

### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx INE 13.0075X	issue No.:0	Certificate history:
Status:	Current		
Date of Issue:	2014-01-31	Page 1 of 3	
Applicant:	FEAM Via Mario Pagano, 3 I - 20090 Trezzano sul Italy	Naviglio (MI)	
Electrical Apparatus: Optional accessory:	Lighting fixtures type	EVAC	
Type of Protection:	d and tb		
Marking:	Ex d IIC T6T2 Gb Ex tb IIIC T85°CT2	25°C Db IP66	
Approved for issue on b Certification Body:	ehalf of the IECEx	Thierry HOUEIX	
Position:		Ex Certification Officer	
Signature: (for printed version) Date:		2014-01-31	
2. This certificate is not	chedule may only be repro transferable and remains t nticity of this certificate ma	duced in full. the property of the issuing body. ay be verified by visiting the Official II	ECEx Website.
Certificate issued by:			
Institut Nation	INERIS al de l'Environnement In et des Risques		

BP n2 Parc Technologique ALATA F-60550 Verneuil-En-Halatte France

INERIS

INERIS is accredited by COFRAC under number 5-0045 for certification of products and services (scope of accreditation is available on website www.cofrac.fr)



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Manufacturer:

FEAM

Via Mario Pagano, 3 I - 20090 Trezzano sul Naviglio (MI)

### Additional Manufacturing location(s):

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 electrical apparatus 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: 2011

Explosive atmospheres - Part 0: General requirements

Edition: 6.0

IEC 60079-1: 2007-04

Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

Edition: 6

IEC 60079-31: 2008

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'

Edition: 1

This Certificate does not indicate compliance with electrical 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

FR/INE/ExTR13.0075/00

### Quality Assessment Report:

IT/CES/QAR09.0003/04



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Schedule

### **EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

These lighting fixture made in aluminium alloy are intended to receive different type of lamps. When they are fitted with discharge or certain LED lamps the ballast or the electronic module is installed inside the UNIT PRC covered by IECEx INE 13.0060X or it can be installed inside another enclosure covered by an IECEx certificate for this application the two compartments are separated by a sealed bushing. These lighting fixtures get the dregrees of protection IP66 in accordance with IEC 60529 standard.

### CONDITIONS OF CERTIFICATION: YES as shown below:

The depth engagement of the threaded joints is superior to the value specified in the table of IEC 60079-1 standard.



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### PARAMETERS RELATING TO THE SAFETY

Maximum supply voltage for ballasts or electronic modules:

230V, 240V or 277 V in accordance with the type of ballast or electronic module and

the lamp.

For the different types and powers of lamps see table below.

These Lighting fixtures can be use in the following range ambient temperatures from -20 $^{\circ}$ C or -60 $^{\circ}$ C to +40 $^{\circ}$ C or +60 $^{\circ}$ C.

### MARKING

Marking has to be readable and indelible; it has to include the following indications:

- FEAM
- I 20090 Trezzano sul Naviglio (MI)
- EVAC (\*)
- IECEX INE 13.0075X
- (Serial number)
- Ex d IIC T(\*) Gb
- Ex tb IIIC T(\*) Db IP66
- (\*) < Tamb < (\*)
- · CABLE GLAND: (Type and size)
- WARNINGS: DO NOT OPEN WHEN ENERGIZED

DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

(\*) Type is completed by numbers and letters corresponding to the corresponding to alternatives of execution.

### **ROUTINE EXAMINATIONS AND TESTS**

In accordance with clause 16.1 of the IEC 60079-1 standard each apparatus defined above has to have successfully passed, before delivery, an overpressure test of a period comprised between 10 and 60 seconds under:

- 12.9 bar for using at ambient temperature down to -20°C.
- 14.2 bar for using at ambient temperature down to -60°C.



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Type EVAC100... or EVAC101...

	Ambient		l explosive phere	Cable temperature
Type and power of lamp	temperature range	Gas	Dusts	Capie temperature
	-20°C or-60°C/+40°C	T4	T135°C	N.C
100 W Incandescent	-20°C or-60°C /+60°C	14	1133 C	95°C
400	-20°C or-60°C/+40°C	T4	T135°C	N.C
100 W Halogen	-20°C or-60°C /+60°C	14	1133 C	95°C
40.001.50	-20°C or-60°C/+40°C	Т4	T85°C	N.C
12 W LED	-20°C or-60°C /+60°C	Т6	165 C	N.C
700 W. H. F. H. P. L.	-20°C or-60°C/+40°C	Т3	T140°C	NC
100 W Metal halide	-20°C or-60°C /+60°C	13	T160°C	N.C
201111	-20°C or-60°C/+40°C	T4	T135°C	N.C
80 W Mercury vapour	-20°C or-60°C /+60°C	Т3	T160°C	N.C
	-20°C or-60°C/+40°C	T4	T135°C	N.C
70 W Sodium vapour	-20°C or-60°C /+60°C	14	1133 C	N.C
AE MEL	-20°C or-60°C/+40°C	Т6	T85°C	N.C
15 W Fluorescent	-20°C or-60°C /+60°C	10	103 C	N.C
25 W AC	-20°C or-60°C/+40°C	T6	T85°C	N.C
Incandescent 21 W DC	-20°C or-60°C /+60°C	T5	T95°C	N.C



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### Type EVAC200... or EVAC201...

