Система для вертолетов и неподвижных крыльев DayCor ROM HD
Технические характеристики

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DayCor® ROM HD

Advanced fiber optic gyro stabilization | Multiple sensors

A powerful high-speed inspection solution for aircraft, equipped with combinations of outstandingly highly sensitive, high definition (HD) sensors in a gyro stabilized payload platform. ROM meets the need for stability, accuracy, functionality, convenience and qualitative data collection. The system incorporates a selection of HD sensors in the ultraviolet, infrared & visible spectral ranges, with a photo camera and LRF. Designed by the RTCA DO 160G environmental standard, DayCor® ROM is a premium choice for aerial inspections to remotely detect faulty electrical components. The collected data includes imaging and radiometric readings of all installed sensors with detailed meta data. ROM can be used for fire detection and with some adjustments for oil spill mapping.

APPLICATIONS: Predictive maintenance | Overhead transmission & distribution lines | Fire detection and mapping | Oil spill detection and mapping

- Fiber Optic Gyro
- High sensitivity to corona
- High flight performance
- Set for high speed
- FAA | EASA conformity
- HD video & stills
- Radiometric readings
- Auto tracking
- Geo pointing
- Geo Lock
- RTCA DO 160G avionic std.

HIGH SPEED UV INSPECTION

High sensitivity to UV enables the detection and capture of distant corona discharge during high speed flight of 100 km/h without smearing the output image and without missing corona events.

STABILIZED PAYLOAD

Uniquely designed, the payload has high precision 4-axis fiber optic stabilizing gyro and passive vibration to ensure superior stabilization. Special care is taken to ensure noise-free, crystal clear image transfer. Fits for most FAA or EASA approved aircraft mounts.

GIMBAL REMOTE CONTROL

Ergonomically designed with integrated high resolution (HR) touch screen and an intuitive menu to control both the sensors and the turret. Extra fine tuning and saved preset setup profiles add flexibility and agility.

SUPERIOR PERFORMANCE

With high accuracy, excellent image quality and long wave solar reflection immunity ROM provides an outstanding performance for most applications. The system is customized per specific customers' needs and can include various combinations of inspection technologies.

EASY INSTALLATION & LOW WEIGHT

Gimbals are made of a lightweight structure and composite covers. Installation is simple and standard.

VIDEO RECORDING & STORING

Throughout the flight videos from the sensors are displayed on a spilt-windows monitor and recorded onto findings can be recorded and stored onto a portable memory. Recordings may include radiometric readings of: corona strength, hot spots temperatures, GPS, date & time, pressure gauge and humidity. Audio narration & annotations can also be added.

DATA MANAGEMENT SYSTEM

Data Management System provides pinpointed information about the scanned grid such as identity of each installation, past performance, past recorded events, failures, route, etc. Data is retrieved during flight and displayed synchronized with geographical and/or topographical maps.

