



When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. Personnel in charge of installation and maintenance bear a special responsibility and must have required competence and knowledge of the applicable rules and regulations.

The instructions provide a summary of the most important safety measures and must be read by all personnel to ensure correct handling of the product.

The instructions have to be kept for future reference and must be available throughout the lifetime of the product.

Description

The Xbeam™ LTE EX is an ATEX, IECEx and NRTL cMETus approved RF antenna for creating wireless networks and wireless telemetry systems in hazardous area. The antenna is optimized for use in steel and concrete structure environments where multipath effects and reflections are present.

The Xbeam™ LTE EX is an ideal solution if the access point is placed in safe zone, and the antenna shall provide coverage in hazardous areas. Due to power loss in the Coax cables, the cable length should not exceed 30 m.

The antenna must be mounted by its base using the 4 off Ø11 holes for this. The base has to be connected to earth. The antenna is constructed with a permanently connected, unterminated coax cable that must be properly protected and the connection must be carried out in an appropriate certified Ex-e or Ex-d enclosure, or in safe area. Additional clamping of the cable shall be installed, to ensure that pulling and twisting is not transferred to the terminations inside the antenna.

Type Xbeam™ LTE EX

Explosion protection

ATEX

Ex type of protection

CE 2460

II 2 G Ex eb mb IIC, IIB, IIA T6 Gb
II 2 D Ex tb IIIC T85°C Db, IP66 / IP67

EU Type Examination Certificate

CML 22ATEX3353X

IECEx

Ex type of protection

Ex eb mb IIC, IIB, IIA T6 Gb
Ex tb IIIC T85°C Db, IP66 / IP67

Certificate of Conformity

IECEx CML 22.0050X

NRTL

Ex type of protection

Class I, Division 2, Grp A, B, C, D, T6
Class II, Division 2, Grp F, G, T85°C
Class I Zone 1, AEx Ex eb mb IIC T6 Gb
Class II Zone 21, AEx Ex tb IIIC T85°C Db

MET Listing Number

E115672

Ambient temperature range

-40°C ≤ Ta ≤ +60°C

Ingress Protection

IP66 / IP67

Technical data

Supply data

Un: Max 20 Vpp
P: IIC: 2 W
IIB: 3,5 W
IIA: 6 W
Frequency: 0,5 – 6 GHz

Production year

As stated on the marking label of the product

Serial number

As stated on the marking label of the product

Marking label

Please refer to notes on the marking label

Text label

'AVERTISSEMENT – RISQUE POTENTIEL DE CHARGE ÉLECTROSTATIQUE – VOIR LES INSTRUCTIONS'

'POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS'

Depending on the technical execution

Other applicable documents

Xbeam™ LTE EX Datasheet.

The retention of these documents is mandatory.

Increased Safety Product, BARTEC AS Xbeam™ LTE EX

Read these installation instructions carefully before mounting, installation, commissioning and maintenance.

Notes on the marking label

Specific conditions of use which are important for the installation, the use or the maintenance of the product will be unabbreviated adopted into this manual.

In case of loss always mention the type and serial/batch number at BARTEC office.

Types

Xbeam™ LTE EX F
| | | | | Frequency
| | | | | EX version of the Xbeam™ antenna
| | | | | Product version, LTE or XL
| | | | | Product type

Typical type code: Xbeam™ XL EX 2-6
means an Xbeam™ XL Ex eb IIC / Ex tb IIIC antenna with 2-6 GHz frequency

Typical type label:

	2460		II 2 G		Xbeam™ XL EX 2-6 Tamb -40°C ≤ Ta ≤ +60°C IP 66 / IP67 Max Input Power*: 2 W Frequency: 2-6 GHz Max Input Voltage: 20 V SN/Y:
	CML 22ATEX3353X		II 2 D		
E115672	IECEx CML 22.0050X		Ex eb mb IIC T6 Gb Ex tb IIIC T85°C Db	Class I, Division 2, Grp A, B, C, D, T6 Class I, Zone 1 AEx/Ex eb mb IIC T6 Gb	Class II, Division 2, Grp F, G, T85°C Class I, Zone 21 AEx/Ex tb IIIC T85°C Db
AVERTISSEMENT - RISQUE POTENTIEL DE CHARGE ÉLECTROSTATIQUE - VOIR LES INSTRUCTIONS WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS					

Safety Instructions

The technical data, which are on the marking label need to be maintained just like all possible warning (caution) texts on the outside of the product.

On the basis of the Category or EPL marking you'll have to verify that the product is installed in the correct zone.

Zone	Category	EPL	Suitability
0	1G only	Ga only	✘
1	2G	Gb	✓
2	3G or 2G	Gc or Gb	✓
20	1D only	Da only	✘
21	2D	Db	✓
22	3D or 2D	Dc or Db	✓

This table gives only information about main Equipment Protection Level which is applicable for the product. The marking label is leading.

The table shows in which zone this product may be installed under application of the belonging EU-Type Examination Certificate or IECEx Certificate of Conformity.