Town and names of lamp	Ambient		l explosive phere	Cable temperature
Type and power of lamp	temperature range	Gas	Dust	cubic temperature
200 W Incandescent	-20°C or-60°C/+40°C	T4	T135°C	95°
200 W Illications	-20°C or-60°C /+60°C	Т3	T160°C	120°C
440 M DI	-20°C or-60°C/+40°C	Т3	T140°C	95°C
160 W Blended light	-20°C or-60°C /+60°C	13	T160°C	120°C
450 W Halaman	-20°C or-60°C/+40°C	T4	T135°C	N.C.
150 W Halogen	-20°C or-60°C /+60°C	Т3	T160°C	95°C
425 11/11	-20°C or-60°C/+40°C	Т3	T140°C	N.C.
125 W Mercury vapour	-20°C or-60°C /+60°C		T160°C	N.C.
400 W.S. diama wan ayar	-20°C or-60°C/+40°C	Т3	T140°C	N.C.
100 W Sodium vapour	-20°C or-60°C /+60°C	13	T160°C	N.C.
25 W Venen flesh	-20°C or-60°C/+40°C	Т6	T85°C	N.C.
25 W Xenon flash	-20°C or-60°C /+60°C	10	103 C	N.C.
22 W Elyproscopt	-20°C or-60°C/+40°C	Т6	T85°C	N.C.
23 W Fluorescent	-20°C or-60°C /+60°C	16	103 C	N.C.

N.C.: Not Concerned

### Type EVAC 200 LED or EVAC 201 LED

To the second second second	Ambient	Concerned explosive atmosphere		Cable temperature
Type and power of lamp	temperature range	Gas	Dust	Capte temperature
	-20°C or-60°C/+40°C	T5	T85°C	N.C.
95 W LED	-20°C or-60°C /+60°C	T4	T105°C	90°C



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Type EVAC 300 or 301

Type and power of lamp	Ambient		l explosive phere	Cable temperature
Type and power or tamp	temperature range	Gas	Dusts	Cable temperature
300 W Incandescent	-20°C or-60°C/+40°C	T4	T135°C	95°C
300 W incandescent	-20°C or-60°C /+60°C	Т3	T160°C	120°C
250 W Halogen	-20°C or-60°C/+40°C	T4	T135°C	95°C
250 W Hatogen	-20°C or-60°C /+60°C	T3	T160°C	120°C
250 W Sodium vapour	-20°C or-60°C/+40°C	Т3	T160°C	N.C.
230 W Sodium Vapour	-20°C or-60°C /+60°C	13	T190°C	N.C.
250 W Metal halide	-20°C or-60°C/+40°C	Т3	T140°C	N.C.
250 W Metat Hatide	-20°C or-60°C /+60°C		T160°C	
250 W Blended light	-20°C or-60°C/+40°C	Т3	T160°C	95°C
230 W blended tight	-20°C or-60°C /+60°C	13	T190°C	120°C
150 W Metal halide	-20°C or-60°C/+40°C	T4	T135°C	N.C.
150 W Metat Hatide	-20°C or-60°C /+60°C	Т3	T160°C	N.C.
150 W Sodium vapour	-20°C or-60°C/+40°C	T4	T135°C	N.C.
130 W Sodium Vapour	-20°C or-60°C /+60°C	14	1135 C	N.C.
25 W Detallarm	-20°C or-60°C/+40°C	т/	T85°C	N.C.
25 W Rotallarm	-20°C or-60°C /+60°C	Т6	185 C	N.C.
3 x 18W Fluorescent	-20°C or-60°C/+40°C	Т4	T85°C	N.C.
3 x 10 W Fluorescent	-20°C or-60°C /+60°C	T6 T8	100 C	N.C.



