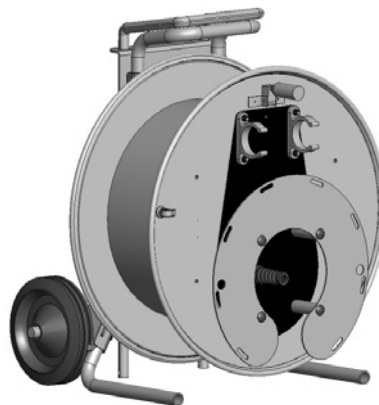


## Instructions for Safe Use

# **CENTAURSLAM<sup>®</sup>** **ZERO**

(Certification N:o VTT 09 ATEX 002X)

Thank you for choosing CentaurSlam<sup>®</sup> Zero LED –portable luminaire assembly for your job site.  
Purpose of this manual is to provide you all the necessary safety and product information to  
conduct your job conveniently and without any risks for health and safety.



Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
[www.centaurea.fi](http://www.centaurea.fi)

Trade Reg. No. 486.515  
VAT No. FI08370823

## Contents

1. Introduction to CentaurSlam® Zero LED .....	3
1.1 Technical data .....	3
1.2 Certification of equipment.....	5
1.3 Standard unit construction.....	7
1.4 Quality guaranteed .....	8
1.4.1 General .....	8
1.4.2 Individual testing reports .....	9
2. Prior to use.....	10
2.1 Selection of right equipment.....	10
2.1.1 Intended purpose of equipment.....	10
2.1.2 Application of use (Zone XX) in accordance with equipment category .....	10
2.1.3 Gas explosion group (IIA, IIB or IIC) in accordance with Equipment group (IIA, IIB or IIC) .....	11
2.1.4 Temperature class of the equipment .....	11
2.1.5 Environmental criteria .....	11
3. Operating instructions .....	12
3.1 Personnel .....	12
3.2 Visual Inspection of CentaurSlam® Zero LED .....	12
3.3 Connection to the supply.....	12
3.3.1 Requirements for supply (Electricity).....	12
3.3.2 Low-Voltage .....	13
3.4 Adding accessories to CentaurSlam® Zero LED .....	13
4. Inspection & Maintenance .....	13
4.1 After Use.....	13
4.2 Maintenance .....	14
4.3 Testing.....	14
4.4 Repair report.....	15
Helpdesk .....	20

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

## 1. Introduction to CentaurSlam® Zero LED

(Certification N:o VTT 09 ATEX 002X)

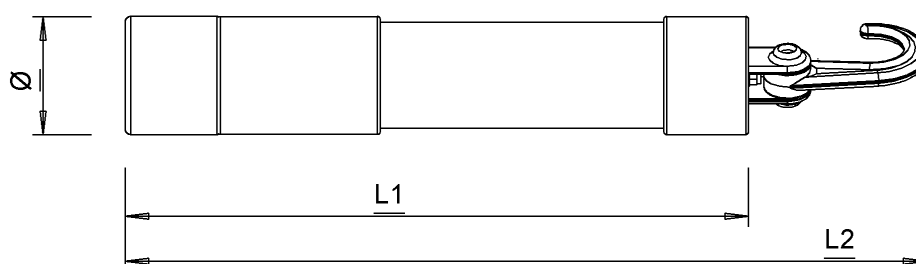
This instruction manual guides you through the process of selecting and adopting CentaurSlam® Zero LED work light at your work site. The manual regards the following CentaurSlam® Zero LED types:

### 1.1 Technical data

**CentaurSlam Zero® LED 3x3W (later CSZLED33FS/B) REEL VERSION**

**CentaurSlam Zero® LED 3x3W (later CSZLED33F) Box version, WITHOUT REEL**

Product model	Luminaire dimensions / mm			Reel dimensions / mm			
	L1	L2	Ø	S	W	H	
CS Zero LED 3x3W S (80m reel)	262	340	50	286	460	550	
CS Zero LED 3x3W B (150m reel)	262	340	50	286	580	720	
				Box dimensions / mm			
				L3	L4	W	H
CS Zero LED 3x3W Box	262	340	50	191	312	76	59



