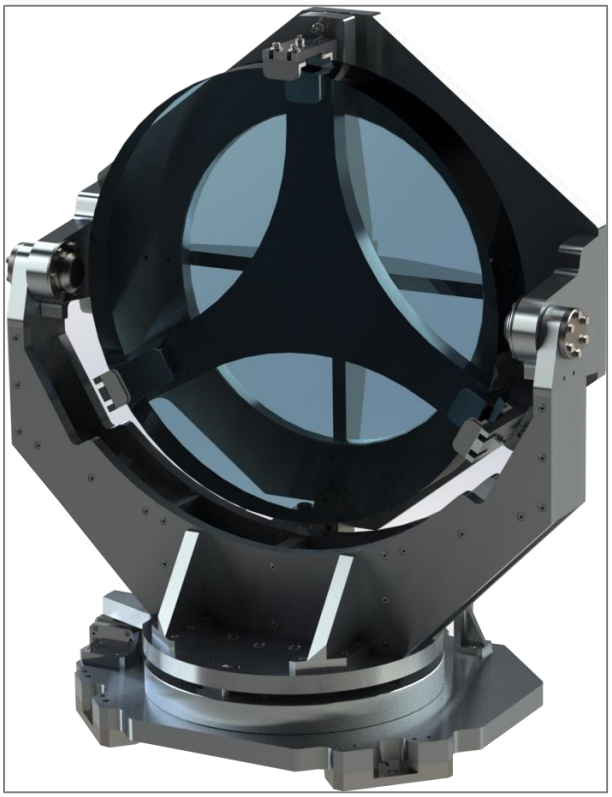
LARGE MOTORIZED MOUNT
GIMBAL 605 mm

PRODUCT DESCRIPTION FILE ISP 17A889FPI0001-A

Update : 2017/04/11

This motorized mount allows the adjustment of azimuth and elevation thanks to two TMP 29 actuators. It has a very high mechanical stability.

The design can be easily adapted to various optics sizes.



Non contractual Photo

The Gimbal mount generate a rotary movement along two motorized axes (Azimuth and Elevation).

The azimuth rotation is guided by a crossed roller bearing. It is driven by a TMP29 stage that pushes the frame through a cam roller. The backlash compensation is ensured by a spring.

The elevation rotation is guided by two pairs of pre-stressed ball bearings. It is driven by a TMP29 stage pushing the frame through a cam roller. The polarization is obtained thanks to gravity (offset between the center of gravity and rotation axis).

Both rotation axes cross themselves at the center of the optical surface:
The elevation axis is located on the optical surface for any azimuth/elevation position.
The azimuth axis pass through the center of optical surface for any azimuth/elevation angular position.

The optics is fixed on 3 points thanks to POM pads.

The mount has a lifting ring for the handling of the complete mount with assembled optics.

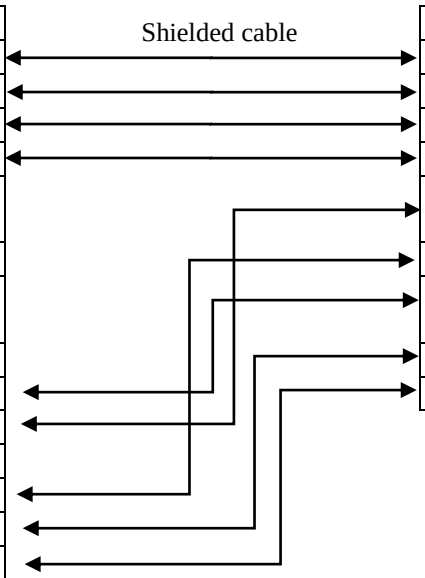
1 - Technical Data

TMP29 STAGE DATA SHEET	VALUE
Supply voltage	24V
Current	0,5 A / phase
Resistance	3,5 Ω/phase
Inductance	1,2 mH/ Phase
Frequency	4000Hz max
Travel range	+/- 14,5 mm
Resolution	0,0333 µm / motor steps
Minimum recommended increment	2 motor steps
Maximum axial, radial and transverse load	400 N
Accuracy	< 75nm + 5% of stroke
RMS error	≤ 75 nm
Hysteresis	< 5 µm
Mass	1,7 Kg
Connector	SUBD male 9 pins

GIMBAL MOUNT DATA SHEET	VALUE
Optics diameter	605,5 mm +/- 5 mm
Optics thickness	80 mm +/- 5 mm
Payload	Until to 60 Kg
Locking device for transport	yes
L azimut	264 mm
Teta azimut resolution	0,20 µrad (2 motor steps on actuator)
Teta azimut angular range	+/- 3,°
L Elevation	363 mm
Teta Elevation resolution	0,14 µrad (2 motor steps on actuator)
Teta Elevation angular range	+/- 2,2°
Position stability unpowered : First eigen frequency of equipped mount	Target value 50 Hz.
Outgassing properties for a vacuum level from 1.10^{-5} to 1.10^{-7} mbars. Theshold for a RGA analysis:	N.A. for this version