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### Type EVAC 500 or 501

Type and power of lamp	Ambient		d explosive sphere	Cable temperature
Type and power or famp	temperature range Gas		Dusts	Cable temperature
500 W Incandescent	-20°C or-60°C/+40°C	Т3	T160°C	120°C
Job W incandescent	-20°C or-60°C /+60°C	13	T190°C	140°C
500 W Blended light	-20°C or-60°C/+40°C	T2	T205°C	140°C
500 W Bleffded tight	-20°C or-60°C /+60°C	12	T225°C	160°C
400 W Morcupy vapour	-20°C or-60°C/+40°C	T3	T190°C	95°C
400 W Mercury vapour	-20°C or-60°C /+60°C	N.A	N.A	N.A.
400 W Sodium vapour	-20°C or-60°C/+40°C	Т3	T190°C	85°C
400 W Sodium Vapour	-20°C or-60°C /+60°C	N.A	N.A	N.A
400 W Metal halide	-20°C or-60°C/+40°C	Т3	T160°C	N.C.
400 W Metat Hatide	-20°C or-60°C /+60°C	13	T190°C	85°C
250 W Mercury vapour	-20°C or-60°C/+40°C	Т3	T160°C	N.C.
250 W Mercury Vapour	-20°C or-60°C /+60°C	13	T190°C	85°C
3 x 36W Fluorescent	-20°C or-60°C/+40°C	T6	T85°C	N.C
2 x 2011 Linoiezceur	-20°C or-60°C /+60°C	T5	183 C	N.C.
60 W Fived or flashing LED	-20°C or-60°C/+40°C	T6	T85°C	N.C
60 W Fixed or flashing LED	-20°C or-60°C /+60°C	T5	100 C	N.C.

N.C.: Not Concerned N.A.: Not authorized



### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

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**IECEX INE 13.0075X** 

Issue No: 1

Certificate history:

Status:

Current

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Issue No. 0 (2014-01-31)

Date of Issue:

2015-07-22

Applicant:

FEAM

Via Mario Pagano, 3

I - 20090 Trezzano sul Naviglio (MI)

Equipment:

Lighting fixtures type EVAC...

Optional accessory:

Type of Protection:

d and tb

Marking:

Ex d IIC T6...T2 Gb

Ex tb IIIC T85°C...T225°C Db IP66

Approved for issue on behalf of the IECEx

Olivier COTTIN

Certification Body:

Position:

Head of Equipment and Corporate Services Unit

Signature:

(for printed version)

Date:

- 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 the Official IECEx Website.

Certificate issued by:

**INERIS** 

Institut National de l'Environnement Industriel et des Risques BP n2

> Parc Technologique ALATA F-60550 Verneuil-En-Halatte France

INERIS



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Manufacturer:

FEAM

Via Mario Pagano, 3

I - 20090 Trezzano sul Naviglio (MI)

Italy

Additional Manufacturing

location(s):

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 electrical apparatus 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: 2011

Explosive atmospheres - Part 0: General requirements

Edition:6.0

IEC 60079-1: 2007-04

Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

Edition:6

IEC 60079-31: 2013

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Edition:2

This Certificate does not indicate compliance with electrical 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:

FR/INE/ExTR13.0075/00

FR/INE/ExTR13.0075/01

Quality Assessment Report:

IT/CES/QAR09.0003/04

IT/CES/QAR09.0003/05





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Schedule

### **EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

These lighting fixture made in aluminium alloy are intended to receive different type of lamps.

When they are fitted with discharge or certain LED lamps the ballast or the electronic module is installed inside the UNIT PRC covered by IECEx INE 13.0060X or it can be installed inside another enclosure covered by an IECEx certificate for this application the two compartments are separated by a sealed bushing.

These lighting fixtures get the dregrees of protection IP66 in accordance with IEC 60529 standard.

### CONDITIONS OF CERTIFICATION: YES as shown below:

The depth engagement of the threaded joints is superior to the value specified in the table of IEC 60079-1 standard.

During the installation, the user will take into consideration that teh window of EVAC 500 LED or EVAC 501 LED underwent only a shock corresponding to an energy of a low risk at 2J.



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### DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

### ISSUE 1:

- Addition of new models type EVAC 500 LED and EVAC 501 LED.
   Possibility to install inside the EVAC 501 the following types of lamps:
- 250 W Sodium vapor.
- 250 W Metal halide.
- Possibility to install inside the EVAC 200 or EVAC 201 the following types of lamps:
- Maxixenon 2J.
- Maxixenon 6J.

### Annex:

IECEx INE 13.0075X\_Annex-01.pdf



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### PARAMETERS RELATING TO THE SAFETY

Maximum supply voltage for ballasts or electronic modules: 230V, 240V or 277 V in accordance with the type of ballast or electronic module and the lamp.

For the different types and powers of lamps see table below.

The Lighting fixture type EVAC 500 LED and EVAC 501 LED can be use in the following range ambient temperatures:

From -20°C to 40°C or 60°C or from -40°C to +40°C or +60°C.

The other Lighting fixture can be use in the following range ambient temperatures:

From -20°C to 40°C or 60°C or from -60°C to +40°C or +60°C.

### MARKING

Marking has to be readable and indelible; it has to include the following indications:

- FEAM
- I 20090 Trezzano Sul Naviglio (MI)
- EVAC (1)
- IECEX INE 13.0075X
- (Serial number)
- Ex d IIC T6...T2 Gb (\*)
- Ex tb IIIC T85°C...T225°C Db IP66 (\*)
- ...°C < Tamb < ...C (2)</li>
- CABLE GLAND: (type and size)
- WARNINGS: DO NOT OPEN WHEN ENERGIZED

DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

- (1) The type is completed by numbers and letters corresponding to the manufacturing variations.
- (2) Range of ambient temperatures if different from -20°C to +40°C.
- (\*) T6...T2 or T85° C...T225° C: For the temperature class see tables below.

### **ROUTINE EXAMINATIONS AND TESTS**

In accordance with clause 16.1 of the IEC 60079-1 standard each apparatus defined above has to have successfully passed, before delivery, an overpressure test of a period comprised between 10 and 60 seconds under:

- 12.3 bar for ambient temperature down to -20°C for type EVAC 500 LED and EVAC 501 LED.
- 17.9 bar for ambient temperature down to -40°C for type EVAC 500 LED and EVAC 501 LED.
- 12.9 bar for ambient temperature down to -20°C for all other types.
- 14.2 bar for ambient temperature down to -60°C for all other types.



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Type EVAC100... or EVAC101...

Type and power of lamp	Ambient		ed explosive osphere	Cable temperature
	temperature range	Gas	Dusts	
100 W Incondessort	-20°C or-60°C/+40°C	T4	22.22.0	N.C
100 W Incandescent	-20°C or-60°C /+60°C	T4	T135°C	95°C
100 W Halagan	-20°C or-60°C/+40°C	T4	TARESC	N.C
100 W Halogen	-20°C or-60°C /+60°C	T4	T135°C	95°C
12 W L ED	-20°C or-60°C/+40°C	T6	T85°C	N.C
12 W LED	-20°C or-60°C /+60°C			N.C
100 W Metal halide	-20°C or-60°C/+40°C	Т3	T140°C	NC
100 W Metat Hatide	-20°C or-60°C /+60°C		T160°C	N.C
80 W Mercury vapor	-20°C or-60°C/+40°C	T4	T135°C	N.C
80 W Mercury Vapor	-20°C or-60°C /+60°C	T3	T160°C	N.C
70 W Sodium vapor	-20°C or-60°C/+40°C	T4	T135°C	N.C
70 W Sodium Vapor	-20°C or-60°C /+60°C	14	1133 C	N.C
15 W Fluorescent	-20°C or-60°C/+40°C	Т6	T85°C	N.C
15 W Habrescent	-20°C or-60°C /+60°C	10	105 C	N.C
25 W AC Incandescent	-20°C or-60°C/+40°C	Т6	T85°C	N.C
21 W DC	-20°C or-60°C /+60°C	T5	T95°C	N.C



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Type EVAC200... or EVAC201...

Type and power of lamp	Ambient		d explosive sphere	Cable temperature
	temperature range	Gas	Dust	
200 111 121 121 121	-20°C or-60°C/+40°C	T4	T135°C	95°C
200 W Incandescent	-20°C or-60°C /+60°C	T3	T160°C	120°C
460 W Blandad light	-20°C or-60°C/+40°C	T2	T140°C	95°C
160 W Blended light	-20°C or-60°C /+60°C	Т3	T160°C	120°C
150 W Halagan	-20°C or-60°C/+40°C	T4	T135°C	N.C
150 W Halogen	-20°C or-60°C /+60°C	T3	T160°C	95°C
12E W Moreum vapor	-20°C or-60°C/+40°C	ТЗ	T140°C	N.C
125 W Mercury vapor	-20°C or-60°C /+60°C		T160°C	N.C
100 W Sodium vapor	-20°C or-60°C/+40°C	Т3	T140°C	N.C
100 W 30didili Vapoi	-20°C or-60°C /+60°C		T160°C	N.C
25 W Xenon flash	-20°C or-60°C/+40°C	Т6	T6 T85°C	N.C
25 W Aerion Itasii	-20°C or-60°C /+60°C	10	183 C	N.C
23 W Fluorescent	-20°C or-60°C/+40°C	Т6	T85°C	N.C
23 W Hubrescent	-20°C or-60°C /+60°C	10	185 C	N.C
Xenon 2J	-20°C or-60°C/+40°C	Т6	T85°C	N.C
Xenon 23	-20°C or-60°C /+60°C	10	183 C	N.C
Maxixenon 2J	-20°C or-60°C/+40°C	Т6	T85°C	N.C
	-20°C or-60°C /+60°C	10	100 0	N.C
Maxixenon 6J	-20°C or-60°C/+40°C	T6	T85°C	N.C
Maxixelloll 00	-20°C or-60°C /+60°C		100 0	N.C

N.C.: Not Concerned

Type EVAC 200 LED or EVAC 201 LED

Type and power of lamp	Ambient	Concerned explosive atmosphere		Cable temperature
	temperature range	Gas Dust	Cable temperature	
05.W150	-20°C or-60°C/+40°C	T5	T85°C	N.C
95 W LED	-20°C or-60°C /+60°C	T4	T105°C	90°C



