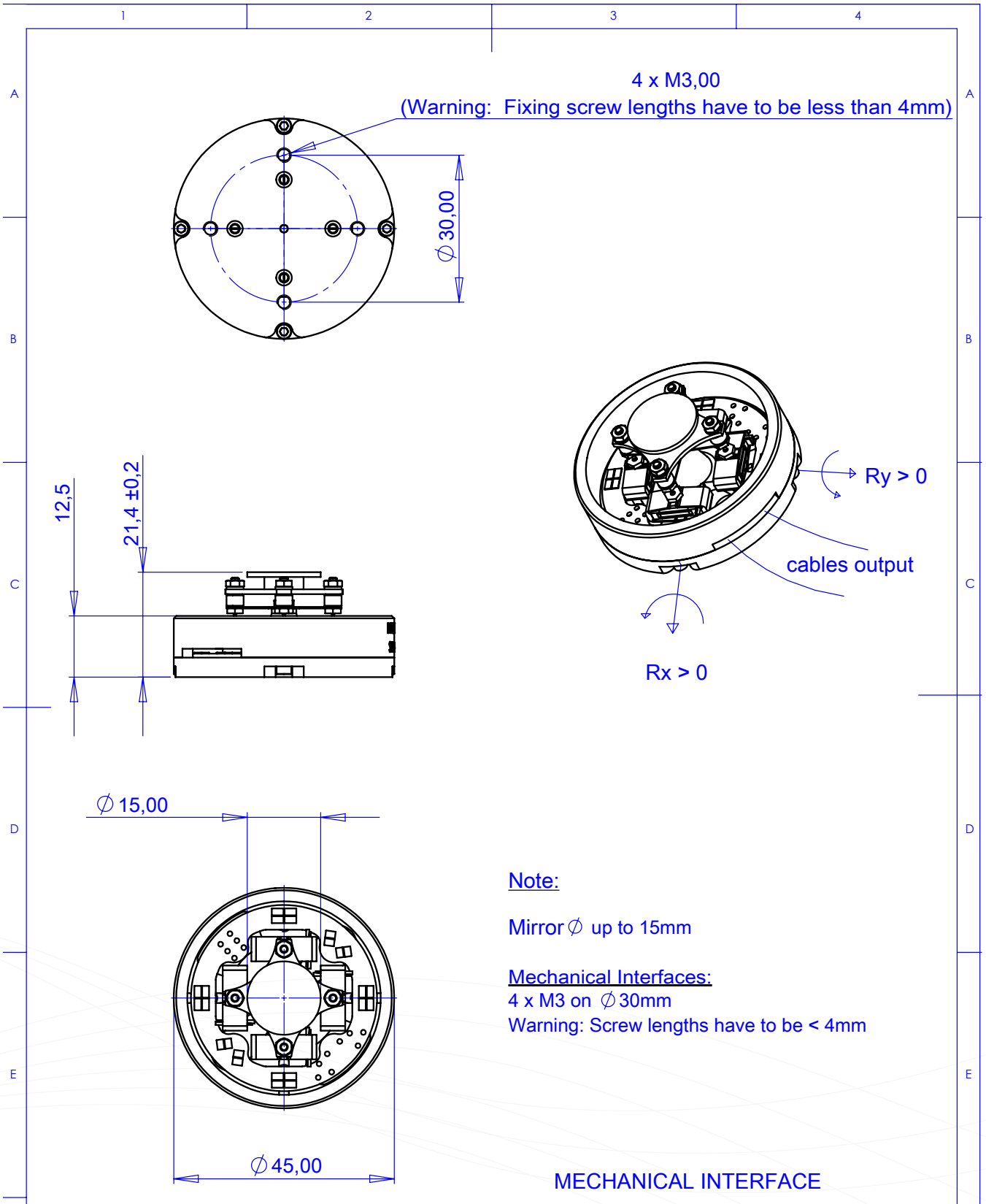
(2) With low noise amplifier SNR=1dB

(3) Pulling or pushing force, valid up to  $\square$  of the unloaded blocked-free resonance frequency

