



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**



(3) EC-type-examination Certificate Number:

PTB 02 ATEX 1158

(4) Equipment: Ex spotlight, type FZDEN
(5) Manufacturer: CEAG Sicherheitstechnik GmbH
(6) Address: Neuer Weg Nord 49, D-69412 Eberbach, Germany

(7) This equipment and any acceptable variation thereof are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 03-12342.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 + A1 + A2 EN 50018:2000 EN 50019:2000

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G EEx de IIC T3 or T4

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, May 19, 2003

Dipl.-Phys. U. Vötkel



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158

(15) Description of equipment

Spotlights of type FZDEN are used to illuminate large areas. They may be equipped with different types of luminous elements. The luminaire element consists of a type "e" and a type "d" enclosure. The type "e" enclosure is split twice; it is closed by a screwed cap. The type "d" enclosure consists of a glass cylinder provided with two caps. To mechanically stabilize the socket cover at one end as well as the front cover at the other, both are connected by three threaded rods and nuts.

Ambient temperature range: -20 °C to +40 °C

Designation: FZD xxx Wyyy
xxx: 150 (= 150 W lamp wattage) ⇒ T4
250 (= 250 W lamp wattage) ⇒ T4
400 (= 400 W lamp wattage) ⇒ T3
yyy: HIT (= metal halogen lamp)
HST (= high-pressure sodium lamp)

(16) Test report PTB Ex 03-12342

(17) Special conditions for safe use

None

Notes for manufacturing and operation

Separately certified cable entries and sealing plugs may be used for the electric connectors. They have to conform to the Standards specified on the cover sheet. Any Special Conditions specified for the cable entries (e.g. inadequate resistance to tensile stress) shall be complied with. The user shall be informed of such conditions in the form of operating instructions (e.g. connection cables to be of the fixed type).

Any components attached or installed shall be of a technical standard that complies with the specifications on the cover sheet as a minimum.

The pressure test required under EN 50018:2000, section 16.1, for routine testing shall be performed at 12.3 bar (= 1.5 times the reference pressure).

Physikalisch-Technische Bundesanstalt



Braunschweig und Berlin

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158

(18) Essential health and safety requirements

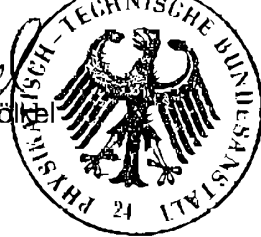
Complied with by compliance with the aforementioned standards.

Zertifizierungsstelle Explosionsschutz

Braunschweig, May 19, 2003

By order:


Dipl.-Phys. U. Völkel



1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158

(Translation)


Equipment: Ex spotlight, type FZDEN

Marking:  II 2 G EEx de IIC T3 or T4

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg 49
69412 Eberbach, Germany

Description of supplements and modifications

- The permissible ambient temperature range is expanded to: -55 °C to +40 °C.
- The tolerances for threaded joints (thread M 144 of 400 W) are increased.
- The temperature class of the 250 W version is changed to T3.
- In accordance with EN 50281-1-1:1998, the spotlight may be used for dust applications (identification:  II 2 D EEx IP 66 T 200 °C/135 °C.)

Test report: PTB Ex 03-13189

Zertifizierungsstelle Explosionsschutz

By order:



Dipl.-Phys. U. Völkel



Braunschweig, January 23, 2004

Sheet 1/1


2nd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158

(Translation)

Equipment: Ex spotlight, type FZDEN

Marking:  II 2 G/D EEx de IIC T3 or T4 IP 66 T 120 °C, 150 °C or 180 °C

Manufacturer: Cooper Crouse-Hinds GmbH

Address: Neuer Weg Nord 49
69412 Eberbach, Germany

Description of supplements and modifications

The maximum surface temperatures for use of the spotlight in II D areas (dust explosion protection) are changed as follows:

Lamp wattage	Max. surface temperature
150 W	120 °C
250 W	150 °C
400 W	180 °C

The spotlight may optionally also be designed as type FZD-04 with a wall-mounting enclosure and a separate ballast compartment. Separately certified cable entries provide for connection between the two enclosure sections. Both enclosure sections are designed to Increased Safety "e" type of protection for II G areas, or IP 66 for II D areas.

