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

Certificate No.:	**IECEx CML 25.0020X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2025-11-14		
Applicant:	**CORTEM S.p.A.** Via Aquileia, 10 – 34070 Villesse (GO) **Italy**		
Equipment:	**Ex Solar Panel series PFV-EX…**		
Optional accessory:			
Type of Protection:	**Increased Safety "eb", Encapsulation "mb", Dust Enclosure "tb"**		
Marking:	Ex eb mb IIC T... Gb Ex tb IIIC T... Db IP66 Ta = -60°C to +** °C Refer to Certificate Annex for Temperature Class and Ambient Temperature Range.		

Approved for issue on behalf of the IECEx Certification Body:	**Stelios Roumbedakis**
Position:	**Certification Manager**
Signature: (for printed version)	S.Roumbedakis
Date: (for printed version)	2025-11-14

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: **IECEx CML 25.0020X**

Date of issue: 2025-11-14

Issue No: 0

Manufacturer: **CORTEM S.p.A.**
Via Aquileia, 10 – 34070 Villesse (GO)
Italy

Manufacturing locations: **CORTEM S.p.A.**
Via Aquileia, 10 – 34070 Villesse (GO)
Italy

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 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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:

GB/CML/ExTR25.0059/00

Quality Assessment Report:

IT/CES/QAR06.0002/19

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Ex Solar Panel series PFV-EX… are suitable for use in explosive atmospheres with flammable gas and vapours of Group IIC and EPL Gb and flammable dust of Group IIIC and EPL Db.

Refer to Certificate Annex for full Product Description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:
See Certificate Annex

Annex:

IECEx CML 25.0020X Annex Issue 0.pdf

Annexe to:	**IECEx CML 25.0020X Issue 0**
Apparatus:	**Ex Solar Panel series PFV-EX…**
Applicant:	**CORTEM S.p.A.**

Description

The Ex Solar Panel series PFV-EX… are suitable for use in explosive atmospheres with flammable gas and vapours of Group IIC and EPL Gb and flammable dust of Group IIIC and EPL Db.

At the rear part, the Solar Panel is provided with:

- "Ex mb" encapsulated enclosures including diodes.
  For the models PFV-Ex-70-12 and PVF-Ex-200-24 : a Type 2 Diode Box glued to the back of the panel which includes 2 "by-pass" diodes encapsulated ("Ex mb" type of protection).
  For the models PVF-Ex-400-24 : Up to 3 Type 1 Diode Boxes glued to the back of the panel. Each box includes one "by-pass" diode encapsulated ("Ex mb" type of protection).
- Integrated cables which shall be connected to a suitable enclosure or connectors covered by a separate certificate as Ex equipment

The models PFV-Ex-70-12, PFV-Ex-200-24, and PFV-Ex-400-24 are considered standard solar panel models. Non-standard models with intermediate power ratings may be supplied, provided they fully comply with the technical requirements and limitations specified in the manufacturer's descriptive documentation.

The Photovoltaic Panels are IP66 rated.

Nomenclature

PFV-Ex- XXX - YY - ZZ

Where:
XXX is the Power.
YY is the Supply Voltage.
ZZ is for other specifications.

Ambient temperature and Temperature Class:

The Solar Panel series PFV-EX… have an ambient temperature range from -60°C to +60°C depending on the temperature class as per the following table:

	Temperature Class					
Max. Ambient Temperature:	**+ 40°C**		**+ 50°C**		**+ 60°C**	
	Gas	**Dust**	**Gas**	**Dust**	**Gas**	**Dust**
PVF-Ex-400-24	T6	T71°C	T6	T81°C	T5	T91°C
PVF-Ex-200-24	T6	T71°C	T6	T81°C	T5	T91°C
PVF-Ex-70-12	T6	T71°C	T6	T81°C	T5	T91°C

Dimensions and features:

Characteristics	PVF-Ex-400-24	PVF-Ex-200-24	PVF-Ex-70-12
Nominal Dimension [mm]	1737 x 1149 x 35	1335 x 785 x 35	935 x 405 x 35
Number of cells	108	54	36

Ratings

Model	Maximum power [W]	Open circuit voltage [V]	Short circuit current [A]	Voltage at Pmax [V]	Current at Pmax [A]	N° of by-pass Diode
PVF-Ex-400-24	400	41.4	12.08	34.5	11.59	3
PVF-Ex-200-24	200	41.6	6.09	34.2	5.85	2
PVF-Ex-70-12	70	23.8	3.77	19.4	3.61	2

Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.

ii. Each unit shall be subjected to routine visual inspections of the encapsulated parts in accordance with IEC 60079-18 Clause 9.1. There shall be no damage evident.

iii. Each unit shall be subjected to routine dielectric strength tests in accordance with IEC 60079-18 Clause 9.2. The test voltage 500V shall be applied between the diode connections and the surface of the diode encapsulant. There shall be no breakdown.

iv. The routine dielectric strength test in accordance with IEC 60079-7 Clause 7.1 shall be performed at 500V between each circuit and earthed metal parts. There shall be no breakdown.

Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

i. The Ex Solar Panel series PFV-EX… shall only be installed in areas of a low risk of mechanical damage.

ii. Due to the possibility of static build up, the enclosure including the by-pass diodes shall only be cleaned with a damp cloth. Refer also to user manual.

iii. The Ex Solar Panel series PFV-EX… shall be completely covered with an opaque material during installation to prevent inadvertent charging of solar cells.

iv. The Ex Solar Panel series PFV-EX… shall be connected to a suitable enclosure or connectors covered by a separate certificate as Ex equipment.

Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK