



The Ultimate Power Line Inspection Tool

The Kelvin 350III is a gyro-stabilised triple sensor system based around a radiometric thermal image sensor together with a colour video camera and a 14 megapixel still image camera. The system is ideal for thermal imaging inspections and fault detection on power line networks.

This this system offers utility companies a complete solution for the inspection of transmission lines and substations. The thermal imaging camera with radiometric data output provides a well established predictive maintenance program.

4 Axis Active Stabilisation

The design is 4 axis active gyro-stabilisation based upon very low drift fiber optic gyroscopes and a digital servo motor control system and a patented 2 axis linear isolator. This unique design offers outstanding stability of much less than 35 micro radians, ensuring easy steering and accurate imaging independent of aircraft movements.

Radiometric Infrared Sensor

A radiometric thermal image camera allows the accurate temperature measurement of all targets. It can easily identify problems where the fault is apparent as a change in temperature. The onboard computer has the ability to calculate the temperature of faults as the current load passing through the cable and components is increased, allowing engineers to prioritise maintenance.

14 Megapixel Still Image Camera

The system can deliver high resolution GEO-tagged still images of all faults found, allowing engineers to see the condition of components.



GPS Information

GPS data of aircraft position is stored as part of each captured image file for IR and still images. Video is also captured with on screen time/date and GPS position and so delivering geo-referenced fault locations.


Electronic Reporting

Survey results are delivered in PDF format and include both a thermal and still image of faults together with temperature readings and predicted temperatures with current level increase. Faults are referenced with GPS/time/date and where possible structure reference numbers and fault description.

Options

At customers request we can also record the entire survey or faults only using our onboard digital video recorder, these files are stored as Quicktime movies complete with on-screen GPS/time /date and temperature information.







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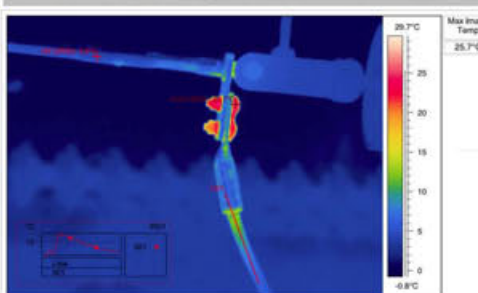
RT Text Comment	Value	Object parameter	Value	
Location	Data removed for confidential reasons		Emissivity	0.92
Equipment	110kV Dead End right ph towards S/S		Object distance	10.0 m
Load	45	Ambient temperature	1.0°C	
Manoiled	Yes	Relative humidity	0.70	



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2005/02/24
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Max Image Temp: 29.7°C
25.7°C
-0.8°C

Observation at 24/02/2005 16:12:36 **MaxFault 84.4 °C**

Fault (SP01) = 25.7°C OK (SP02) = 4.5°C Rise = 21.1 °C Max Load Rise = 58.7 °C

Recommendation Repair as soon as possible.

Notes: Wrong bolts and backing plate have been used on this termination. The bottom of the lug is also showing signs of heating although very small.

SPECIFICATIONS

GIMBAL SPECIFICATIONS

Active Gyro-Stabilisation	4 axsys stabilisation
Elevation	+20° to -120°
Azimuth	+360° continuous
Maximum Slew Rate	60°/sec
Maximum Slew Acceleration	>75°/sec/sec
Diameter	350mm
Height	490mm
Weight [with Meeker adaptor plate]	25kg
Input Voltage	22 - 30vdc 10A
Power Consumption	150 watts
Mount Type	Meeker AFSP-1 Pole Mount

ENVIRONMENTAL SPECIFICATIONS

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

STILL IMAGE CAMERA

Maximum Resolution	14.7 megapixels
Lens	28mm - 140 zoom
Control	RS232 tablet computer control
Data Storage	Tablet computer
Geo Tagging	GPS/time/date in metadata

INFRARED CAMERA

Dectector Technology	Focal Plane Array, uncooled microbolometer
Dectector Size	640 x 480 pixels
Spectral Wavelength	7.5-13µm
Temperature Ranges	-40°F to 932°F (-40°C to +500°C)
Accuracy	±1°C or ±1%
Sensitivity	45mK @ 30°C
Frame Rate	25Hz (PAL)
Field of View	12° (H) x 9° (V)
Focus	Motorized - manual and auto
Outputs	Firewire data and composite video

TV CAMERA

Sensor Type	Single CCD Super HAD
Resolution	Standard definition 720 x 576 pixels (PAL)
Zoom	26x continuous optical