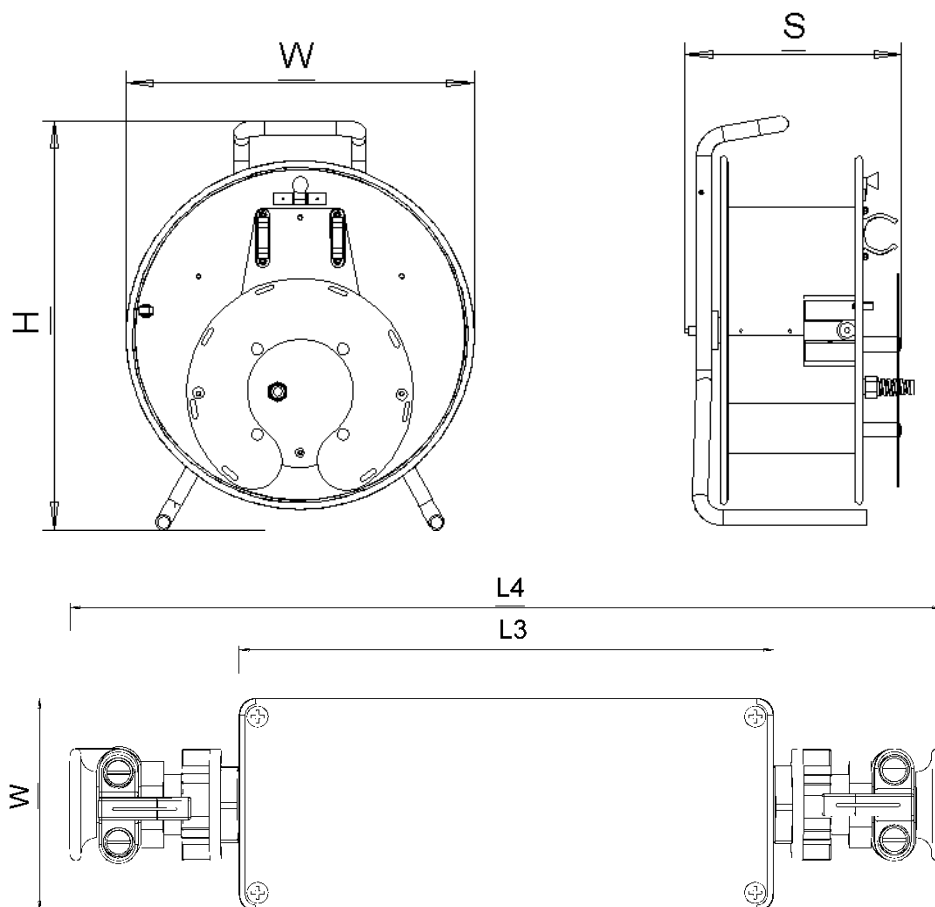
Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

4(20)



Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

## 1.2 Certification of equipment


The CentaurSlam® Zero LED-series has been designed, tested and certified (according to ATEX) for portable use. There is “X” –mark in the certificate for special conditions of safe use of the equipment. Special conditions of safe use specifies:

- **The supply unit shall not be placed into Zone 0 hazardous Area**

The equipment is to used properly and according to its ratings, documentation and local applicable laws. Local, national certificates of these units may exist outside the region of EU.

The aforementioned CentaurSlam® Zero LED-types are certified as follows. You may find brief explanation of the certification markings beneath. The assembly includes both luminaire unit and supply unit. The luminaire unit is suitable for use in explosion hazardous areas of Zone 0&20.

