

Corona Detection



What is corona?

Corona is a luminous discharge due to air ionization surrounding an insulator in which exists a critical voltage gradient. Corona causes insulation deterioration, therefore, failure of components becomes more probable as the component degrades. Since reliability of power systems is related to corona discharge, all power system components should be tested through corona testing to verify that this parameter is minimized. How does Ofil's corona camera work?

Corona is emitted in the Ultra Violet spectral range, which is invisible to the human eye. To be able to see corona in daytime Ofil's camera system uses two imaging channels: UV and visible. The outputs of the two channels are overlaid to yield the image of the corona in its real and exact visible scene.

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Where can corona camera save me time and money?

- Outside electrical distribution for utilities (transformers, bushings, insulators, transmission & distributions overhead lines, capacitor banks, switches supports, circuit breakers, arresters, others).
- Inside electrical distribution and service (switchgear, generators, electrical motors).

Why daytime corona imaging?

Corona imaging offers the ability to pinpoint the exact corona source location, and display the corona and its emitter. You will be able to differentiate between nearby corona sources and qualify their severity. To reveal the corona source in its early stage you need to use a high sensitive corona camera, like Ofil range of cameras.



Why can't I use an IR camera for corona inspection?

Corona phenomenon is a voltage related effect resulting from partial insulation failures, starting from 6Kv. Corona doesn't generate heat hence IR cameras do not pick corona. While IR cameras are current related indicators, corona cameras are complementary technology revealing future insulation failures, offering users comprehensive overview of the electric grid status. By nature, the UVc light doesn't penetrate to earth. The corona camera exhibits only the desired corona's radiation emitted from the source of failure. Daytime corona cameras are non-destructive, remote sensing instruments, and are safer to use in hazardous scene. The camera's features that include a large LCD allow keeping eye contact with the surroundings, as needed for safety inspection.

Ofil's range of products includes: Sensors and Imaging systems with incorporated in-house solar blind filters and optics.

- Sensors - Tailor-made and off-the-shelf optical sensors.
- Imaging systems - Bi-spectral systems with DayCor® technology embedded, used to detect weak UV discharges such as corona and arcing, pinpoint and record them for reporting and documentation. Platforms: airborne, vehicle mounted, handheld.
- Brand Names: Luminar, Superb, UVollé, ROM, ROMpact, Ranger, Rail.
- Architectures: Stand alone; Networked with command and control centers; Embedded systems/

What Ofil has to Offer?

Parameter	Ofil's Corona Camera
Easy to use technology	Go/No go indication
Quantitative feedback	<1000 1000-5000 >5000photon/min
Easy finding analysis	Low Medium High corona severity levels
Simple to use	Minimum training required
Reliability	EPRI acknowledgment, customer experience
Price	The LOWEST entrance ticket to corona inspection world

About Ofil:

Ofil develops designs, manufactures and markets a range of high-tech products and tailor made solutions, using proprietary DayCor® UV Band-pass technology that allows detection of UV signals in full daylight. Established in Israel in 1993 as a start-up company and funded by the chief Israeli scientist, Ofil is now a mature manufacturing company headquartered in Israel with a subsidiary company in North America Ofil-USA. Ofil keeps on with R&D activities through a highly skilled taskforce. Ofil carries on projects starting with blue prints up to prototyping, testing and mass production.

