NL CAMERA

Datasheet version 211104
Compatible with SW version 21H2

Quick overview of the most critical problems early on

- Detects problems in power grid components before they start to heat up
- No direct line of sight is required

Saves money and improves energy efficiency

- Pinpoints tiny leaks and shows leak size and cost estimate
- More accurate and faster than other leak detectors and methods

Speeds up audits & requires minimal training

- Light, hand-held, automatically displays the detected partial discharge (PD) locations on its intuitive user interface
- Scans large areas quickly

Machine learning-powered NL Analytics

- Locates and distinguishes PDs from other sounds
- Classifies PD type and severity
- Suggests further corrective actions
- Easy reporting tool for sharing repair and maintenance needs
- ISO 5001 compatible reports for air leaks

The industry-leading NL Camera is an intelligent device for detecting and localizing air leaks in compressed air systems and partial discharges in high- and medium-voltage systems. The lightweight, easy-to-use NL Camera automatically locates problems by the often inaudible ultrasonic sound that they emit, even in loud industrial environments.

The 124 state-of-the-art microphones of the NL Camera allow leak detection in a wide field of view and from a long range away. Finding leaks is up to 10 times faster than with traditional methods. The camera clearly displays the real-time leak size and associated cost estimate on the screen.

The NL Camera locates 50 and 60 Hz partial discharges (PD) automatically in the power grid from more than 130 meters away. It also shows the phase-resolved partial discharge (PRPD) pattern on the device.

The NL Camera analyses findings in real time. Users can also upload the data to the NL Cloud service included in the package for deeper analysis and reporting. For partial discharges, this includes PD type classification, severity assessment, and recommended actions. The NL Camera Viewer and NL Camera Viewer Pro offline software are available for users where WiFi is unavailable.

Technical Specifications

Acoustic Specifications

Acoustic measurement	124 low-noise MEMS microphones, real-time sound visualisation
Dynamic range, low limit	Below -15 dB (frequency-dependent)
Dynamic range, high limit	120 dB (frequency-dependent)
Bandwidth	2–65 kHz
Distance	From 0.3 m (1.0 ft) up to and above 130 m (430 ft)
Compressed air leak detection	In typical industrial environment: >0.032 l/min @ 3 bar from 3 m (9.8 ft) >0.05 l/min @ 3 bar from 10 m (32.8 ft) Absolute minimum detection in a quiet environment: 0.016 l/min @ 1.2 bar from 0.3 m (1.0 ft)
SF6 leak detection	Under optimal conditions, an SF6 leak of 0.8 kg (1.7 lb) per day can be detected from a distance of 10 m (32.8 ft)

User Interface

Display	5 in, 800 × 480 resistive touchscreen
Brightness	1000 cd/m2 (adjustable)
Snapshot resolution	800 x 480
Frame rate	25 fps (optical image) / 30 fps (acoustic image)
Field of view	62.2° x 48.8°
Zoom	2x digital zoom

Communication and Data Storage

Wireless data transfer	IEEE 802.11.b/g/n/ac
Storage, internal	32 GB/999 snapshots
Storage, external	8 GB USB mass storage, 500 snapshots (typical)

Environmental

Operating temperature	-10°C – +50°C (14°F – 122°F)
Storage temperature	-20 °C – +70 °C (-4 °F – 158 °F)
Charging temperature	0°C – +40°C (32°F – 104°F)
Humidity	Recommended 0–90%
Ingress Protection	IP51

Physical data

Camera size & weight	273 × 170 × 125 mm (10.7 × 6.7 × 4.9 in) 980 g (2.2 lb)
Total weight with Tracer battery	1.9 kg (4.3 lb)
Total weight with RRC2040 battery	1.2 kg (2.7 lb)

NL Analytics & Features

Discharge localisation & recognition	Automatic detection 50/60 Hz without direct line of sight
Discharge classification & analysis	PRPD pattern In the NL Cloud and NL Camera Viewer Pro: negative & positive corona, floating discharge, surface or internal discharge
Severity assessment	In the NL Cloud and NL Camera Viewer Pro software: recommends actions to fix the issue
Leak detection & localization	Automatic, real-time leak recognition
Leak size & cost estimate	Automatic, real-time, on-device
ISO5001-compatible reporting	In the NL Cloud and NL Camera Viewer Pro software
Video recording	Up to 5 minutes
Audio recording	Up to 5 minutes
Video resolution	1640 x 1232
Video frame rate	15 fps

Power Specifications

Camera power input	Nominal input voltage: 12 V_{DC} Max input: 15 V_{DC}, 2.5 A
Internal battery	Li-Ion 6 Wh (only for backup purposes)

Battery Option RRC2040

External battery	Li-ion 36.2 Wh, 10.8 V_{DC} Use time over 2 h Max output: 12.6 V, 4.0 A
Battery charger	Input: 100–240 V_{AC} ± 10% ~ 50/60 Hz 1.70 A @ 100 V_{AC} Max output: 19 V_{DC} ± 5%, 3.40 A
Battery size & weight	87 × 65 × 129 mm (3.42 × 2.55 × 5.07 in) 250 g (0.55 lb)

Battery Option Tracer

External battery	LiFePO$_4$ 84 Wh, 12 V_{DC} Use time up to 7 h, charge time 4–6 h Max output: 13.8 V, 4.0 A
Battery charger	Input: 100–240 V_{AC} ~ 50/60 Hz 1.3-1.5 A Max output: 13.8-14.6 V_{DC}, 4 A (depends on the charger provided)
Battery size & weight	90 × 145 × 65 mm (3.5 × 5.7 × 2.6 in) 985 g (2.2 lbs)

Supported Languages

Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Simplified Chinese, Spanish, Swedish, Thai, Traditional Chinese, Turkish, Vietnamese