Luminary unit:

CE<sub>0537</sub>  II 1 GD      **Ex ma op is IIC T6 Ga**  
**Ex t/ma IIIC T 75 C Da**

CE<sub>0537</sub> = Valid production quality system approved and notified by VTT (Finnish Notified Body, listed by EC)



**Ex** = Certified for explosion hazardous areas

**II** = Certified for use in areas excluding mines

**1** = Equipment category (suitable for Zone 0&20 and Zone 1&21 and Zone 2&22)

**G** = Certification taking account explosion hazardous GASES

**D** = Certification taking account explosion hazardous DUSTS

### **Explanation of marking for explosion hazardous area due to Gases (Ex ma op is IIC T6 Ga):**

**Ex** = Certified for use in explosion hazardous areas

**e** = Explosion protection method increased safety (of certain components)

**ma** = Explosion protection method encapsulation (encapsulating ignition sources e.g. electronic ballast)

**op is** = Protection of equipment and transmission systems using optical radiation (LED)

**IIC** = Equipment group (For all gases IIA, IIB and IIC gases)

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

6(20)

**T6** = Maximum inside temperature of the unit is 85 °C (within the ambient temperature range of -20°C - +40°C)

**Ga** = Explosion Protection Level (EPL) marking for equipment for explosive GAS atmospheres with “VERY HIGH” level of protection. Equipment is not a source of ignition in normal operation, during expected malfunctions or during rare malfunctions

**Explanation of marking for explosion hazardous area due to dusts (Ex t IIIC T 90 C Db):**

**Ex** = Certified for use in explosion hazardous areas

**t** = Explosion protection method “protection by enclosure”

**ma** = Explosion protection method encapsulation (encapsulating ignition sources e.g. electronic ballast)

**IIIC** = Equipment group for all dusts

**T 75 C** = Maximum OUTSIDE surface temperature of the unit is 75 °C (within the ambient temperature range of -20°C - +40°C)

**Da** = Explosion Protection Level (EPL) marking for equipment for Explosive DUST atmospheres with “VERY HIGH” level of protection. Equipment is not a source of ignition in normal operation, during expected malfunctions or during rare malfunctions

Supply unit:

**CE<sub>0537</sub>**  **II (2)1 GD Ex e mb IIC T6 Gb**  
**Ex t IIIC T 60 C Db**

**CE<sub>0537</sub>** = Valid production quality system approved and notified by VTT (Finnish Notified Body, listed by EC)

 = Certified for explosion hazardous areas

**II** = Certified for use in areas excluding mines

**(2)1** = Category 2 equipment supplying Category 1 equipment category/group (Supply unit suitable for Zone 1&21 and Zone 2&22)

**G** = Certification taking account explosion hazardous GASES

**D** = Certification taking account explosion hazardous DUSTS

**Explanation of marking for explosion hazardous area due to Gases (Ex emb IIB T3 Gb):**

**Ex** = Certified for use in explosion hazardous areas

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

**e** = Explosion protection method increased safety (of certain components)

**mb** = Explosion protection method encapsulation (encapsulating ignition sources e.g. electronic ballast)

**IIC** = Equipment group (Suitable for IIA, IIB and IIC gases)

**T6** = Maximum inside temperature of the unit is 85 °C (within the ambient temperature range of -20°C - +40°C)

**Gb** = Explosion Protection Level (EPL) marking for “HIGH” level of protection. Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account. Equipment remains functioning in Zones 1 and 2.

#### **Explanation of marking for explosion hazardous area due to Dusts (Ex t IIC T 90 C Db):**

**Ex** = Certified for use in explosion hazardous areas

**t** = Explosion protection method “protection by enclosure”

**IIC** = Equipment group for all dusts

**T 60 C** = Maximum OUTSIDE surface temperature of the unit is 60 °C (within the ambient temperature range of -20°C - +40°C)

**Db** = Explosion Protection Level (EPL) marking for “HIGH” level of protection. Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account. Equipment remains functioning in Zones 21 and 22.