- Further technical characteristics :
    - stepper motors : 0,5 A/ phase (value must be adjusted according to payload) *Please consult ISP for controller*
    - Connectors type SUB D 25 pins male
    - Position stability unpowered

Pin #	SUB D25
1 et 2	+ phase1
3 et 4	- phase1
5 et 6	+ phase2
7 et 8	- phase2
9	Middle point phase1 (unipolar motor)
10	Nc
11	Middle point phase2 (unipolar motor)
12	Nc
13	Mechanical origin
14	Mass (Shielding)
15	Index (encoder)
16	0V
17	+ end of travel
18	- end of travel
19	A (encoder)
20	B (encoder)
21	+5V
22	0V
23	/A (encoder)
24	/B (encoder)
25	/Index (encoder)



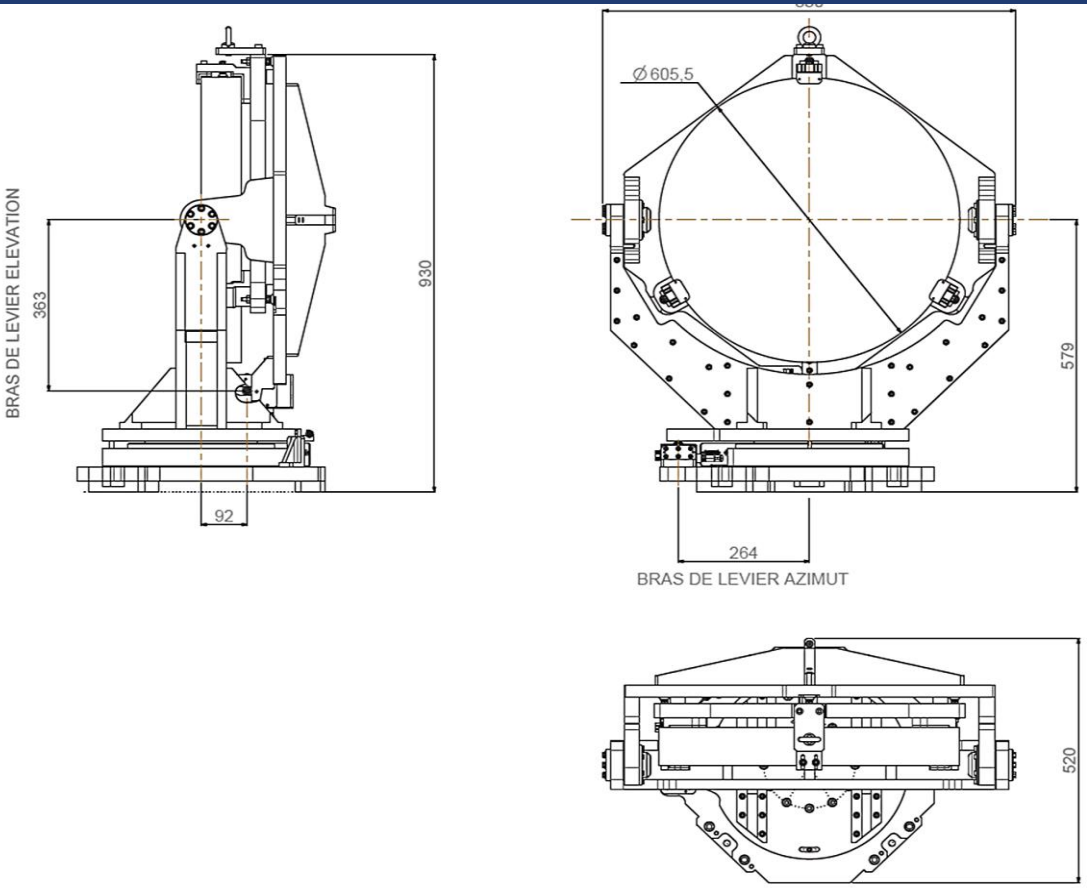
Pin #	TMP29
1	Phase A+
2	Phase A-
3	Phase B+
4	Phase B-
5	TMP mass (mechanical)
6	Common switch
7	Origin switch
8	+ End of travel
9	- End of travel

- Options :
    - Preparation for high vacuum
    - Preparation for resistance against radiations

2 - Applications

- Accurate positioning and orientation of optics such as mirrors, gratings, KDP, … for beam transport, frequency conversion, optical compressor, …
- Accurate and stable positioning of optics on machines (coating, metrology, optical test bench,...)

3 - Dimensions



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