



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX KDB 22.0001X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2023-03-01

Applicant: **Airoptic Sp. z o.o.**  
ul. Rubież 46B  
61-612 Poznań  
**Poland**

Equipment: **GasEye Extractive Ex1 / Ex1 ET**

Optional accessory:

Type of Protection: **Ex pxb; Ex op is**

Marking: Ex op is pxb IIC T<sup>\*</sup> Ga/Gb  
Ex op is pxb IIIC T<sup>\*\*</sup> Da/Db

Approved for issue on behalf of the IECEx  
Certification Body:

**mgr inż. Piotr Madej**

Position:

**Head of ExCB**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**Główny Instytut Górnictwa, Kopalnia Doświadczalna "BARBARA"**  
(Central Mining Institute Experimental Mine "Barbara")  
ul. Podleska 72  
43-190 Mikołów  
**Poland**





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Manufacturer: **AIROPTIC Sp. z o.o.**  
ul. Rubież 46B  
61-612 POZNAŃ  
POLAND  
**Poland**

Manufacturing locations: **AIROPTIC Sp. z o.o.**  
ul. Rubież 46B  
61-612 POZNAŃ  
POLAND  
**Poland**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

#### STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-2:2014](#) Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"  
Edition:6

[IEC 60079-26:2014](#) Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  
Edition:3.0

[IEC 60079-28:2015](#) Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation  
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

#### TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[PL/KDB/ExTR22.0001/00](#)

Quality Assessment Report:

[PL/KDB/QAR19.0001/02](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

### **GasEye Extractive Ex1.**

The GasEye Extractive Ex1 is a versatile gas analyzing tool for industrial process applications. A process gas sample is continuously fed into the analyzer where it is analyzed in real time utilizing laser absorption spectroscopy. It can be configured to operate in the near-infrared (NIR), mid-infrared (MIR) and infrared (IR) wavelength range thereby allowing to analyze the majority of gases of interest in the industrial process monitoring.

### **GasEye Extractive Ex1 ET.**

GasEye Extractive Ex1 ET (with an extended temperature) is a comprehensive tool for gas analysis in industrial processes, which uses the GasEye Extractive Ex1 analyzer with additional equipment. All equipment was installed in an additional enclosure made of stainless steel. The housing has been equipped into a convection heater controlled by a thermostat. The thermostat maintains the temperature inside the housing above 15°C.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

- Temperature class of the **GasEye Extractive Ex1** (T\* for gas) or the maximum surface temperature (T\*\* for dust) depends on the process temperature of the controlled medium. For the temperature of the medium higher than declared maximum ambient temperature the temperature class T\* and the maximum surface temperature T\*\* should be determined in accordance with the manufacturer's manual.
- External parts of the **GasEye Extractive Ex1** made of plastic should be cleaned with a damp cloth, with the addition of antistatic fluids.
- Enclosure of the **GasEye Extractive Ex1** should be installed in a way that prevents electrostatic charging, in accordance with the instructions.
- Temperature class of the **GasEye Extractive Ex1 ET** (T\* for gas) or the maximum surface temperature (T\*\* for dust) depends on the process temperature of the controlled medium. For the temperature of the medium higher than declared maximum ambient temperature the temperature class T\* and the maximum surface temperature T\*\* should be determined in accordance with the manufacturer's manual.
- **GasEye Extractive Ex1 ET** device must be protected against direct sunlight.



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## Equipment (continued):

### Technical parameters:

Voltage Un: 230 VAC (100~240VAC)  
Power consumption: < 300W  
Degree of protection: IP 66  
Ambient temperature: -30°C ÷ +50°C Temperature class T6  
Maximum surface temperature 85°C  
-30°C ÷ +60°C Temperature class T5  
Maximum surface temperature 100°C

Pre-purge time: ≥ 3 min.  
Inlet pressure: 2 bar  
Minimal pressure: not less than 1.4 mbar during continuous system work after initial purging.

## Annex:

[GasEye Extractive IECEx EX1.pdf](#)

## Description:

### GasEye Extractive Ex1

The GasEye Extractive Ex1 is a versatile gas analyzing tool for industrial process applications. A process gas sample is continuously fed into the analyzer where it is analyzed in real time utilizing laser absorption spectroscopy. It can be configured to operate in the near-infrared (NIR), mid-infrared (MIR) and infrared (IR) wavelength range thereby allowing to analyze the majority of gases of interest in the industrial process monitoring.

GasEye Extractive Ex1 utilizes 1 to 8 lasers to analyze one or more gases. The GasEye Extractive Ex1 system is assembled in one stainless-steel wall-mounted enclosure. Gas analysis is carried out in a cuvette installed inside a pressurized enclosure.