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Type EVAC 300 or 301

Type and power of lamp	Ambient		ed explosive esphere	Cable temperature
	temperature range	Gas	Dusts	
200 1111	-20°C or-60°C/+40°C	T4	T135°C	95°C
300 W Incandescent	-20°C or-60°C /+60°C	Т3	T160°C	120°C
250 W Halogan	-20°C or-60°C/+40°C	T4	T135°C	95°C
250 W Halogen	-20°C or-60°C /+60°C	T3	T160°C	120°C
2EO W Codium vanor	-20°C or-60°C/+40°C	TO	T160°C	N.C
250 W Sodium vapor	-20°C or-60°C /+60°C	Т3	T190°C	N.C
2EO W Motol bolido	-20°C or-60°C/+40°C	ТЗ	T140°C	N.C
250 W Metal halide	-20°C or-60°C /+60°C		T160°C	
250 W Plandad light	-20°C or-60°C/+40°C	ТЗ	T160°C	95°C
250 W Blended light	-20°C or-60°C /+60°C		T190°C	120°C
1EO W Motol holido	-20°C or-60°C/+40°C	T4	T135°C	N.C
150 W Metal halide	-20°C or-60°C /+60°C	Т3	T160°C	N.C
1EO W Codium vanos	-20°C or-60°C/+40°C		T425%C	11.6
150 W Sodium vapor	-20°C or-60°C /+60°C	T4	T135°C	N.C
25 W Potallarm	-20°C or-60°C/+40°C	т/	TOF°C	NG
25 W Rotallarm	-20°C or-60°C /+60°C	T6	6 T85°C	N.C
2 v 19W Elugragest	-20°C or-60°C/+40°C	т/	TOF°C	11.6
3 x 18W Fluorescent	-20°C or-60°C /+60°C	T6	T85°C	N.C



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Type EVAC 500 or 501

Type and power of lamp	Ambient		ed explosive osphere	Cable temperature
	temperature range	Gas	Dusts	cable temperature
	-20°C or-60°C/+40°C	T3	T160°C	120°C
500 W Incandescent	-20°C or-60°C /+60°C	13	T190°C	140°C
EOO W Blanded light	-20°C or-60°C/+40°C	TO	T205°C	140°C
500 W Blended light	-20°C or-60°C /+60°C	-40°C T3 T190°C -60°C N.A N.A -40°C T3 T190°C	160°C	
400 W W	-20°C or-60°C/+40°C	Т3	T190°C	95°C
400 W Mercury vapor	-20°C or-60°C /+60°C	N.A	N.A	N.A
100 W 5 - 15	-20°C or-60°C/+40°C	Т3	T190°C	85°C
400 W Sodium vapor	-20°C or-60°C /+60°C	N.A	N.A	N.A
400 W Martal ballida	-20°C or-60°C/+40°C	Т3	T160°C	N.C
400 W Metal halide	-20°C or-60°C /+60°C		T190°C	85°C
250 W.H.	-20°C or-60°C/+40°C		T160°C	N.C
250 W Mercury vapor	-20°C or-60°C /+60°C	Т3	T190°C	85°C
2 - 2011/ []	-20°C or-60°C/+40°C	Т6	TOF®C	N.C
3 x 36W Fluorescent	-20°C or-60°C /+60°C	T5	− T85°C	
COM Fixed or fleebing LED	-20°C or-60°C/+40°C	Т6	T85°C	NC
60 W Fixed or flashing LED	-20°C or-60°C /+60°C	T5	185 C	NC
250 W Sodium vapor	-20°C or-60°C/+40°C	Т2	T140°C	0E°C
	-20°C or-60°C /+60°C	Т3	T160°C	95°C
250 W Motel belide	-20°C or-60°C/+40°C	T4	T135°C	95°C
250 W Metal halide	-20°C or-60°C /+60°C	T3	1135 C	95 C

N.C : Not Concerned N.A : Not authorized



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### Type EVAC 500 LED or EVAC 501 LED

Type and power of lamp	Ambient temperature range	Concerned explosive atmosphere		Cable temperature
		Gas	Dust	Cable temperature
48 W LED	-20°C or-40°C/+40°C	Т6	T95°C	N.C
	-20°C or-40°C /+60°C	T5		
96 W LED	-20°C or-40°C/+40°C	T6	T0516	
	-20°C or-40°C /+60°C	T5	T95°C	N.C



### INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:

**IECEx INE 13.0075X** 

Issue No: 2

Certificate history:

Status:

Current

Issue No. 2 (2018-10-24)

Date of Issue:

Issue No. 1 (2015-07-22)

2018-10-24

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Issue No. 0 (2014-01-31)

Applicant:

**FEAM** 

Via Mario Pagano, 3

I - 20090 Trezzano sul Naviglio (MI)

Equipment:

Lighting fixtures type EVAC...