### **1.3 Standard unit construction**

The following list familiarizes you with some common unit features important to recognize.

**End parts:** Flexible, plastic-made end parts ensure shock-absorbing and harmless contact to sensitive and hard surface in case the luminary drops to the ground even from high position. Light construction affects the total weight of the unit itself.

**Transparent PC –tube:** Polycarbonate tube, being durable, flexible and lightweight plastic, brings advantage for use. Unique antistatic treatment allows the use of PC in explosion hazardous areas.

**Aluminium frame:** Nearly all CentaurSlam® Zero LED–units are based on use of solid but flexible aluminium frame. Components are tightened with screws on it, making the unit tough and durable in severe conditions. Moreover, the frame derives excessive heat out from the luminary thereby extending lifetime of the unit.

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

**Electronic ballast:** The ballasts is modifying the current and voltage to suitable for LEDs taking account requirements of “op is” as well as the requirements of rare malfunctions (Two independent faults at same time).

**LED:** Light Emitting Diodes. 3W light source undergo special spark-prevention process (encapsulation) in the factory. Light colour is cool-white and colour temperature 5500 K

**Cable:** Standard cable of the CentaurSlam® Zero LED–series is H07BQ-F. This cable has polyurethane (PUR) outer sleeve. PUR withstands well chemicals as well mechanical wearing. However, the user has an option to specify cable type in accordance with work site requirements of own.

**Box version:** Construction where the electronic ballast is placed in an external box instead of inside the luminaire with LEDs.

**Reel:** Metal reel for long cables. The electronics is placed inside the reel

**Other common accessories (optional):**

Antistatic protective film for PC tube against chemical splashes and other substances

To view options on accessories, please visit <http://www.centaurea.fi> for further study or call / fax +358 6 4212 400 / +358 6 4140 631.

## 1.4 Quality guaranteed

### 1.4.1 General

The CentaurSlam® Zero LED–series is designed, certified, manufactured and tested under ISO 9001:2000 quality system as well as additional requirements of the Directive 94/9/EC (ATEX). The CentaurSlam® Zero LED–series is designed and tested according to the latest directives and standards. The referred directives and standards of the production date in case are stated on the Declaration of Conformity which is included in the delivery.

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
[www.centaurea.fi](http://www.centaurea.fi)

Trade Reg. No. 486.515  
VAT No. FI08370823

## 1.4.2 Individual testing reports

Each CentaurSlam®-unit has its own individual serial number and is provided with an original, individual testing report when leaving the factory. The year of manufacture is specified on the type label of the equipment. Following tests have been done for CentaurSlam® Zero LED-units according to standards relating to portable luminaries for explosion hazardous area. The Declaration of Conformity is specifying the relevant standards. The testing report which is included in the delivery specifies the results of the factory tests for that particular unit. The testing report typically specifies the following tests:

### **PE –resistance test**

The purpose of this test is to measure persistence of earth conductor. Vital test for electrical safety as well as explosion safety because of e.g static electricity control. The test current is 10 A (current) and the overall resistance should not exceed 0,5 ohm.

### **High voltage test (electrical strength)**

The purpose of this test is to measure leakage current through insulation. Vital test for revealing broken components or similar failures which can not be identified visually. Testing voltage applied is 2130VDC. Maximum leakage current is 5mA.

### **Test of expected use of equipment**

The luminary is subjected to shaking and vibration – to see that all the internal wires are properly attached and components are not loose.

### **Operational test of luminaire and accessories**

The unit is plugged-in and checked that it is working properly after all accomplished tests above.

### **Visual inspection**

A final check to see everything is fine (screws attached properly, wires connected and required markings attached).