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

(5) Per electrical port, quasistatic excitation, free-free, on the admittance curve

(6) unloaded, excluding wires



**Note:**

Mirror  $\phi$  up to 15mm

**Mechanical Interfaces:**

4 x M3 on  $\phi$  30mm

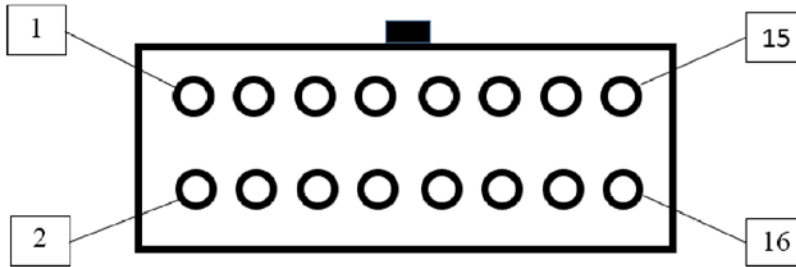
Warning: Screw lengths have to be < 4mm

**MECHANICAL INTERFACE**

|  |  |   |                    |   |   |
|--|--|---|--------------------|---|---|
| Matière / Material                               |  | Norme Matière / Material Standard:                      |                    | Autre norme / Additional Standard   |   |
| Ref. Traitement / Treatment ref.                 |  | -   |                    | -   |   |
| Ref. Traitement Surface / Surface Treatment ref. |  | -   |                    | -   |   |
| Dessiné par / Drawn by<br><b>aguignabert</b>     |  | Nom de projet / Project Name<br>DTT35XS_SM_Small_Mirror |                    | Designation / Title<br>ICD_DTT35XS_SM_Small_Mirror  |   |
| Vérifié par / Checked by<br><b>apiepton</b>      |  | Obsolescence / Life Cycle<br>R&D                        | Date<br>18/06/2019 | <p><b>CONFIDENTIEL INDUSTRIE</b><br/>Ce document est la propriété de CEDRAT TECHNOLOGIES. Ne peut être communiqué sans autorisation écrite.</p> |   |
| Validé par / Approved by<br><b>aguignabert</b>   |  | Masse / Mass<br>65 g                                    |                    |   | Format<br><b>A4</b><br>Echelle/Scale<br>1:1 |
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## 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 actuate around Oy Axis

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

## ELECTRICAL INTERFACE

|  |  |   |  |   |  |
|--|--|---|--|---|--|
| Matière / Material                               |  | Norme Matière / Material Standard:  |  | Autre norme / Additional Standard   |  |
| Ref Traitement / Treatment ref.                  |  | Tolérances générales selon ISO2768-fH<br>General tolerances according to ISO2768-fH                         |  | Nom de projet / Project Name  |  |
| Ref. Traitement Surface / Surface Treatment ref. |  | Ra = 1.6 max<br>Ebavurage/Deburring : chamf. 45° 0.1 to 0.2<br>Rayon Raccord./Radius Curvature : 0.1 to 0.4 |  | Designation / Title   |  |
| Dessine par / Drawn by                           |  | Battement/Run Out : 0.1mm<br>Symétrie/Symmetry: 0.5mm   |  | ICD_DTT35XS_SM_Small_Mirror   |  |
| Vérifié par / Checked by                         |  | Date  |  |  <b>CONFIDENTIEL INDUSTRIE</b><br>Ce document est la propriété de CEDRAT TECHNOLOGIES. Ne peut être communiqué sans autorisation écrite. |  |
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| aguignabert                                      |  | g   |  | 021015 / A.02   |  |
| apieton  |  | R&D 18/06/2019  |  | Format <b>A4</b><br>Echelle/Scale <b>1:1</b>  |  |
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