Optional accessory:

Type of Protection:

db, op is and tb

Marking:

For conventional model Ex db IIC T6...T2 Gb

Ex tb IIIC T85°C...T225°C Db IP66

For LED model : Ex db op is IIC T6 or T5 or T4 Gb

Ex op is tb IIIC T85°C or T100°C or T135°C Db IP66

The complete marking is detailed in Annex.

Approved for issue on behalf of the IECEx

Certification Body:

Olivier COTTIN

Position:

Signature:

(for printed version)

Date:

Head of Equipment and Corporate Services Unit

2018.10.24

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 the Official IECEx Website.

Certificate issued by:

**INERIS** 

Institut National de l'Environnement Industriel et des Risques, BP n2 Parc Technologique ALATA France

INERIS



Certificate No:

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Manufacturer:

FEAM

Via Mario Pagano, 3

I - 20090 Trezzano sul Naviglio (MI)

Italy

Additional Manufacturing location(s):

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 apparatus 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: 2011

Explosive atmospheres - Part 0: General requirements

Edition:6.0

IEC 60079-1: 2014-06

Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

Edition:7.0

IEC 60079-28: 2015

Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation

Edition:2

IEC 60079-31: 2013

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Edition:2

This Certificate does not indicate compliance with electrical 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:

FR/INE/ExTR13.0075/02

Quality Assessment Report:

IT/CES/QAR09.0003/10



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Schedule

### **EQUIPMENT:**

Equipment and systems covered by this certificate are as follows:

These lighting fixtures EVAC... made in aluminum alloy are intended to receive different type of lamps.

Depending on the model, the ballast/driver could be installed either directly inside light housing or in a separated ballast housing. When using a separated ballast housing, the two compartments are separated by a sealed bushing. As specified in the descriptive documents of the manufacturer, the separated ballast housing could be:

- the UNIT PRC covered by IECEx INE 13.0060X or,
- the specific ballast housings model EVAC 201 L and EVAC 501L or,
- other enclosure covered by an IECEx certificate for this application.

This equipment gets the degrees of protection IP66 in accordance with IEC 60529 standard.

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

- The length of the flameproof joints are greater than those specified in tables of IEC 60079-1 standard. For any repair, contact the manufacturer.
- During the installation, the user will take into consideration that the window of the lighting fixture type EVAC 50\* LED or EVAC 501 L underwent only a shock corresponding to an energy of a low risk at 2J.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

### Purpose en the Issue 2:

- New version EVAC 201 L and EVAC 501 L including new ballast housings

- Application of the type of protection « op is » in accordance with the standard IEC 60079-28 :2015 for LED version.

- Application of the standard IEC 60079-1:2014

Purpose of the Issue 1:
- Addition of new models type EVAC 500 LED and EVAC 501 LED.

- Possibility to install inside the EVAC 501 the following types of lamps: 250 W Sodium vapor and 250 W Metal halide.

- Possibility to install inside the EVAC 200 or EVAC 201 the following types of lamps: Xenon 2J, Maxixenon 2J, Maxixenon 6J.



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Additional information:

Annex:

IECEx INE 13.0075X-02\_Annex.pdf



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### PARAMETERS RELATING TO THE SAFETY

Maximum supply voltage for ballasts or electronic modules:

- 230V, 240V or 277 V in accordance with the type of ballast or electronic module and the lamp.

Electrical characteristic of the fuse protection for "op is" protection mode: See instructions of the manufacturer The different types and powers of lamps, the temperature classes following the maximum ambient temperature are detailed in the tables at the end.

The lighting fixtures type EVAC 50\* LED and EVAC 501 L\* can be used in the range ambient temperatures from - $40^{\circ}$ C to  $60^{\circ}$ C. The other lighting fixtures type EVAC (conventional or LED version) can be used in the following range ambient temperatures from - $60^{\circ}$ C to + $60^{\circ}$ C.

### MARKING

Marking has to be readable and indelible; it has to include the following indications:

1. On the conventional model (all types of lamps excepted LED version):

**FEAM** 

I - 20090 Trezzano sul Naviglio (MI)

EVAC (1)

IECEx INE 13.0075X

(Serial number)

Ex db IIC T(2) Gb

Ex tb IIIC T(2) Db IP66

...°C < Tamb < ...C (3)

T.cable= ... <sup>(4)</sup>

CABLE GLAND: (type and size)

WARNINGS: DO NOT OPEN WHEN ENERGIZED

DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

- (1) The type is completed by numbers and letters corresponding to the manufacturing variations.
- (2) T6...T2 or T85°C...T225°C: according to the versions as defined in tables at the end
- (3) Range of ambient temperatures if different from -20°C to +40°C.
- (4) T.cable according to the versions as defined in tables at the end.