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

## 2. Prior to use

### 2.1 Selection of right equipment

You need to be sure that the equipment you intend to take into explosion hazardous area matches up with the zone classification and other safety requirements related. At least the following points should be notified prior to use:

#### 2.1.1 Intended purpose of equipment

Please keep in mind what the actual application of equipment is. For example in case the equipment is to be moved when connected to the supply it needs to be designed for that purpose. If the certification is mentioning “portable” it means that the equipment is suitable and tested for portable use. If the certification does not mention portable it means that the equipment shall not be moved when it is in operation (reliable fixing of equipment).

**CentaurSlam® -units are designed and tested for portable use.**

#### 2.1.2 Application of use (Zone XX) in accordance with equipment category

Operator has the best knowledge of area classification at his site. To help the operators' selection of equipment the certification is describing the equipment category. For explosion hazardous areas there are three equipment categories. CentaurSlam® -units mentioned in this instruction fall into Category 1 equipment.

Category 1 product is suitable for use in Zones 0, 1 and 2 / (20, 21 and 22)

Category 2 product is suitable for use in Zones 1 and 2 / 21 and 22

Category 3 product is suitable for use in Zones 2 / (22)

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

### 2.1.3 Gas explosion group (IIA, IIB or IIC) in accordance with Equipment group (IIA, IIB or IIC)

This information is vital because the substances require different amount of energy to be ignited. Safety requirements for equipment are not the same for different substances (e.g. static electricity requirements). Therefore making the selection easier the gases are divided to three different groups (IIA, IIB and IIC). Further information about the substances can be found from EN 60079-20 (Data for flammable gases and vapours, relating to the use of electrical apparatus).

CentaurSlam® -units mentioned in this instruction are Equipment **group IIC**.

### 2.1.4 Temperature class of the equipment

Please observe the Ignition Temperature (IT) of the substance creating the explosion hazard at your site. Select the equipment based on IT of the substance. The Temperature of the equipment must be lower than IT. The highest temperature of the equipment is specified by using Temperature Classes T1 to T6.

Example:

Petroleum IT is approximately 250 Celsius → Maximum allowed temperature class of the equipment is T3 (< 200° C)

CentaurSlam® -units mentioned in this instruction are Temperature Class T6 (GASES)

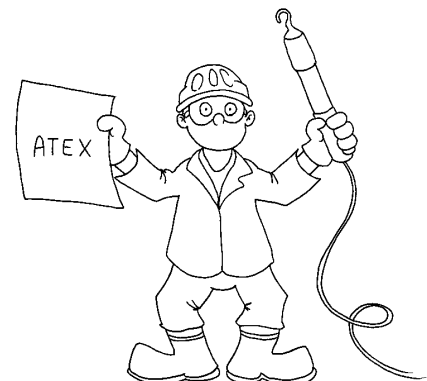
CentaurSlam® -units mentioned in this instruction maximum surface temperature of 65°C (DUSTS)

### 2.1.5 Environmental criteria

Please observe the ambient temperature of the application in use because certification is valid for temperatures between – 20°C --- + 40°C. If the equipment is used in other temperatures than mentioned the safety can not be guaranteed.

**Selection and use of equipment is always under the responsibility of the operator. Please note that all of the aforementioned criteria are to be fulfilled when selecting the equipment.**

**Please do not take any unnecessary risks.**



Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

## 3. Operating instructions

### 3.1 Personnel

The use of the equipment is to be controlled and accepted by the operator. The personnel using the unit have to be authorized by the operator or his representative. It is also recommended that the personnel transporting and using CentaurSlam® Zero LED dissipate charges when entering explosion hazardous area (e.g. by wearing dissipative shoes). In case of further training of using the equipment please contact the local supplier of this equipment.

### 3.2 Visual Inspection of CentaurSlam® Zero LED

As for all equipment to be used inside explosion hazardous area it is recommended that before taking the unit into Ex –area, a visual re-inspection on the unit was taken and an analysis made that the unit is un-damaged (e.g. any part or wires are loose damaged or disconnected)

In case faults or defects on the unit are noticed, it is prohibited to take such a unit into Ex –area until corrective actions have been made.

