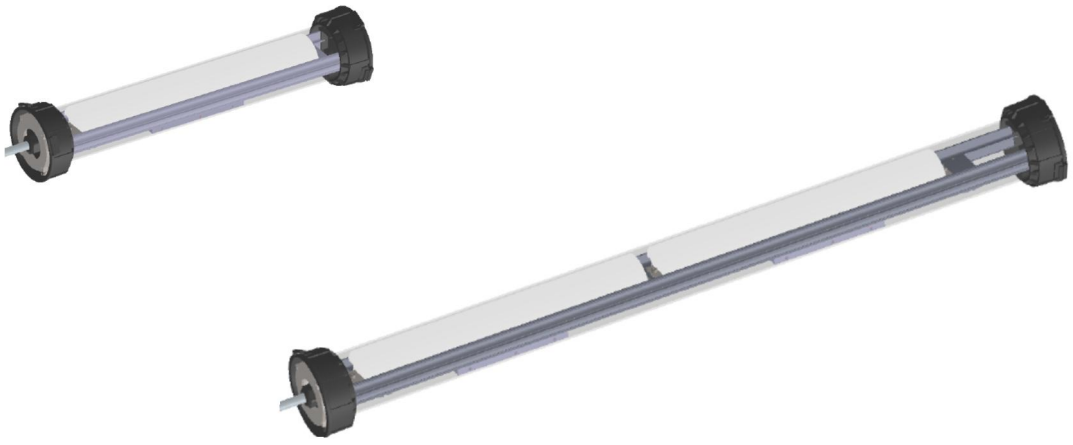
Instructions for Safe Use

(Certification N:o VTT 08 ATEX 066 or IECEx VTT 12.0009)

Thank you for choosing SLAM® Hornet Fixed work light 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.



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Contents

1. Introduction to SLAM®Hornet Fixed

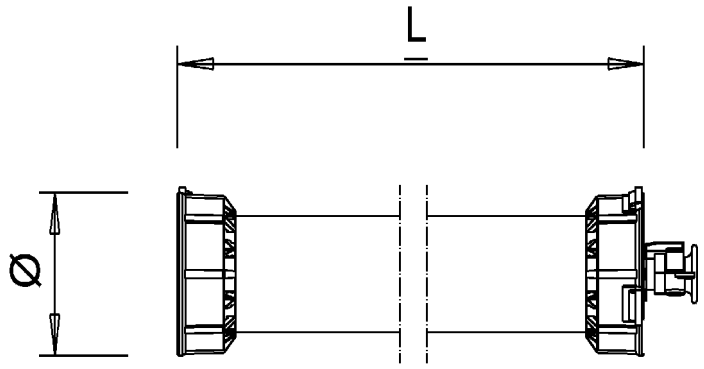
(Certification N:o VTT 08 ATEX 066 or IECEx VTT 12.0009)

This manual regards the following SLAM®Hornet types:

1.1 Technical data

SLAM®Hornet Fixed 1LED
SLAM®Hornet Fixed Linear 2LED

	Dimensions / mm	
Product model	**L**	**Ø**
SLAM®Hornet Fixed 1LED	535	115
SLAM®Hornet Fixed Linear 2LED	1020	115



The SLAM®Hornet Fixed–series has been designed, tested and certified for fixed use. There is no “X” –mark in the certificate for special conditions of safe use of the equipment. 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 SLAM®Hornet Fixed types are certified as follows. You may find brief explanation of the certificates beneath:

CE_{0537} Ex II 2 GD **Ex emb op is IIC T4 Gb**
Ex tb op is IIIC T 90 °C Db

CE_{0537} = 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 = Equipment category (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 (e.g Ex emb op is IIC T4 Gb) :

Ex = Certified for use in explosion hazardous areas
e = Explosion protection method increased safety (of certain components)
mb = Explosion protection method encapsulation (encapsulating ignition sources e.g. electronic ballast)
op is = Explosion protection method optically inherently safe (visible or infrared radiation that is incapable of producing sufficient energy under normal or specified fault conditions to ignite a specific hazardous athmosphetic mixture). This definition is analogues to the term “intrinsically safe” applied to electrical circuits

IIC = Equipment group (including explosion hazardous areas of IIA, IIB and IIC gases)
T4 = Maximum inside temperature of the unit is 135 °C (within the ambient temperature range of -20°C - +40°C)
Gb = Explosion Protection Level (EPL) marking for “HIGH” level of protection. Equipment for explosive **GAS** atmospheres, which is not a source of ignition in normal operation or during expected malfunctions.

