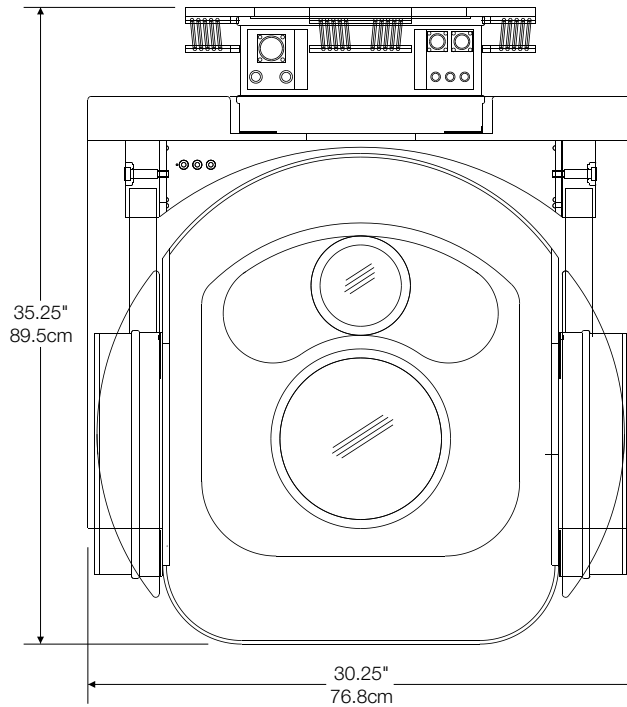
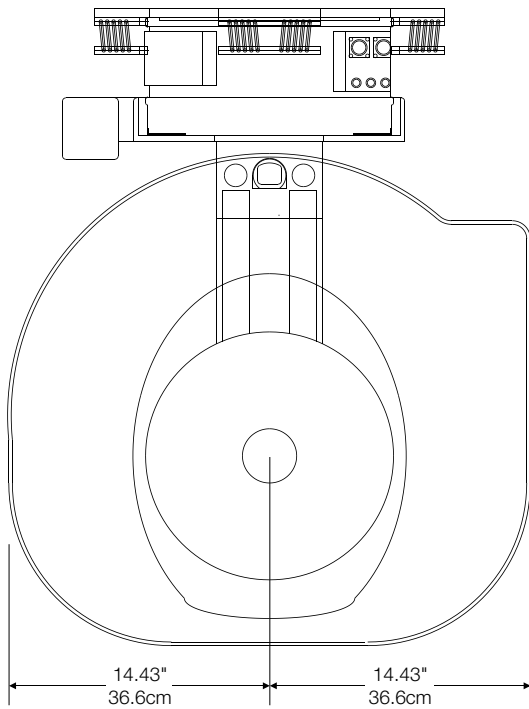


GYRON

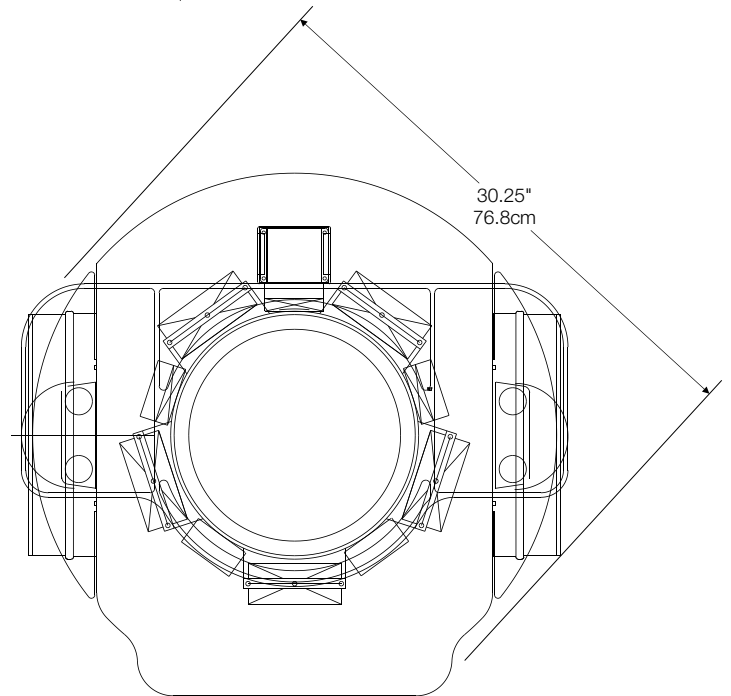
DUAL SENSOR GIMBAL



FRONT VIEW



SIDE VIEW



TOP VIEW

SPECIFICATIONS & DETAILS

TURRET:

1. Steering axes: The system has 3 steering axes: Pan (azimuth), tilt (elevation), horizon roll.
2. Angular steering range: The pan (azimuth) axis has 360 degrees of continuous movement. The tilt (elevation) axis has 125 degrees of total movement: 80 degrees below the horizon, and 45 degrees above the horizon.
3. Maximum slew rate in degrees per second: 60
4. Steering modes available: The steering of the gimbal is controlled via non-displacement type pressure sensitive joysticks.
5. Line of site jitter in micro radians: 10 or better
6. Axes of stabilization: Five axes of stabilization are incorporated: 2 for pan, 2 for tilt, and 1 for roll.
7. Gyro types: A two-channel fiber optic gyro package stabilizes the pan and tilt axes. The roll axis is stabilized by a quartz rate sensor.
8. Drive motor type: The outer pan and tilt gimbals utilize direct-drive torque motors. There is no gearing in this drive system. The inner pan and tilt gimbals utilize voice-coil type drivers; again there is no gearing or wear. The roll axis utilizes a torque motor driving through a ladder-type chain drive system.
9. Turret weight in pounds: 225 (approximate)
10. Turret dimension in inches: 35" quasi-spherical (approximate)
11. Operating temperatures in °C: Minimum: -30, maximum: +45
12. Nominal operating temperature in °C: +24
13. Operating altitude in feet: 12,500 MSL
14. Maximum operating airspeed in knots: 120

DAYLIGHT CAMERA:

1. Camera manufacturer & model number: Sony BVP-950 with RMB-150 RCU & CA-530 camera adapter.
Lens manufacturer & model number: Fujinon A-36x14.5 BERD
2. Camera type: Frame interline transfer (FIT) [OHB750WSA]
3. CCD size format: 2/3" x 3 chip, 16:9 / 4:3 switchable
4. CCD sensor width in mm: 9.59 (h) x 5.39 (v) 11 (diag)
5. Lens Focal Length in mm:
 - a. 29 --> 1040 (2x extended)
 - b. 58 --> 2080 (4x extended)
6. Camera resolution: 900 TVL; 1038 (h) x 504 (v) pixels
7. Video standard: NTSC
8. Minimum scene illumination in Lux: 5 Lux at 18db, f/1.4
9. Gain & level adjustments: up to 18db
10. Zoom type: 36x optical
11. Fixed doubler: In-line 2x extender AE20B-1

12. Minimum focus distance in feet: ~6
13. Horizontal field of view:
 - a. 29mm = 16.88 deg. (wide, 2x)
 - b. 1040mm = 0.48 deg. (zoomed, 2x)
 - c. 2080mm = 0.24 deg. (zoomed, 2x + 2x)
14. Focus system: Servo motor, controlled by operator's desk.

INFRARED CAMERA:

1. Camera manufacturer: Indigo Systems Model Phoenix InSb 320x256 camera with real time imaging electronics (RTIE) and an f/4.1 cold shield.
2. Camera type: Cooled InSb, staring FPA technology
3. Camera resolution: 320 x 256 based on a 30 micron pixel
4. Lens focal length in mm: Tfov f/4 lens, i.e. 60-180-500mm
5. Optional sensor: Cooled InSb, 640 x 512 based on a 25 micron pixel
6. Pixel size in microns: 30; sensor width in mm: 9.
7. Video polarity: White=hot or black=hot, user selectable in real time
8. Video standard: NTSC
9. Cooling: 1/3 watt Split-Stirling closed cycle cooler
10. Cool down time: <10 min guaranteed, 6 min typical
11. NEDT in Kelvin: <0.025K guaranteed, ~0.015K typical
12. Calibration: Calibration is analogous to non-uniformity correction and is set at the factory. However, both 1-point and 2-point internal and external non-uniformity calibrations are supported through the RS-232 computer interface. Please note that the Phoenix family of cameras cannot be calibrated to measure temperature.
13. Gain & level adjustment: The Phoenix camera supports both manual and automatic gain and level adjustment. This is easily controlled from the user interface that comes with the system.
14. Nominal wavelength: 3-5 microns
15. Zoom type: There is no zoom capability with this system, however, the lens proposed here offers three separate fields of view. See # 4 above.
16. Minimum focus distance in feet:
 - a. 500 mm position: ~300 ft
 - b. 180 mm position: ~60 ft
 - c. 60mm position: ~6 ft
17. Horizontal fields-of-view:
 - a. 500 mm position: 1.1 degree
 - b. 180 mm position: 3.1 degree
 - c. 60 mm position: 9.1 degree
18. Focus system: Motor controlled via RS-232 interface



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