

Recognoil® 2W

Technical specifications



Description of the device

Recognoil® 2W is a wireless handheld analyser – oil and grease substance fluorescence detector for mobile use. Recognoil® PRO software is supplied with the device. Thanks to the Info-LED panel, the device can be used to check parts even without the need to connect to a PC or tablet - the result is an evaluation of the area according to the OK / NOK criteria.

Areas of application

Recognoil® 2W is commonly used to check the condition of the surface, especially before painting, electroplating, PVD and CVD coating, welding, soldering, gluing or intentional application of oil films during lubrication and preservation.

Principle and output

The essence of the detection principle is the induction of luminescence of contaminants, its capture and subsequent evaluation using the supplied software. The standard output of the measurement is the fluorescence intensity [F.U. - fluorescence units] resp. its mean value relative to the measured area and the image output (fluorescence map) showing the distribution of contamination on the surface of the part.

Operator protection

The protection of the operator against the effects of UV radiation is ensured by closing the measured space by means of a replaceable measuring adapter. This also shades the light from the surrounding environment. If the camera detects an imperfect contact to the surface (ambient light), it will not allow the operator to take a scan. The shape and size of the adapter ensures the correct distance between the scanned surface and the detector. Scanning of complex surfaces, chamfers, small radii and scanning of spatial objects is therefore performed using special adapters in the form of a negative of the scanned surface. Adapters

are produced using a 3D printing method based on data supplied by the customer.

Supplied software

The Recognoil® 2W comes with advanced Recognoil® PRO software, which is used to display scanned areas, but also allows further data processing and contains several unique functions:

- display of image data and measurement results,
- selection of areas of measured areas,
- name of the measurement (sample),
- sorting and searching for files,
- export files (pdf, jpg, txt),
- creation of protocols (photo documentation of parts, image and text notes),
- setting the measurement parameters (exposure type, image quality, etc.),
- conversion of fluorescence units to oil thickness or area concentration,
- detailed statistics,
- setting pre-sets and limits,
- inserting object masks,
- 3D view of the fluorescence map,
- calculation of over-limit pollution,
- calculation of frequency and size of spot contamination,
- possibility of additional implementation of functions according to individual customer requirements. * * additional service

Hardware requirements

The device comes standard with a 10" tabletPC with a durable rubberized cover. However, you can install the supplied software on any device that meets the minimum hardware requirements listed below:

- Intel Atom Quad Core X5-Z8300, 2 GB RAM
- 500 MB free hard disk space
- Operating system Microsoft® Windows 7 / 8 / 8.1 / 10.
- Microsoft .NET Framework 4.5

Communication between the Recognoil® 2W device and the measuring SW takes place

using Wi-Fi (the device forms an access point to which a tabletPC / laptop / PC is connected).

Package contents

The Recognoil® 2W comes in the following basic configuration:

- Durable case IP67,
- Recognoil® 2W device (the body of the device is made using 3D printing),
- Recognoil® PRO Software,
- air blower (dust removal tool)
- measuring adapter,
- optics cover,
- rubber sleeves,
- mini-USB charger cable,
- a 10" TabletPC with durable rubberized cover + charger
- user manual, measurement guide with Recognoil® 2W,
- CE declaration of conformity,
- calibration protocol.



Maintenance requirements

The device must be always stored in the supplied protective packaging, contamination of the active surfaces of the device (optical elements) affects the measurement results! The front of the detector (supplied flat surface adapter) can be removed for cleaning. In this case, cleaning means only removing the dust from optical filters with supplied blower. The surfaces of the Recognoil® 2W near the filters, like the glass filters, must be kept very clean and the operator should never touch it.

Device calibration

The instrument comes with a factory calibration protocol. Reproducible results over a long period of time are ensured if the device is stored and maintained properly. To verify the condition of the device itself, it is possible to order standards and calibration samples.

Warranty and service

The standard 24-month warranty only applies to manufacturing defects of the device, not to normal wear, or, contamination of the device. To ensure stable and reproducible results, we recommend sending the device at least once a year for a regular maintenance (cleaning of optical elements, restoration of the anti-fluorescent coating of active surfaces) and calibration verification (output calibration protocol is included).

Additional services/products

- **Individual SW:** implementation of functions according to the customer's own requirements
- **Equipment modifications:** eg. for the possibility of connection to a production line or eg. for inspection of the inner surfaces of pipes
- **Calibration samples:** calibration samples to verify the correct function and condition of the device
- **Service and laboratory calibration of equipment:** cleaning and factory calibration of equipment (recommended once a year)
- **Creation of special adapters:** for the possibility of checking the surface of objects of complex shapes (eg. pipes).
- **Laboratory measurements:** we determine the surface condition of your samples and create a report

Recognoil® 2W - Technical data

Device name:	Recognoil® 2W
Detection method:	non - destructive, optical - non - contact (the device is only placed on the surface of the object)
Function principle:	excitation of oil / grease substances by UV radiation and image evaluation of fluorescence intensity
UV wavelength / power:	365 nm / 1,500 mW
Device dimensions:	130 x 212 x 34 mm
Size of the evaluated area:	20.0 x 13.8 mm
Maximum size of the measured object:	not limited
Digital image resolution:	1536 x 1056 px. / 1 px. corresponds to approx. 13 µm
Measurement and evaluation time:	1 to max. 10 seconds, depending on the type of oil / grease and the properties of the base material
Detection limit:	minimum surface concentration approx. 15 to 70 mg.m ⁻² (approx. 16 to 77 nm of layer thickness), depending on the type of oil / grease and the roughness of the base material, the range can be arbitrarily adapted to layer thicknesses up to approx. 4 - 10 µm
Maximum voltage:	9V DC
Battery:	built-in Li-Ion 3.7V / 3,400 mAh for approx. 700 scans without recharging (depending on exposure time and other settings)
Battery charging:	via USB-Mini, 5V, el. current max. 500 mA
Required hardware:	PC / laptop / tabletPC with Windows operating system 7 / 8/ 10, <i>not designed for Android and Mac operating systems</i>
Supplied software:	Recognoil® PRO - desktop application for MS Windows for operation, setup, evaluation and data management
Type of interface for data transmission:	wireless connection, Wi-Fi - Recognoil® 2W handheld device creates an access point to which a tabletPC / laptop / PC is connected
Device weight:	356 g
Device body material:	PETG, PLA, PA6, the device body is produced using 3D printing
Certification:	CE
Manufacturer:	TechTest, s.r.o. Czech Republic, CZ-55101 Jaromer
Country of origin:	Czech Republic (European Union)