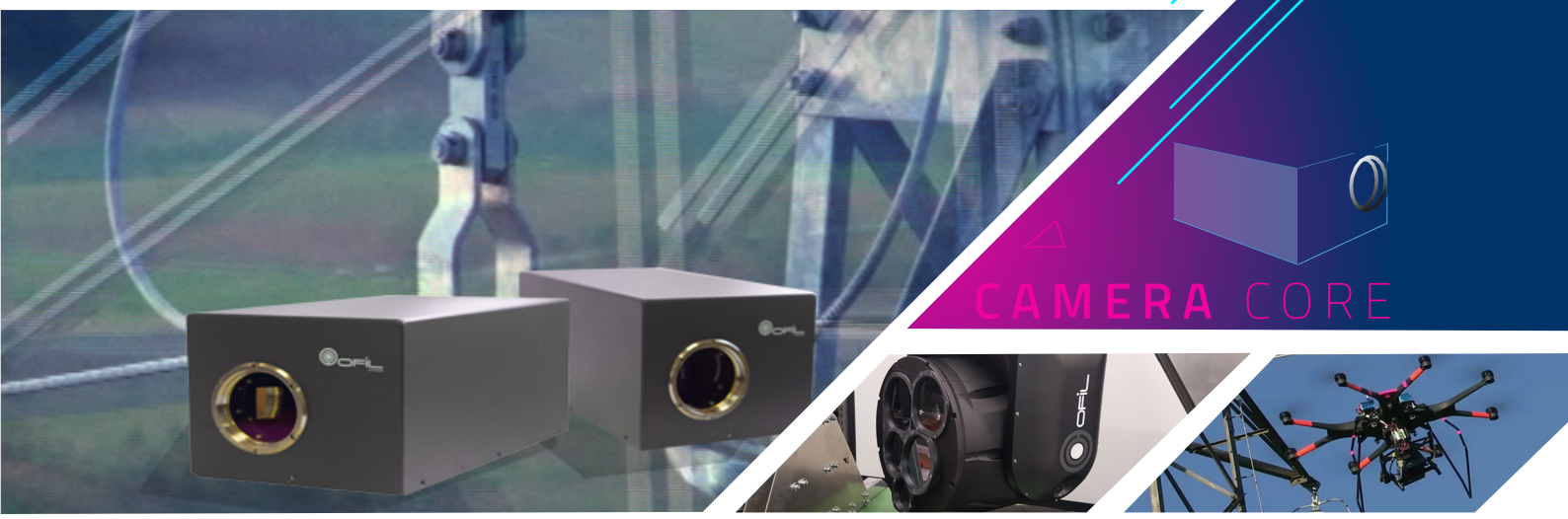
DAYCOR® TECHNOLOGY INSIDE

With DayCor® inside, the UV camera is fully solar blinded allowing operation under all daylight conditions [Registered Patent EP1112459B1].

TECHNICAL SPECIFICATIONS (ACCOMMODATED TO CUSTOMERS' REQUIREMENTS)

TCU - TURRET CAMERA UNIT & CONTROL UNITS (ACCOMMODATED TO CUSTOMER'S REQUIREMENTS)	
Type	Four (4)* axis active steerable gyro-stabilized gimbal
Stabilization	<10 µRad
Weight	Approx. 32.5Kg (71.7lb) (depending on configuration))
Power Requirements	20-30 VDC, 395W (depending on configuration)
Environmental Specs	RTCA – DO160 G
Coverage Az | Coverage El	Full 360° Continuous | +9° to -189° (can be increased for final)
Gimbal Remote Control - GCU	One unit for the gimbaled turret and sensors with integrated 7" high resolution touch screen, extra fine tuning knob and preset setup profiles
Storage and Operation Temp	Storage -20°C up to 60°C | -4°F up to 140°F Operation -20°C up to 55°C | -4°F up to 131°F
ROM-EYE HD UV - VISIBLE BI-SPECTRAL CAMERA	
Minimum Discharge Detection	1pC @ 15 meters (DIN EN 60270 (VDE 0340):2001-08)
Minimum RIV Detection	3.6dBµV (RIV) @1MHz @10m (NEMA107-1987)
Minimum Sensitivity to UV	$1.9x10^{-18}$ watt/cm^2
Field of View H x V	H: 10° - 1.6° V: 5.6°-0.9° Synchronized with UV channel, optic & digital, continuous
Detector Life Span	No degradation
Focus	Auto focus, 3m to infinity
UV/Visible Overlay Accuracy	Better than 1 mRad
Video Resolution & Interface	HD (1280x720px), 60Hz, HDMI
IR CAMERA (ACCOMMODATED TO CUSTOMER'S REQUIREMENTS)	
FOV	16°x 12°
Detector Array Size	1024x768 pixels
Temperature Resolution @ 30°C	< 0.02K (*)
Spectral Range	7.5-14µm
Digital Zoom	Yes
Focus	Manual & auto focus
Temp. Measuring Range	(-40 ... 2,000) °C (*)
Temp. Accuracy of Reading	+/-1°C or +/- 1% (*)
VIDEO CAMERA (ACCOMMODATED TO CUSTOMER'S REQUIREMENTS)	
Image Sensor	1/2.8 Exmor R CMOS type
Picture Quality	2.13 Mega pixels (PAL, NTSC)
Resolution	1920x1080p
Lens	30x Optical Zoom, f=4.3 mm to 129mm (tele) F1.6 to F4.7
Digital Zoom	12x (360x with optical zoom)
Min. Illumination	0.1 Lux (shutter speed 1/30 s)
Viewing angle	63.7° (wide end) to 2.3° (tele end)
PHOTO CAMERA (ACCOMMODATED TO CUSTOMER'S REQUIREMENTS)	
Detector	Exmore R CMOS sensor
Resolution	Approx. 42.4 mega pixels (effective), Apporx. 43.6 (Total)
Lens	Zoom 70-200mm F2.8 GM OSS
Continuous Shooting	Up to 10 fps including GPS tagging
Focus	Fast Hybrid AF (phase-detection AF/contrast-detection AF)
Focal Length	70-200 mm

(*) Depending on Model



DayCor®

ROMEYE HD

High Definitions HD Corona Camera Core

ROMeye[HD] is a corona imager that incorporates a UVc detector and a HD visible camera that enable seeing and recording corona discharges in daylight. Corona, which is invisible to the human eye, can be seen only with bi-spectral UV-Visible corona cameras. ROMeye[HD] is a high definition, highly sensitive bi-spectral corona camera with Ofil's proprietary DayCor® technology inside, capable of pinpointing corona sources, visualizing them, recording and transmitting in real time to a remote receiver or a monitor. Due to its small dimensions and high performance, ROMeye[HD] fits well into gimbaled payloads and is an excellent choice for fast moving airborne inspections of overhead high voltage grid lines. ROMeye[HD] assists in the diagnosis of medium/high voltage systems by locating deficiencies that are related to electrical fields, or caused by bad design, structural & mechanical problems, contamination, eroded insulation, loss of hydrophobicity and other. ROMeye[HD] fits monitoring and surveillance systems mounted on fixed mounts. Users of ROMeye[HD] benefit from fast results, high resolution video clips, reliable data & pinpointed information, in real time.

