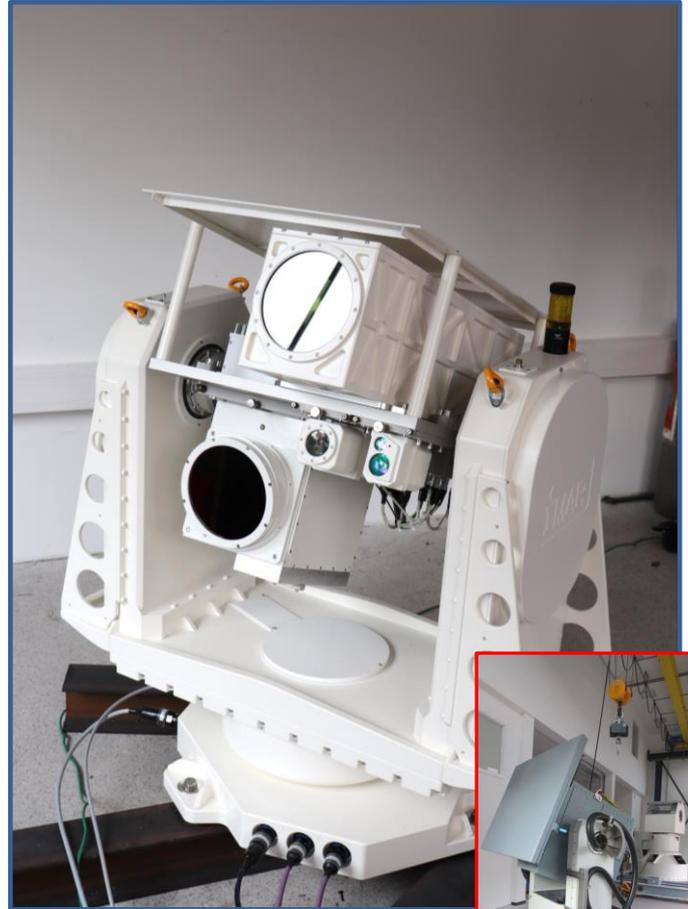


# iIPSC-MSG-60 and iIPSC-MSG-130

## Two Axes Gyro Stabilized Gimballed Platform for 60 kg or 130 kg Payload

### Key Features

- Two-axes stabilized payload platform: Azimuth and elevation axes for gyro stabilized LOS (line-of-sight) control
- Adaptable to several RF and multiple EO/IR sensors due to customized mounting tray (IR, micro-bolometer, daylight camera, LRF, antennas, weapons etc.); balanced payload up to 60 kg for high dynamics and 130 kg for reduced dynamics
- Direct torque drives for highest resolution, negligible hysteresis and fast dynamics ( $> 300 \text{ }^\circ/\text{s}$ ,  $> 200 \text{ }^\circ/\text{s}^2$  available)
- Optical sliprings for signal transmission, gold plated sliprings for power transmission; cable wrap as option
- Available Features:
  - iSCU: Gyro based Stabilization and Control Unit
  - iOET<sup>2</sup>: Video Target Tracker, Video Time Stamping, Video Data Storage
  - iJP: Joystick Panel for control
  - INS/GNSS: geo-referencing with down to centimeter-level accuracy and for blind-pointing support
  - Video Fusion, Image Blending (option)
- Designed to operate in harsh environment on trucks and on naval vessels.



### Description

Direct drive brushless servo motors combined with direct drive high resolution encoders are ensuring the precise and smooth tracking of the iIPSC-MSG.

All axes are sealed. The selected materials are corrosion resistant and surface treated to withstand harsh land based, airborne or shipboard environmental conditions. Due to its open architecture, the instrument can be equipped with all kinds of cameras (e.g. ZEISS™ ATTICA or other cooled thermal imagers or micro bolometers, daylight cameras and laser range finders).

iMAR Navigation GmbH, located in Germany, is designer, manufacturer and system integrator of the entire iIPSC-MSG (mechanics, electronics, gyro stabilization, INS/GNSS data fusion and motion control). Customer specific adaptations can be provided on request.

### Options

- integrated roll axis assembly enabling 3 DOF stabilization.
- iOET<sup>2</sup> Opto Electronic Target Tracking for Auto Video Tracking (with multi target capability and fast 50 measurements / second).
- Dynamic gyro stabilization with integrated INS/GPS positioning including true north referencing and geo-referencing for target localization with sub-decimeter performance (iNAT-RQT, iNAT-FSLG, iNAT-M200 etc.).
- Optional spring isolated base plate to prevent high frequency environmental disturbance from the instrument.
- Window cleaning utility (wiper); water cooling for payload.



## Specification Summary

### General Configuration

Payload:	customer specific or standard sensors (see separate datasheet "iIPSC Payload Selection")
Payload weight, nominal:	60 kg on centered, balanced platform, 130 kg with reduced dynamics
Payload Signals:	Slip rings for power supply, video and discretes, fiber optic transmission for signals and video, adaptable according to application requests
Power Consumption:	up to 3'000 W, 115...235 VAC (depends on acceleration)
Platform Weight:	250 kg plus payload (depends on options)

### Performance

	<u>Azimuth</u>	<u>Elevation</u>
Angular freedom (deg) Position	continuous	continuous
<ul style="list-style-type: none"> <li>• encoder resolution</li> <li>• resolution shaft</li> <li>• repeatability (static)</li> </ul>	better 20 bit < 5 arcsec < 100 µrad	better 20 bit < 5 arcsec < 100 µrad
Rate (deg/sec) [other TBD]	> ±100 / ±300	> ±100 / ±300
Acceleration (deg/sec <sup>2</sup> )	> ±200	> ±200 [60 kg payload]
Acceleration (deg/sec <sup>2</sup> )	> ±40	> ±40 [130 kg payload]
Torque cont./peak (Nm)	150/300	25/135
Nonorthogonality (arcsec)	<100	<100

### Environment Operating Temperature

-20 °C to +55 °C (other on request)  
Altitude up to 4'000 m above sea level or tbd

### Gyro Stabilization (option)

Vibration, Shock, EMI, EMC  
Stabilization Performance

MIL-STD810F, MIL-STD461E  
iNAT-RQT: < 200 µrad abs. roll/pitch stabilization  
< 1 mrad abs. heading stabilization  
< 50 µrad relative stabilization

### Geo-Referencing (option)

Position and Attitude Performance

iNAT-FSSG-01: < 200 µrad relative stabilization  
< 0.05 m, 0.02 deg roll/pitch, 0.03 deg heading

### True North Capability (option)

True Heading Performance

< 0.3 deg rms with dual antenna GNSS setup

### Video Target Tracker

Stabilization Feedback iOET<sup>2</sup>: 50 Hz, video  
target tracking, image blending (option)

### Command / Remote Control

via CAN or RS232/422 or Ethernet or/and  
joystick (see iMAR's iSCU interface)

### Payload

The system can be delivered with special  
adaptation to customer's pay-  
load. Payload  
can be provided  
by the customer  
or by iMAR and  
integrated at  
iMAR facilities.