Explanation of marking for explosion hazardous area due to Dusts (e.g Ex t IIIC T 90 °C Db):

Ex = Certified for use in explosion-hazardous areas
tb = Explosion protection method “protection by enclosure”
op is = Explosion protection method optically inherently safe (visible or infrared radiation that is incapable of producing sufficient energy under normal or specified fault conditions to ignite a specific hazardous athmosphetic mixture). This definition is analogues to the term “intrinsically safe” applied to electrical circuits
IIIC = Equipment group for conductive dusts (including IIIA, IIIB and IIIC dusts)
T 90°C = Maximum OUTSIDE surface temperature of the unit is 90 °C (within the ambient temperature range of -20°C - +40°C)
Db = Explosion Protection Level (EPL) marking for “HIGH” level of protection. Equipment for explosive **DUST** atmospheres, which is not a source of ignition in normal operation or during expected malfunctions

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 without the risk of static electricity.

Aluminium frame: All SLAM®Hornet Fixed–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.

Electronic control gear: The control gear in controlling the supply of energy to the light source of the luminaire.The contol gears are independent from each others. Under failure of one control gear, the other still continues operating. Low-voltage protection (smart-feature) brings reliability and convenience for use, especially when operating with transformers or with long cables.

Led module (LED): Light source combining Light Emitting Diodes with convenient and safe light distribution. Led module is explosion protected. Photobiological safety of Led module has been taken into account.

Cable: Standard cable of the SLAM®Hornet Fixed series is MCMK 2x2,5/2,5 cable.

Other common accessories:

- Antistatic protective film for PC tube against chemical splashes and other substances
- Fixing system for pole installation
- Fixing system for ceiling installation

1.4 Quality guaranteed

1.4.1 General

The SLAM®Hornet Fixed series is designed, certified, manufactured and tested under ISO 9001:2008 quality system as well as additional requirements of the Directive 94/9/EC (ATEX) and 2014/34/EU (ATEX) or IECEx scheme. The SLAM®Hornet 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 included in the delivery.

1.4.2 Individual testing reports

Each SLAM® 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 SLAM®Hornet Fixed–units according to standards relating to fixed 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 trough 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).

2. Prior to use

2.1 Selection of right equipment

You need to be sure that the equipment you intend to install into explosion-hazardous area matches up with the zone classification and other safety requirements related. The operator is solely responsible for the correct selection and use of the equipment at his site. 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).

SLAM® Hornet Fixed-units are designed and tested for fixed installation

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.

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)

SLAM® Hornet Fixed-units mentioned in this instruction fall into Category 2 equipment

2.1.3 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/IEC 60079-20-1 (Data for flammable gases and vapours, relating to the use of electrical apparatus).

SLAM® Hornet Fixed-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 ignition temperature is approximately 250 Celsius → Maximum allowed temperature class of the equipment is T3 (< 200° C)

- SLAM® Hornet Fixed -units mentioned in this instruction are Temperature Class T4 (GASES)
- SLAM® Hornet Fixed -units mentioned in this instruction are having maximum surface temperature of 90ºC (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. Some SLAM®Hornet luminaries are certified for temperatures between – 40°C --- + 40°C. Please see type label of the product for further data. 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!

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. In case of further training of using the equipment please contact the local supplier of this equipment.

3.2 Visual Inspection of SLAM®Hornet

As for all equipment to be used inside explosion hazardous area it is recommended that before taking the unit into Ex –area, at least 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)

Periodical inspections should be carried out according to IEC 60079-17.

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

3.3 Requirements for supply (electricity)

The following main requirements should be taken into account:

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.
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
Earth Leakage Circuit Breaker (ELCB): It is recommended to use a supply with 30 mA ELCB.

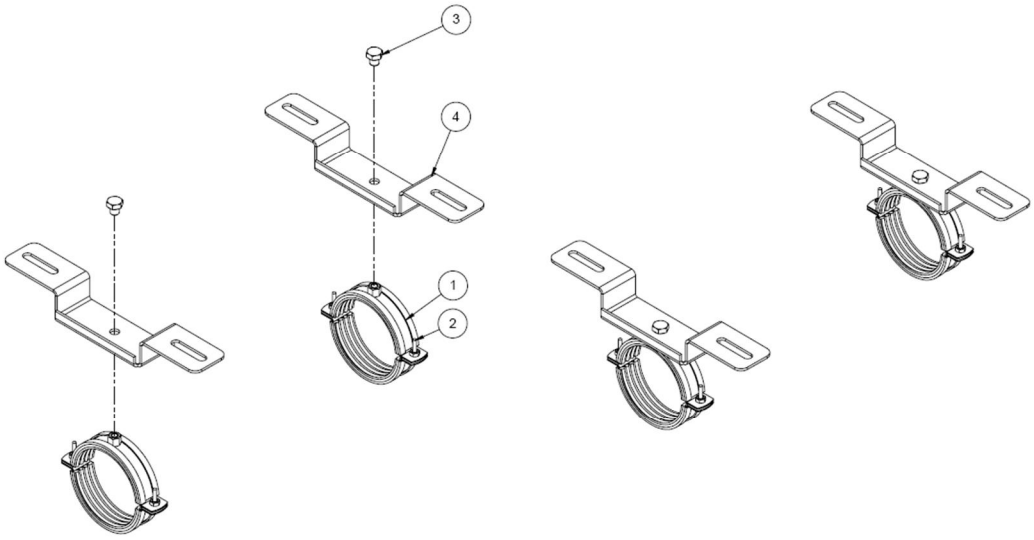
Please observe the type label for further data. Luminaires for 110 VAC or 230 V supply are to be connected to a supply incorporating protective earth conductor.