Rebuilds and changes to the product are not permitted.

Use explosion proof products in good shape only, which means; undamaged, healthy maintenance condition.

Take care of all national applicable safety & work instructions and all safety instructions mentioned in this manual whenever work is necessary to Ex products.

For installation requirements we redirect you to: EN 60079-14: 2014 or IEC 60079-14: 2013.

Marking

Particularly important points in these instructions are marked with a symbol:

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

Note

Important instructions and information on effective, economical and environmentally compatible handling.

Conformity to standards

The explosion proof control panels have been examined according following standards (depending on technical execution and application more than one standard may be applicable).

Main standards

EN 60079-0:2018 / IEC 60079-0:2017 Ed 7.0
 EN IEC 60079-7:2015+A1:2018 / IEC 60079-7:2017 Ed 5.1
 EN 60079-31:2014 / IEC 60079-31:2013 Ed 2.0
 EN 60529:1991/A1:2000/A2:2013/AC:2016-12
 EN 50581:2012, EN 50419:2006

UL 60079-0:2019,
 CSA C22.2 n° 60079-0:2019,
 UL 60079-7:2017,
 CSA C22.2 n° 60079-7A:2016 (R2021),
 UL 60079-18:2019,
 CSA C22.2 n° 60079-18:2016 (R2021),
 UL 60079-31 :2015,
 CSA C22.2 No. 60079-31 :2015
 UL 121201:2021,
 CSA C22.2 n° 213:2017,
 UL 62368-1-2019
 CSA C22.2 n° 62368-1-2019

Technical data

Page 1 of these installation instructions describes the exact technical execution. Below follows an overview of possible variants and the general technical data.

Marking according EN IEC 60079-0, UL 60079-0 and CSA C22.2 No. 60079-0

The marking on page 1 is leading.

Type(s) of Protection against ignition

Ex eb mb IIC, IIB, IIA T6 Gb
 Ex tb IIIC T85°C Db, IP66 / IP67
 Class I, Division 2, Grp A, B, C, D, T6
 Class II, Division 2, Grp F, G, T85°C
 Class I Zone 1, AEx Ex eb mb IIC T6 Gb
 Class II Zone 21, AEx Ex tb IIIC T85°C Db

Gas group

This product is certified for gas: IIC, IIB, IIA
 This product is certified for gas Grp: A, B, C, D

Dust group

This product is certified for dust: IIIC
 This product is certified for dust Grp: F, G

Temperature class or maximum surface temperature

The temperature class for this product is:
 T6 / T85°C

Equipment Protection Level

The EPL for this product is: Gb and Db.

Ingress Protection degree

The product has an IP66 / IP67 rating according to EN / IEC 60529.

Ambient temperature range

-40°C to +60°C.

Maximum ambient temperature range

-40°C to +60°C.

Note

For deviating ambient conditions, please consult BARTEC.

Enclosure material

Seawater resistant anodized Aluminium and POM.

Max. input voltage

20 Vpp (peak to peak)

Max. input power

IIC = 2 W, IIB = 3,5 W, IIA = 6 W

Impedance

50 Ω

Coax Cable Types

Contact BARTEC AS for further info

Transport, Storage

NOTICE

Damage to the control panel through incorrect transport or incorrect storage.

- Transport and storage are permissible in original packaging only.

Assembly / Disassembly

WARNING

Risk of injury due to incorrect proceedings.

- When installing and operating Ex equipment, take care of the applicable safety standards and generally known electrical safety standards.
- **WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD.**
- **AVERTISSEMENT – RISQUE POTENTIEL DE CHARGE ÉLECTROSTATIQUE – VOIR LES INSTRUCTIONS.**

Important Note:

- The Xbeam™ LTE EX Antenna cannot be opened and has no physical wiring terminals. The Coax Cable that must be properly protected and the connection must be carried out in an appropriate certified Ex-e or Ex-d enclosure or in safe area. Additional clamping of cable shall be installed to ensure that pulling and twisting is not transferred to the terminations inside the antenna.

Mounting and Installation

Mounting

The Xbeam™ LTE EX Antenna shall be mounted as a free standing component with a flying lead Coax Cable. It shall be mounted using the dedicated fixing holes, 4 off Ø11, in the base of the antenna. It may be mounted in any orientation. The fixing bolts must have a length of minimum 35 mm.

Fig 1. Fixing holes for the Xbeam™ LTE EX Antenna (all dimensions in mm).

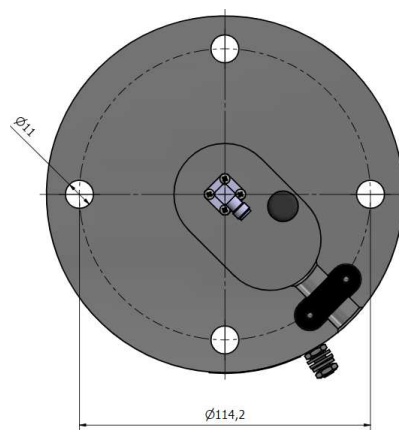
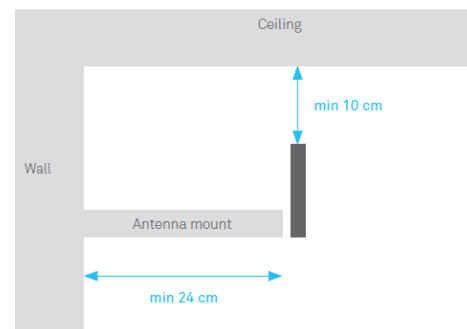


Fig 2. Physical dimensions of the Xbeam™ LTE EX Antenna (approx. dimensions in mm).



Installation

- Find an appropriate installation point where the radio waves can most freely reach and be transmitted from the antenna:



Checklist for Antenna / Wi-Fi Network Installation

01	Choose the shortest cable length possible.
02	Place antennas visible from several angles (corners etc).
03	Generally place the antenna as high on the wall as possible (10 cm clearance to ceiling).
04	Leave two wavelengths (24 cm) between wall and antenna.
05	Don't hide the antenna behind obstacles.
06	Don't place the antenna horizontally.
07	Angle the antenna slightly downward when placed above ceiling height (check pattern).
08	Use a site survey tool to determine coverage (Netstumbler etc).
09	Check for Wi-Fi channel interference (using Netstumbler etc).
10	We recommend max 30 meters antenna cable for unamplified configuration and maximum 50 meters cable for amplified configurations.

- On a rigid surface:
 - Use the four Ø11 mm holes on the base of the antenna and fix the antenna to a rigid surface.
- Connect a ≥ 4 mm² PE wire for equipotential bonding from the M5 earth bolt on the antenna base to ground. A corrosion resistant Crimp Ring Terminal, Ø5, and with a cross section that equals the PE wire must be used.
- Clamp the Coax Cable securely so that the Coax Cable is without tension as it enters the antenna and to avoid any pulling and twisting of the Coax Cable.
- Connect the Coax Cable in an appropriate certified Ex-e or Ex-d enclosure or in safe area.

Commissioning

Before commissioning, check that:

- The product has been installed in compliance with the manufacturer instructions.
- The product is not damaged.
- The device functions perfectly.
- Perform an 'Initial Inspection' according to EN IEC 60079-14.

Operation

DANGER

Death or serious injury through improper use.

- The Xbeam™ LTE EX may be operated only within the technical limits that apply to it (see page 1).
- The Xbeam™ LTE EX Antenna is a sealed device with a flying lead Coax Cable. It is not possible to take the antenna apart. If the antenna for some reason breaks, it must be replaced with a new antenna.

Maintenance and Fault Clearance

WARNING

Risk of injury due to incorrect proceedings.

- The national valid regulatory for maintenance, inspection, and repair is applicable for electrical equipment for the use in hazardous areas.
- Damaged Ex components must be directly replaced by genuine BARTEC parts.

Maintenance cycles

The Xbeam™ LTE EX Antenna does not require any specific maintenance at regularly scheduled intervals. One must make sure that the antenna is kept free of dust.

In case of malfunction, it must be replaced with a new antenna.

Inspection of the Xbeam™ LTE EX Antenna is limited to ensuring that encapsulation, seals and mounting are tight and secure. There are no moving parts or adjustments possible, nor can the housing be opened.

NOTICE

Any attempts made to open the housing, may void the warranty.

Inspection

Follow the national law and regulatory for inspection of explosion proof equipment. This should be done by skilled and qualified personnel only.

Replacing the Xbeam™ LTE EX

- In case of a fatal error of a Xbeam™ LTE EX, the antenna must be replaced by a new unit. Repair or maintenance are not allowed by unauthorized personnel.

Troubleshooting

- Troubleshooting involves checking the functionality of the antenna. If you require assistance, contact your distributor.

Specific conditions

Under certain extreme circumstances, the product may be considered to be a potential electrostatic charging hazard. The risk of electrostatic discharge shall be minimized as stated in IEC 60079-0 / UL 60079-0 / CSA C22.2 No 60079-0 clauses 7.4.2 and 7.4.3. Wipe only with a damp cloth.

The maximum effective output power is limited to the following values:

- Gas group IIA = 6W
- Gas group IIB = 3.5W
- Gas group IIC = 2W

The Xbeam™ LTE EX antenna must be connected to earth.

The Xbeam™ LTE EX Antenna shall be marked with the following warning text:

'POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS'

'AVERTISSEMENT – RISQUE POTENTIEL DE CHARGE ÉLECTROSTATIQUE – VOIR LES INSTRUCTIONS'

The use of the device in case of excessive deposits of dusts superior of 50mm according to EN / IEC 60079-31 is not allowed.

Disposal

The antenna contains metal, electronic components and plastic parts. Therefore, the statutory requirements for disposing of electronic scrap (WEEE) must be observed (e.g. disposal by an approved disposal company). The antenna is also marked with the wheeled bin symbol for WEEE:



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