### Technical parameters:

Voltage Un:	230 VAC (100~240VAC)	
Power consumption:	< 300W	
Degree of protection:	IP 66	
Ambient temperature:	-30°C ÷ +50°C	Temperature class <b>T6</b> Maximum surface temperature <b>85°C</b>
	-30°C ÷ +60°C	Temperature class <b>T5</b> Maximum surface temperature <b>100°C</b>
Pre-purge time:	≥ 3 min.	
Inlet pressure:	2 bar	
Minimal pressure:	not less than 1.4 mbar during continuous system work after initial purging.	

### GasEye Extractive Ex1 ET

GasEye Extractive Ex1 ET (with an extended temperature) is a comprehensive tool for gas analysis in industrial processes, which uses the GasEye Extractive Ex1 analyzer with additional equipment. All equipment was installed in an additional enclosure made of stainless steel. The housing has been equipped into a convection heater controlled by a thermostat. The thermostat maintains the temperature inside the housing above 15°C.

### Technical parameters:

Voltage Un:	230 VAC (100~240VAC)	
Power consumption:	< 400W	
Degree of protection:	IP 66	
Ambient temperature:	-30°C ÷ +60°C	Temperature class <b>T4</b> Maximum surface temperature <b>135°C</b>
Pre-purge time:	≥ 3 min.	
Inlet pressure:	2 bar	
Minimal pressure:	not less than 1.4 mbar during continuous system work after initial purging.	

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**Additional equipment of the GasEye Extractive Ex1 / Ex1 ET spectrometer system:**

<b>IECEx specification of components</b>				
<b>ID</b>	<b>Name</b>	<b>Manufacturer/Model</b>	<b>Marking</b>	<b>IECEx certificate No.</b>
1	Purging controller	Pepperl+Fuchs / 6500-01-EXT1-PNO-LNO	Ex eb q ib [ib Gb] [pxb Gb] IIC T4 Gb Ex tb ib [ib Db] [pxb Db] IIIC T135°C Db Ex eb q ib [ib Gb] [pyb Gb] IIC T4 Gb Ex tb ib [ib Db] [pyb Db] IIIC T135°C Db	IECEx UL 16.0003X
2	Vent	Pepperl+Fuchs / EPV-6500-07	Ex ib [pxb] IIC T4 Ex ib [pxb] III C T135°C Ex ib [pyb] IIC T4 Ex ib [pyb] III C T135°C	IECEx UL 15.0147X
3	Manifold	Nass magnet / 1259 30 / 5146 Or Nass magnet / 1262 50 / W5146	Ex ia IIC/IIB T6/T4 or Ex ia IIC/IIB T6/T4 Ga Ex tb III C T80 °C/T130 °C Db IP65	IECEx PTB 08.0023 Or IECEx PTB 13.0009
4	Junction box	CE-TEK / CEP 252512	Ex e IIC Gb Ex tb IIIC Db	IECEx EXV 18.0002U
5	Manometer	WIKA / PGT23.100-MZ-BG410Z-NB-LB-D-30ZZ-BZIZ-ZZZZ	Ex ia IIC T6/T5/T4* Gb Ex ia IIIB T85°C/T95°C/T100°C/T135°C* Db	IECEx CML 18.0059X Issue 1
6	Convection type heater	STEGO France SAS / CREx020	Ex db IIC T3/T4/T5 Gb Ex tb IIIC T200°C/T135°C/T100°C Db IP66 Ex db I Mb	IECEx EPS 16.0048X
7	Thermostat	STEGO France SAS / REX 011	Ex db IIC T6 Gb Ex tb III C T85°C Db IP66	IECEx EPS 16.0054X
8	Cable glands	AGRO EX1126.20.140 - M20 EX1126.17.100 - M16 Or Hummel HSK-M-Ex-d 1.622.2000.50 – M20 1.622.1600.50 – M16	Ex db eb IIC Ex ta IIIC or Ex db IIC Gb Ex ta IIIC Da	IECEx PTB 12.0055X Or IECEx KEM 07.0013X
9	Breath drain	Eaton DP-E-3-0-04-s2 Or Pepperl+Fuchs BDRVX-1MBNS.K01	Ex eb I Mb Ex eb IIC Gb Ex tb IIIC Db IP66 or Ex eb IIC Gb Ex tb III C Db IP66	IECEx ITS 16.0014X Or IECEx IMQ 14.0003X
10	Blind plug M12	SKINDICHT BL-M ATEX M12x1,5	Ex eb IIC Ex ta IIIC	IECEx IBE 13.0029x
11	Heated enclosure	Rittal GmbH & Co. KG KEL9408.600	Ex e IIC Gb Ex tb IIIC Db IP66 Alternative Ex eb IIC Ex tb IIIC IP66 Tamb -30°C to +80°C	IECEx PTB 09.0035U