### 2. On the LED model:

**FEAM** 

I - 20090 Trezzano sul Naviglio (MI)

EVAC (1)

**IECEX ÎNÉ 13.0075X** 

(Serial number)

Ex db op is IIC T(2) Gb

Ex op is th IIIC T(2) Db IP66

...°C < Tamb < ...C (3)

T.cable= ... (4)

CABLE GLAND: (type and size)

WARNINGS: DO NOT OPEN WHEN ENERGIZED

DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

- (1) The type is completed by numbers and letters corresponding to the manufacturing variations.
- (2) T6 or T5 or T4 or T85°C or T100°C or T135°C: according to the versions as defined in tables at the end.
- (3) Range of ambient temperatures if different from -20°C to +40°C
- (4) T.cable according to the versions as defined in tables at the end.



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### **ROUTINE EXAMINATIONS AND TESTS**

In accordance with clause 16.1 of the IEC 60079-1 standard each apparatus defined below has to have successfully passed, before delivery, an overpressure test of a period comprised between 10 and 60 seconds under:

	Minimum ambient temperature :			
Туре	-20°C	-40°C	-60°C	
Conventional model EVAC ***				
LED model EVAC 20* LED	12.9 bar	N/A	14.2 bar	
LED model EVAC 201 L (light housing)				
LED model EVAC 50* LED	40.01	47.01	N1/4	
LED model EVAC 501 L (light housing)	12.3 bar	17.9 bar	N/A	
LED model EVAC 201 L (ballast housing)	N/A	16.5 bar	17.5 bar	
LED model EVAC 501 L (ballast housing)	N/A	16.5 bar	N/A	



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### **TABLES**

Type and maximum power of lamp	Ambient	Concerned explosive atmosphere		C-bl- to
	power of lamp	temperature range	Gas	Dusts
100 W Incandescent	-20°C or-60°C/+40°C		T42506	N.C
100 W Incandescent	-20°C or-60°C /+60°C	T4	T135°C	95°C
400 W H-1	-20°C or-60°C/+40°C	<b>T</b> ,	T425%	N.C
100 W Halogen	-20°C or-60°C /+60°C	T4	T135°C	95°C
12 W LED	-20°C or-60°C/+40°C	Т6	TOF®C	N.C
	-20°C or-60°C /+60°C		T85°C	N.C
100 W Metal halide	-20°C or-60°C/+40°C	Т3	T140°C	NC
	-20°C or-60°C /+60°C		T160°C	N.C
20 W Horaun van er	-20°C or-60°C/+40°C	T4	T135°C	N.C
80 W Mercury vapor	-20°C or-60°C /+60°C	T3	T160°C	N.C
70 W Sodium vapor	-20°C or-60°C/+40°C	T4	T135°C	N.C
	-20°C or-60°C /+60°C		1135 C	N.C
15 W Fluorescent	-20°C or-60°C/+40°C	Т6	T85°C	N.C
	-20°C or-60°C /+60°C			N.C
25 W AC	-20°C or-60°C/+40°C	T6	T85°C	N.C
Incandescent 21 W DC	-20°C or-60°C /+60°C	T5	T95°C	N.C



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	Table 2: Type EVAC2	00 or EVA	C201	
Type and maximum	Ambient temperature range		d explosive sphere	Cable townswature
power of lamp		Gas	Dust	Cable temperature
200 W Incandescent	-20°C or-60°C/+40°C	T4	T135°C	95°C
200 W Incandescent	-20°C or-60°C /+60°C	Т3	T160°C	120°C
440 M Plandad light	-20°C or-60°C/+40°C	TO	T140°C	95°C
160 W Blended light	-20°C or-60°C /+60°C	T3	T160°C	120°C
4EO W Halagan	-20°C or-60°C/+40°C	T4	T135°C	N.C
150 W Halogen	-20°C or-60°C /+60°C	Т3	T160°C	95°C
125 W Morguni vanor	-20°C or-60°C/+40°C	Т3	T140°C	N.C
125 W Mercury vapor	-20°C or-60°C /+60°C		T160°C	N.C
100 W Sodium vanor	-20°C or-60°C/+40°C	Т3	T140°C	N.C
100 W Sodium vapor	-20°C or-60°C /+60°C		T160°C	N.C
25 W Xenon flash	-20°C or-60°C/+40°C	T6	T85°C	N.C
25 W Kelloli Itasii	-20°C or-60°C /+60°C	10		N.C
23 W Fluorescent	-20°C or-60°C/+40°C	Т6	T85°C	N.C
25 W Huorescent	-20°C or-60°C /+60°C	10		N.C
Xenon 2J	-20°C or-60°C/+40°C	T6	T85°C	N.C
Aerion 23	-20°C or-60°C /+60°C	16		
Maxixenon 2J	-20°C or-60°C/+40°C	Т6	T85°C	N.C
MUNINCTION 23	-20°C or-60°C /+60°C			14.0
Maxixenon 6J	-20°C or-60°C/+40°C	T6	T85°C	N.C
Maxixelloll of	-20°C or-60°C /+60°C	10	165 C	11.0