3.4 Accessories

SLAM Hornet Fixed is available with two fixing options. The fixing system for ceiling installation and pole installation.

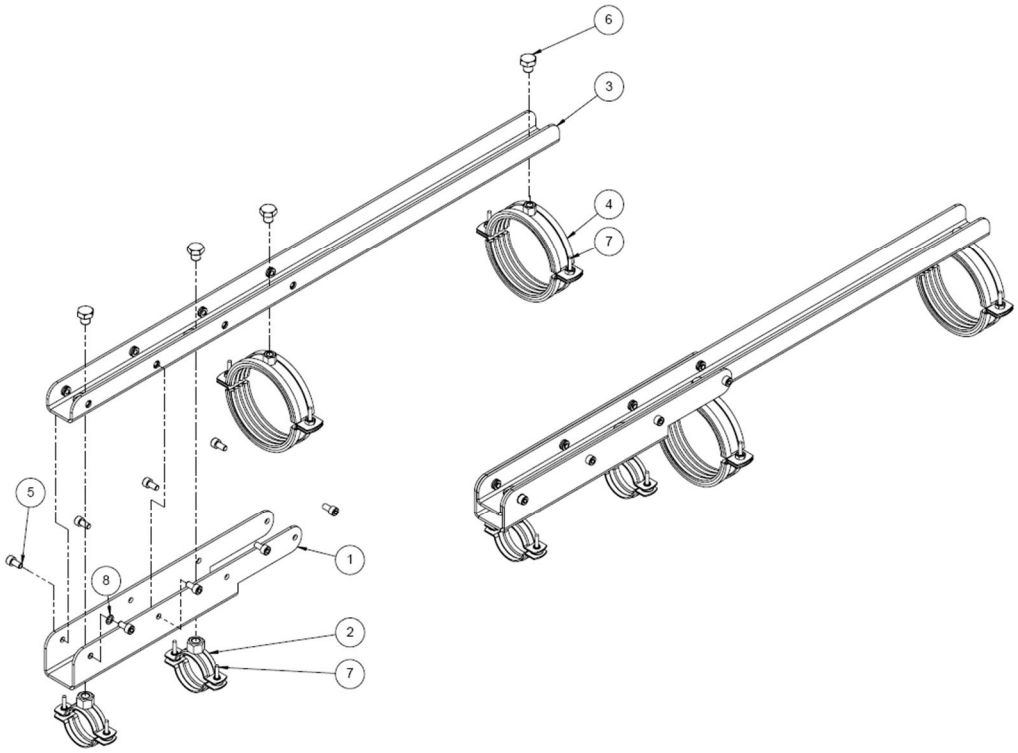
3.4.1 Ceiling installation

Install the luminary to the fixing bracket 1. and tighten with the screw 2.
Install both brackets to the luminary.
Fix the brackets to the ceiling from the holes on the metal plate 4 with approriate bolts or screws.



3.4.2 Pole installation

Install the luminary to the fixing brackets 4. and tighten with the screw 7 on those brackets.
Install the fixing brackets 2. to the pole. Tighten with screw 7 on those brackets.



4. Inspection & Maintenance

4.1 Inspection

The following procedures are allowed to carry out while the lamp is in use.

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)

4.2 Maintenance

The following procedure should be taken in case the SLAM®Hornet unit needs to be repaired:

1) Maintenance may be carried out only outside Ex –area

2) Person responsible for maintenance should have been trained the basics of explosion-protection as well electricity. Please refer e.g. EN/IEC 60079-19 for further details.

3) 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.

4) The dissipation feature (antistatic) on transparent parts of SLAM® Hornet may be damaged because of external affects like solvents or chemicals or mechanical stress. In case the surface of the PC-tube is damaged in one area greater than 100 cm^2 the part has to be changed. The surface resistance of the transparent parts has to be between 10000 Ω - 100 GΩ. Please contact Atexor Oy in case You need a simple measuring device, which is needed for measuring surface resistance of the PC-tube.