### 3.3 Connection to the supply

It is recommended that the unit is first connected to the mains / transformer before entering the explosion-hazardous area. Potential equalization should be arranged by the operator prior entering explosion hazardous area.

#### 3.3.1 Requirements for supply (Electricity)

The following main requirements should be taken into account:

**Earthing:** Only supply with protective earth is acceptable

**Supply voltage:** Variation may be maximum +/- 6% from the value stated in the unit type label.

**Current:** Maximum current of the system is 16 A.

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

**Frequency:** Standard 50 Hz if not otherwise stated in the type label.

**Fuse protection:** The supply has a fuse with a breaking capacity of at least 1500 A

Please observe the type label for further data.

### 3.3.2 Low-Voltage

The voltage supplied by the CentaurSlam® Zero LED supply unit to the CentaurSlam® Zero LED luminary unit is app. 12 V. Therefore luminary unit can be used in places requiring ELV (Extra-Low-Voltage, < 50 VAC) expecting that the supply unit is placed outside mentioned area.

### 3.4 Adding accessories to CentaurSlam® Zero LED

Centaurea provides a number of different accessories also for CentaurSlam® Zero LED. Please note that any other accessories may lead to requirement for your own risk assessment

In case you would like view the whole range of accessories, browse <http://www.centaurea.fi>

## 4. Inspection & Maintenance

### 4.1 After Use

Take the following steps after the CentaurSlam® Zero LED –unit has been taken out from Ex – area:

- 1) Clean the unit with a damp cloth (do not use detergents or solvents)
- 2) Change the anti-static film if only little light comes through it or it is damaged
- 3) Have a visual check on the unit (condition of cable, PC –tube, tightness of parts)
- 4) Let the unit dry in open air

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
[www.centaurea.fi](http://www.centaurea.fi)

Trade Reg. No. 486.515  
VAT No. FI08370823

## 4.2 Maintenance

The following procedure should be taken in case the CentaurSlam® Zero LED unit needs to be repaired:

- 1) Maintenance may be carried out only outside Ex –area
- 2) Some of the parts of the Luminary assembly can be changed only by the manufacturer (e.g. cable between supply unit and Luminary unit)
- 3) Person responsible for maintenance should have been trained the basics of explosion-protection as well electricity
- 4) Only original spare parts from the manufacturer should be used. Please note that there are no components in this unit which can be repaired by using glue, silicone or any other similar method.
- 5) The green colour on transparent parts of CentaurSlam® Zero LED may be damaged because of external affects like solvents or chemicals or mechanical stress. In case the green colour has disappeared in one area greater than 100 cm<sup>2</sup> the part has to be changed. The surface resistance of the transparent parts has to be between 1 MΩ - 1 GΩ.
- 6) Maintenance instructions with exploded-view diagram and spare parts list are available at your local distributor and the manufacturer. Please, when requesting maintenance instructions with exploded-view diagrams, include the model and serial number of the product.

## 4.3 Testing

Tests are to be done according to EN 60079-19 until returning the repaired unit back to operation. Below mentioned tests shall be done in addition to the tests specified in EN 60079-19:

- PE –resistance test
- High-voltage test (500 VDC between Phase& Neutral against P/E conductor)
- Operational test
- Test of expected use (vibrations, shaking)

Proper testing ensures safe operation of repaired equipment.

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823

## 4.4 Repair report

The operator is responsible for keeping up to date record of the condition of his equipment (EN 60079-14). Ensuring the availability of this important information each repair procedure should be written down in repair report according to EN 60079-19.