	Max. admissible ambient temperature range
Wall bracket, including spotlight enclosure	-55 °C to 40 °C
Ballast compartment	-55 °C to 50 °C

Physikalisch-Technische Bundesanstalt



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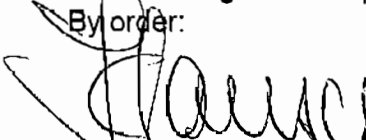
2nd SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158

The name of the manufacturer is changed to Cooper Crouse-Hinds GmbH (previously CEAG Sicherheitstechnik GmbH).

Test report: PTB Ex 04-14141

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, October 5, 2004


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



3rd SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158
(Translation)

Equipment: Ex spotlight, type FZD EN 250W

Marking: II 2 G/D EEx de IIC T4 or T3 IP 66 T 130 °C or 150 °C

Manufacturer: Cooper Crouse-Hinds GmbH

Address: Neuer Weg Nord 49
69412 Eberbach, Germany

Description of supplements and modifications

For the spotlight, type FZD EN 250W, the temperature class for the gas hazard area (group II 2 G) and the maximum surface temperature for the dust hazard area (group II 2 D) will be changed. The classification as a function of the direction of light propagation is as follows:

Light propagation	Temperature class	Max. surface temperature
Upwards Angle of inclination $\pm 45^\circ$	T3	150 °C
In all other directions	T4	130 °C

If the spotlight is intended for operation in temperature class T4 or at a max. surface temperature of 130 °C, and if the direction of light propagation can operationally be adjusted by means of pole hinges or similar means, mechanical arresting devices shall be provided to make sure that the direction of light propagation may only be adjusted within the accepted limits.

Test report: PTB Ex 04-14175

Zertifizierungsstelle Explosionsschutz

By order:

Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Braunschweig, December 13, 2004



4th SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 02 ATEX 1158

(Translation)

Equipment: Reflector lamp FZDEN / FZD 04

Marking:  II 2 G EEx demq IIC T3 or T4
 II 2 D EEx IP 66 T xxx°C

Manufacturer: Cooper Crouse-Hinds GmbH

Address: Neuer Weg Nord 29, 69412 Eberbach, Germany

Description of supplements and modifications

The earlier approval is extended to include the type FZD 04 lamp. With this type, a separate ballast compartment is used. The maximum permissible ambient temperature for the ballast compartment of this type is defined to be -45 °C to +50 °C.

The ballast compartment – designed to increased Safety type of protection – may optionally also accommodate additional, separately certified terminals.

Ballast components designed to Increased Safety “e” type of protection from other EC Type Examination Certificates may be used as an option. For details, reference is made to the test documents.

The required components (ballast, capacitors, terminals, etc.) may optionally also be mounted in separately certified control units of Flameproof Enclosure “d” or Increased Safety “e” type of protection. In that case, the ballast compartment shall be designed and marked for compliance with the EC Type Examination Certificate issued for the control unit.

The temperature classes and the maximum surface temperatures of the lamp, including the wall-mounting enclosure, are defined as follows:

Type of lamp	Ambient temperature	Temperature class	Max. surface temperature
FZD 04 150 W	-45°C to 60 °C	T3	140 °C
FZD 04 250 W	-45 °C to 50 °C	T3	160 °C
FZD 04*) 250 W	-45 °C to 40 °C	T4	130 °C
FZD 04 400 W	-45°C to 40 °C	T3	180 °C

*) This version may only be used for downward and lateral light output (max. 45° upwards). Upward light output (± 45 °C) is **not** acceptable for this temperature class or maximum surface temperature (T4 or 130 °C). Should this lamp be operated in connection with hinged masts or the like for lighting orientation under field conditions, adequate mechanical locks shall be provided to make sure that the light output can be adjusted only within the accepted limits.

Applied standards

EN 50014:1997 + A1 + A2

EN 50018:2000 + A1

EN 50019:2000

Test report: PTB Ex 06-16043

Zertifizierungsstelle Explosionsschutz

Braunschweig, June 19, 2006

By order



Dr.-Ing. U. Klausmeyer
Direktor und Professor