5) 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/IEC 60079-19 until returning the repaired unit back to operation. Below mentioned tests shall be done in addition to the tests specified in EN/IEC 60079-19. For acceptance criteria please refer to the original test report of the equipment which is included in the delivery

- 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 ensure safe operation of repaired equipment.

4.4 Repair report

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

4.6 More information about the use of Electrical Apparatus for Explosive Gas Atmospheres

Please observe the requirements of the valid standards of the day. Please study at least the following standards:

EN/IEC 60079-14 (Electrical installations in hazardous areas)
EN/IEC 60079-10 (Classification of hazardous areas)
EN/IEC 60079-17 (Inspection and maintenance of electrical installations in hazardous areas)
EN/IEC 60079-19 (Repair and overhaul for apparatus used in potentially explosive atmospheres)

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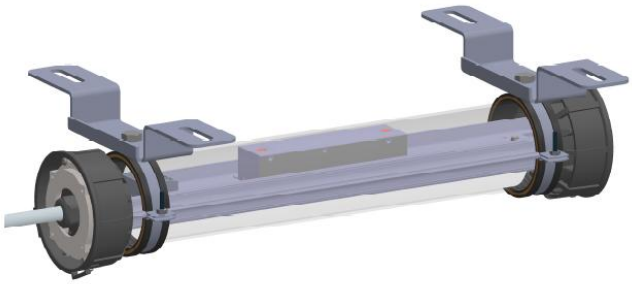

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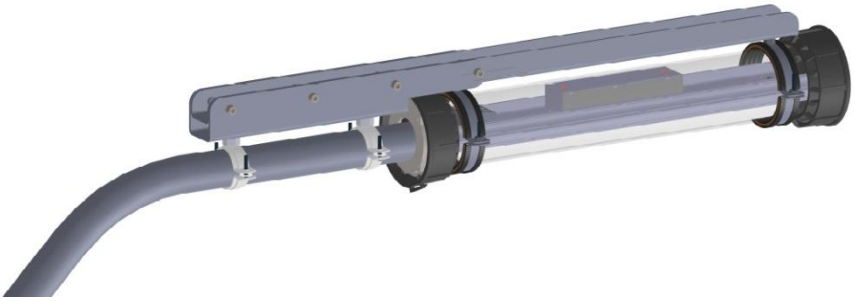

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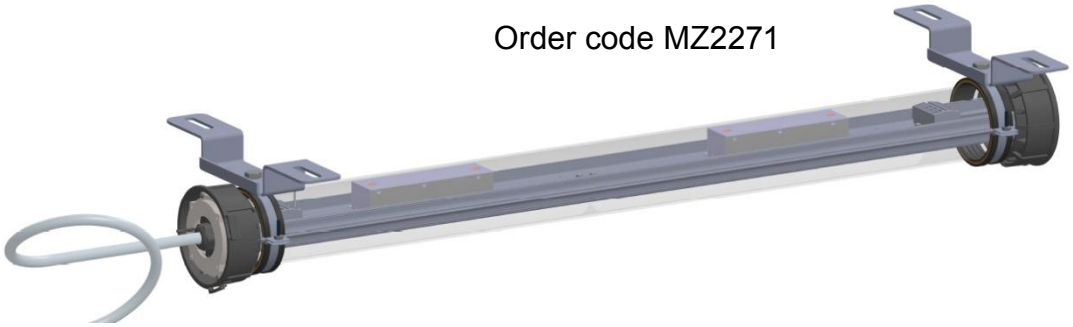

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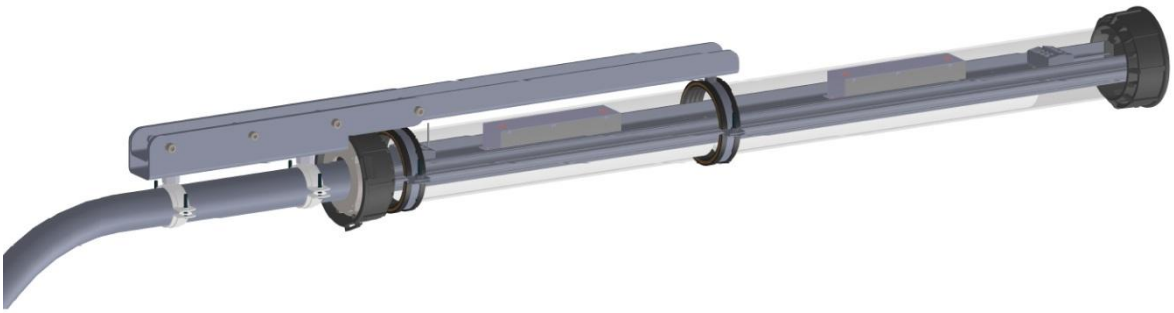

Helpdesk

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

Contact details:

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