This report should reveal at least:

- Person who conducted the maintenance
- Date of maintenance
- Procedure of maintenance
- Signature of person responsible accepting the maintenance

More information about the use of Electrical Apparatus for Explosive Gas Atmospheres is available at:

EN 60079-14 (Electrical installations in hazardous areas)

EN 60079-10 (Classification of hazardous areas)

EN 60079-17 (Inspection and maintenance of electrical installations in hazardous areas)

IEC 60079-19 (Repair and overhaul for apparatus used in potentially explosive atmospheres)

Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
www.centaurea.fi

Trade Reg. No. 486.515  
VAT No. FI08370823









## Helpdesk

Under any doubt or question, please contact your local distributor or the manufacturer.

Contact details:

**CENTAUREA OY**

P.O. Box 89

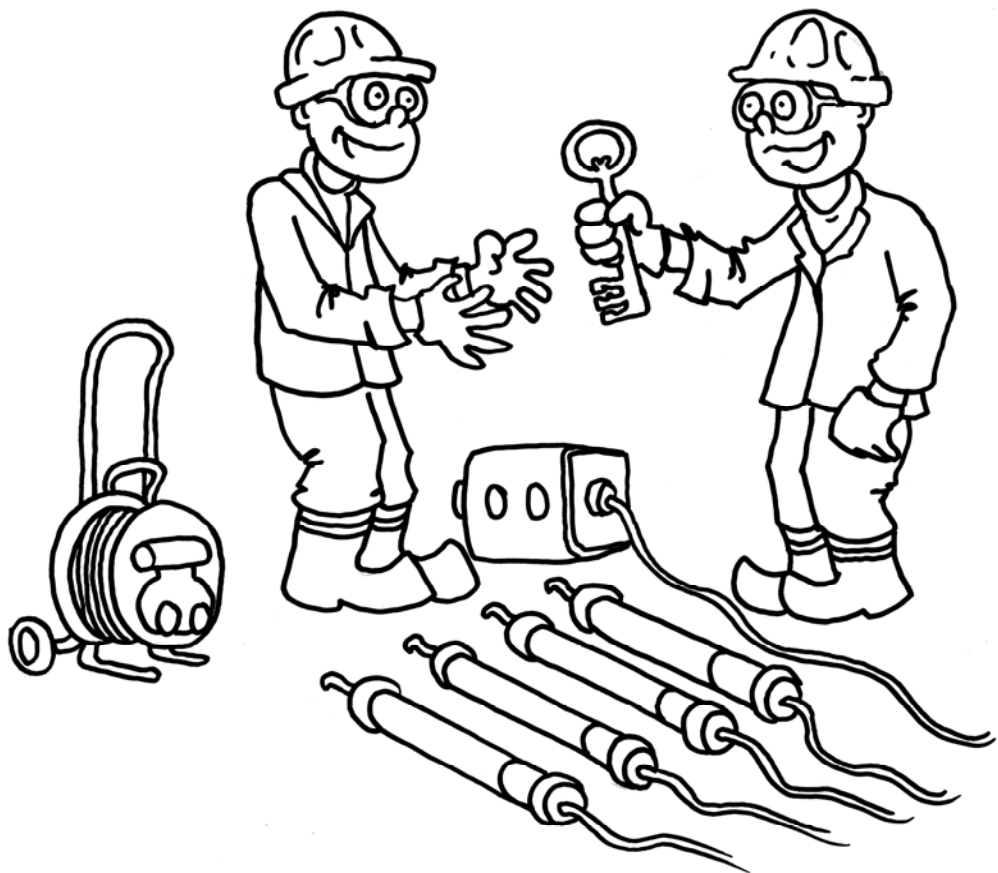
FIN-60101 Seinäjoki

Phone: +358 6 4212 400

Fax: +358 6 4140 631

Email: [info@centaurea.fi](mailto:info@centaurea.fi)

Web: <http://www.centaurea.fi>



Centaurea Oy

P.O. Box 89  
FIN-60101 Seinäjoki  
Finland

Tel. + 358 (0)6 421 2400  
Fax: + 358 (0)6 414 0631  
[www.centaurea.fi](http://www.centaurea.fi)

Trade Reg. No. 486.515  
VAT No. FI08370823