

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

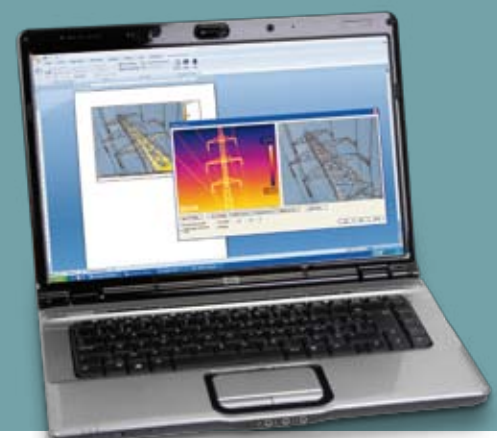
and temperature data. It includes temperature display and analysis functions such as isotherms, line profiles, area histograms, and much more.

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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