

Thermal imaging cameras with temperature measurement capabilities for airborne applications

Corona 350

Gyro-Stabilized Power Line Inspection System



Equipped with different camera types the Corona 350 can easily detect both corona and hot-spots.

The Corona 350 is a gyro-stabilized gymbal containing four different cameras: an Ultraviolet camera for corona detection, a thermal imaging camera for detecting hot-spots in powerlines which can lead to costly breakdowns, a visual light camera and a digital frame camera. The Corona 350 is the ideal instrument for aerial power line inspections.

The Corona 350 IR inspection system offers utility companies a complete solution for the inspection and maintenance of transmission lines, distribution and substations. The thermal imaging camera and UV technologies are complementary and are an ideal combination for setting up a well established predictive maintenance program.

Lightweight high stiffness composite body

The gymbal is build from high stiffness composite materials and aluminum inner structure insuring the lowest weight possible.

4 axis active stabilization

The design is four axis active gyro-stabilized based upon very low drift fiber-optic gyroscopes and a digital servo motor control system and a patented two axis linear isolator. This unique design offers outstanding stability, ensuring easy steering and accurate imaging independent of aircraft movements.

GPS

GPS data is stored as part of each captured image file thus permitting geo-referencing of fault locations.

Ultraviolet camera detects Corona in broad daylight

The corona detection camera is capable of detecting and producing video images of the

energy generated by the corona phenomena. The camera is fully solar-blind and can visualize corona in full daytime without being affected by sun radiation. Corona and arcing occur by stress of the electric field which is not current dependent and therefore can only be revealed by UV inspection.

Radiometric Infrared camera

A radiometric thermal imaging camera allows reading temperature values from the image. It can easily identify problems where the fault is apparent as a change in temperature. Potential defects will be mainly exhibited as hot spots and thermal gradients which will not be revealed by UV inspections.

Advanced Infrared software

The Ethernet interface can transfer 16-bit radiometric data directly into a ruggedized PC for post-flight analysis of captured infrared images. The optional FLIR Reporter software permits retrieval and analysis of IR images

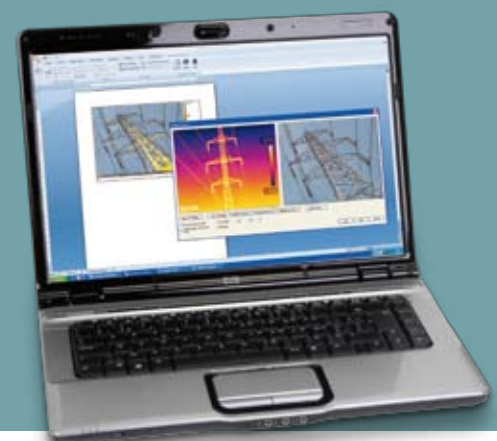
and temperature data. It includes temperature display and analysis functions such as isotherms, line profiles, area histograms, and much more.

Vilga Tracker available

The Corona 350 can host the Vilga video processor. It offers video tracking from the Corona 350. Multiple algorithms are available and selectable by external commands amongst which, Centroid, Correlation, Combined and Scene.

EASA certified installations

FLIR Systems PolyTech AB is a certified Part 21 and Part 145 organization being able to issue release certificates of airworthiness (EASA Form 1) for its products for the most popular helicopter models currently operating worldwide.



Corona 350



Technical specifications

GIMBAL SPECIFICATIONS

Active Gyro-stabilization	4 axis stabilization
Field of Regard	Elevation: +20° to -120° Azimuth: +360° continuous
Maximum Slew Rate	60°/sec.
Maximum Slew Acceleration	>200°/sec/sec
Diameter	13.8 in. (350 mm)
Height	18.8 in. (478 mm)
Weight (w/cameras and lens)	59.5 lbs. (27 kg)
Input Voltage	22 to 30 VDC 10 amps
Power Consumption	< 150 watts

ENVIRONMENTAL SPECIFICATIONS

Standards	RTCA DO-160E
Operating Temperature	-20°C to +40°C

UV CORONA DETECTION CAMERA & LENS

UV Sensitivity	8 x 10-18 watt/cm ²
Field of view	8° x 6°
Optical channels	UV and visible channels overlaid
Focus	Manual or automatic
Visible channel	Synchronized with UV channel
Zoom Ratio	25:1 optical

INFRARED CAMERA & LENS

Detector Technology	Focal Plane Array, uncooled microbolometer
Detector Size	640 x 480 pixels
Spectral Wavelength	7.5-13µm
Sensitivity	45mK @ 30°C
Temperature Ranges	-40°F to 2732°F (-40°C to +1500°C) in 3 ranges
Accuracy	±1°C or ±1%
Frame Rate	25Hz (PAL) or 30Hz (NTSC)
Field of view	12° (H) x 9° (V)
Focus	Manual or automatic

COLOR TV CAMERA & LENS

Detector Technology	Color CCD EXview HAD
Number of Pixels	Approximately 380 000 (NTSC), 440 000 (PAL)
Signal-to-Noise Ratio	>50 dB
Zoom	18 x optical, 2x electronic
Field of view	48° Wide to 2.8° Narrow
Focus	Manual or automatic

DIGITAL STILL FRAME CAMERA

Image Capture Device	1/1.7" CCD
Number of Pixels	Approx. 14.7 Megapixels
Maximum aperture	f/2.8 (W) - f/4.5 (T)
Focal length	28-140mm (35mm film equivalent)
Digital zoom	20x

* Other FLIR Systems infrared cameras available



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