N.C: Not Concerned

Table 3: Type EVAC 200LED or EVAC 201LED or EVAC 201L					
Type and maximum power of	Concerned atmos		Cable		
lamp	range	Gas	Dust	temperature	
40/W L FD	-20°C or-60°C/+40°C	T5	T85°C	N.C	
48W LED	-20°C or-60°C /+60°C	T4	T105°C	90°C	



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Type and maximum power of lamp	Ambient temperature range		d explosive sphere		
		Gas	Dusts	Cable temperature	
200 1// 1	-20°C or-60°C/+40°C	T4	T135°C	95°C	
300 W Incandescent	-20°C or-60°C /+60°C	Т3	T160°C	120°C	
250 W.HL.	-20°C or-60°C/+40°C	T4	T135°C	95°C	
250 W Halogen	-20°C or-60°C /+60°C	T3	T160°C	120°C	
252146	-20°C or-60°C/+40°C	Т3	T160°C	N.C	
250 W Sodium vapor	-20°C or-60°C /+60°C		T190°C		
250 W Motel belide	-20°C or-60°C/+40°C	Т3	T140°C	N.C	
250 W Metal halide	-20°C or-60°C /+60°C		T160°C		
	-20°C or-60°C/+40°C	Т3	T160°C	95°C	
250 W Blended light	-20°C or-60°C /+60°C		T190°C	120°C	
4EO W Notel belide	-20°C or-60°C/+40°C	T4	T135°C	N. C	
150 W Metal halide	-20°C or-60°C /+60°C	Т3	T160°C	N.C	
150 W Sodium vapor	-20°C or-60°C/+40°C	T4	T135°C	N.C	
	-20°C or-60°C /+60°C			N.C	
25 W Rotallarm	-20°C or-60°C/+40°C	Т6	T85°C	N.C	
	-20°C or-60°C /+60°C			N.C	
2 v 19W Fluoroscont	-20°C or-60°C/+40°C	Т6	T85°C	N.C	
3 x 18W Fluorescent	-20°C or-60°C /+60°C		165 C	N.C	



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Type and maximum power of lamp	Ambient temperature range	Concerned explosive atmosphere		Cable temperature	
		Gas	Dusts		
500 W Incandescent	-20°C or-60°C/+40°C	т.	T160°C	120°C	
500 w incandescent	-20°C or-60°C /+60°C	Т3	T190°C	140°C	
EOO W Dlandad limbt	-20°C or-60°C/+40°C	т.	T205°C	140°C	
500 W Blended light	-20°C or-60°C /+60°C	T2	T225°C	160°C	
400 W Mercury vapor	-20°C or-60°C/+40°C	Т3	T190°C	95°C	
	-20°C or-60°C /+60°C	N.A	N.A	N.A	
400 W Sodium vapor	-20°C or-60°C/+40°C	Т3	T190°C	85°C	
	-20°C or-60°C /+60°C	N.A	N.A	N.A	
400 W Metal halide	-20°C or-60°C/+40°C	Т3	T160°C	N.C	
400 W Metat Hatide	-20°C or-60°C /+60°C		T190°C	85°C	
250 W Mercury vapor	-20°C or-60°C/+40°C	Т3	T160°C	N.C	
250 W Mercury Vapor	-20°C or-60°C /+60°C	13	T190°C	85°C	
3 x 36W Fluorescent	-20°C or-60°C/+40°C	T6	T85°C	N.C	
3 X 30W Huorescent	-20°C or-60°C /+60°C	T5	183 C		
60 W Fixed or flashing LED	-20°C or-60°C/+40°C	T6	T85°C	NC	
	-20°C or-60°C /+60°C	T5	183 C		
250 W Sodium vapor	-20°C or-60°C/+40°C	Т3	T160°C	95°C	
	-20°C or-60°C /+60°C				
250 W W-t-l b-lid-	-20°C or-60°C/+40°C	T4	TADESC	05°C	
250 W Metal halide	-20°C or-60°C /+60°C	Т3	T135°C	95°C	

N.C: Not Concerned - N.A: Not authorized

Table 6: T	pe EVAC 500LED or E	VAC 501LE	D or EVAC 5	01 L
Type and maximum	Ambient temperature range	Concerned explosive atmosphere		Cable towns and we
power of lamp		Gas	Dust	Cable temperature
40 W LED	-20°C or-40°C/+40°C	T6	TOF°C	N.C
48 W LED	-20°C or-40°C /+60°C	T5	T95°C	
04.141.ED	-20°C or-40°C/+40°C	т.	T4 T135°C	N.C
96 W LED	-20°C or-40°C /+60°C	14		