- » HD camera
- » Light weight
- » Recording & playback
- » Highest sensitivity to UV
- » Built-in recorder
- » Bi-Spectral UV-Visible
- » Fit for speedy inspections
- » Corona events counting
- » Powerful optical zoom
- » Camera core for OEM

HIGH SPEED INSPECTION

ROMeye[HD] transmits HD video on-the-fly, without image processing nor frames integration. The resulted videos are sharp, showing pinpointed information without smearing even during high speed motion.

EASY INSTALLATION

ROMeye[HD] can be mounted onto existing gimbals or on any standard ¼" thread tripod mount . Installation is simple and standard.

HD VIDEO RECORDING & STORING

ROMeye[HD] records High Definition videos with corona events count, date & time and (if attached) external GPS. Videos are stored internally onto a portable memory and transmitted to a remote monitor.

DAYCOR® TECHNOLOGY INSIDE

ROMeye[HD] is a solar blind bi-spectral UV-Visible camera that incorporates Ofil's exclusive proprietary DayCor® technology [Registered Patent EP1112459B1]. ROMeye[HD] provides reliable accurate data, showing the original occurrences of corona anchored to the emitters, operating continuously without overheating.

REMOTELY CONTROLLED

ROMeye[HD] is controlled through a set of communication commands: RS232, Ethernet or Wi-Fi.

ENHANCED INSPECTION FEATURES

ROMeye[HD] has a powerful optical and digital zoom for both visible & ultraviolet spectral ranges, and interchangeable fields-of-views.

TECHNICAL SPECIFICATIONS

ULTRA VIOLET (UV) - OPTICAL PROPERTIES	
Sunlight Rejection	Absolute – at all sunlight and all weather conditions, target can be inspected with the sun in the field of view
Minimum Discharge Detection	1pC @ 15 m, Innogy SE - Eurotest, Test Regulation IEC 60270:2000 PD Measurement
Minimum UV Sensitivity	1.9 x 10^{-18} watt/cm²
Minimum RIV Detection	3.6dBµV (RIV) @1MHz@10m
Fields of View H x V	H: 10° - 1.6° | V: 5.6°-0.9° Continuous. UV & visible channels synchronized
Focus	Full manual and auto focus for both UV & Visible channels
UV Zoom	2x (Opt.), 6.25x (Dig.), Slaved to the visible channel, continuous zoom
UV Frames Integration	On | Off
UV Display Colors	Poly chromatic: Red, Green, White, Black, Yellow
Spectral Range	240-280nm
VISIBLE - OPTICAL CONFIGURATION	
UV/Visible Overlay Accuracy	Deviation < 1 miliradian
Minimum Visible Light Sensitivity	0.07Lux
Fields of View	H: 10° - 1.6° | V: 5.6°-0.9° Continuous. UV & visible channels synchronized
Visible Zoom	25x optical & digital, continuous
Noise Suppression	Yes
Focus Range	0.6m | 1.96ft to infinity, automatic & manual
DATA STORAGE	
Video Out Standard	HD 1280x720p 60fps
Video Format	MOV
Image Format	JPG
Storage	FAT-32, exFAT
I/O CONTROLS AND OPERATION	
Video Interface	HDMI
Control Functions	1GB Ethernet, RS232, USB, Inbound/Outbound, Wi-Fi
UV & Visible Output Combination Modes	Combine (UV & Visible), UV only, visible only
PHYSICAL CHARACTERISTICS & POWER SOURCE	
Storage and Operation Temp	-20°C up to +55°C | -4°F up to +131°F
Block Camera Weight	1650 gr | 3.10lb
Camera Core Weight	1265 gr | 2.12lb
Camera with Enclosure Dimensions L x W x H	L259 x W128 x H117 mm | L10.2" x W5.03" x H4.6"
Camera Core Dimensions L x W x H	L255 x W124 x H87mm | L 10" x W4.88" x H3.42"
Nominal Power Supply & Consumption	12V DC, 12 Watts
Vibration and Shock	ETSI EN 300 019-2-5 V3.0.0 (2002-12), IEC 60068-2-64
ACCESSORIES	
CoronaWise - Corona Management Software; Inspection Guide	

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