

Stab Series Leos S

2 axis lightweight
stabilized platform for
observation and gunner sight



MAIN FEATURES

- Up to 25 kg class payload
- High level of LOS gyrostabilization
- Direct drive motor technology
- MIL STD qualified
- ITAR FREE

LEOS S is a ruggedized, accurate, stabilized platform capable of handling up to 25 kg of optronics. Use of direct drive motors ensure long operational life with reduced maintenance. High level bandwidth of the control loop and reduced friction ensure accurate LOS gyrostabilization when the host platform is moving. LEOS S includes a slip ring as a standard that allows nx360 ° pan rotation. Several modes are available (position, rate, gyroposition, gyro-rate). LEOS S is designed for continuous operation in harsh environments (rain, dust, sand, vibrations, shocks, climatic...). Several configurations are available to custom your product (color, electrical wiring, environments).

TECHNICAL SPECIFICATIONS

Performances

Motorized axis	2
Pan axis range	nx360 °
Tilt axis range	> -90 ° to < +90 °
Tilt axis gyrostab. range	> -70 ° to < +70 °
Pan rate	0.01 °/s to 115 °/s
Tilt rate	0.01 °/s to 115 °/s
Pan acceleration	115 °/s ² for max payload inertia
Tilt acceleration	115 °/s ² for max payload inertia
Line of sight gyrostab	< 100 µrad rms (with APG 25 profile)
Gyro drift	< 400 µrad during 10 s for S6 < 3,000 µrad during 10 s for S5
Position accuracy	0.01 °
Duty-Cycle	100 %
Finger lock	both axes, current less locked

Physical

Construction	Aluminium
Coating and painting	Epoxy/polyamide
Weight	< 25 kg
Overall dimensions	Ext Ø 379x365 mm Intrusion Ø 120x135 mm

Payload

Max Weight	25 kg
Pan Inertia	0.2 < J < 0.65 kg.m ²
Tilt Inertia	0.2 < J < 0.65 kg.m ²
CoG / balanced point max	mm range
CoG / balanced point max	> 300 Hz for first mode of rotation around each axis

Electrical

Input voltage	20-33 VDC
Pan tilt mean power req	< 130 W
Pan tilt peak power req	< 210 W
Connectors to host	D38999
Connectors to payload	Sub-D

Environmental

Operating temperature	-32 °C to +65 °C
Storage temperature	-40 °C to +71 °C
Low pressure	270 hPa
Vibrations	3 grms 3 axis
Shocks	40 g, 11 ms ¹ / ₂ sinus
Rain	10 cm/h
Water/dust	IP66
Salt Fog	+35 °C, 5 % NaCl 48 h Land 960 h Naval
EMC	CE102 CS101, 114, 115 RE101, 102 RS 103

CONFIGURATIONS

LEOS SX – A – B – C

Note that as a standard and without any other requests from the customer, the tilt range is configured for -20° to $+60^{\circ}$.

X Built-in gyro

Various gyros are available to match customer application

X = 5 dual axis, affordable cost MEMS gyros

X = 6D dual axis, low drift MEMS gyros

X = 6T tri axis, low drift MEMS gyros

A Environment

Materials and finishing is reinforced to sustain maritime application

A = L for land application (Aluminum with Nickel plating typ)

A = N for naval application (Bronze typ)

B Slip-ring

A capsule slip-ring is used to allow unlimited rotation in Az B=1 standard 80 lines type (shared for payload and LEOS S) with

- RS422 (for LEOS S)
- RS or CAN (for payload)
- GiGEth (for payload)
- 2 x HD-SDi (for payload)
- 22 x 2A (6 x 2A for LEOS S and 16 x 2A for payload)
- 5 x discretes (twisted)
- 5 x spares (twisted)
- B = 2 Standard 80 lines capsule slip-ring with specific wiring (68 lines available for customer)
- B = 3 Custom

C Painting color

- C = 0: Custom
- C = 1: Sand PIR 32X2 (NORMDEF 0001)
- C = 2: Green NATO PIR 24X5 (NORMDEF 0001)
- C = 3: Green dark PIR 34X3 (NORMDEF 0001)
- C = 4: Grey/blue mid-clear 2625 (NORMDEF 0001)
- C = 5: Brown land PIR 30X4 (NORMDEF 0001)
- C = 6: Black 3603 (NORMDEF 0001)
- C = 7: White UV NATO 36X0 (NORMDEF 0001)

LEOS S documentation

DIN00099 : Communication protocol

00210892-A : Mechanical ICD

TBD : Electrical ICD

TBD : Qualification data package