

# Horn Loudspeaker

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Invented for life



- ▶ Suitable for marine and industrial applications in humidity-, chlorine- and salty environments
- ▶ Glass reinforced polyester housing with fire-retardant properties
- ▶ Water- and dust-protected to class IP67
- ▶ Provisions for internal mounting of the optional supervision boards.
- ▶ Type approval certified EN 60945 and EN54-24 certified

The Horn Loudspeaker LH2-UC15E is specifically designed for excellent sound reproduction in marine applications and other industrial environments. The housing is rugged, water- and dust-protected, and resistant to the corrosive effects of seawater and most industrial atmospheres.

The horn loudspeaker is made from an UV-stable, glass reinforced polyester (GRP). This strong, fire-resistant and corrosion resistant material is chemical resistant and thermally stable, making it ideal for even the harshest environments. The horn is standard supplied with a stainless steel mounting bracket.

## Functions

The horn loudspeaker is standard supplied with a sturdy mounting bracket allowing the sound beam to be accurately directed.

The mounting bracket has a ratchet facility to ensure it stays correctly positioned.

The connection cable is fed out through an ABS cable gland (PG13.5) in the rear cover, which can be removed for entering the inside connection terminal. For loop-through connection, the rear cover is fitted with a second hole (covered with a blanking plug as standard supplied).

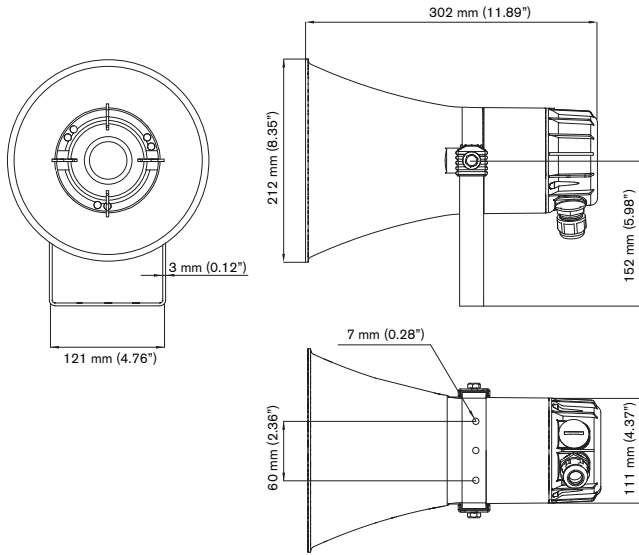
The horn loudspeaker includes a transformer for both 70 V and 100 V input voltage, with taps on the primary winding for different power settings.

Nominal full-power, half-power, quarter-power or eight-power radiation (i.e. in 3 dB steps) can easily be selected by connecting to the appropriate terminal of the 6-way screw terminal block.

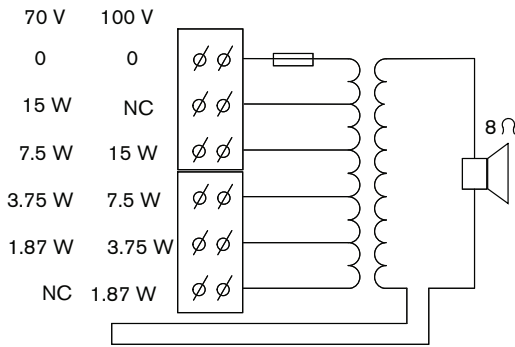
The horn loudspeaker has built-in protection to ensure that, in the event of a fire, damage to the loudspeaker does not result in failure of the circuit to which it is connected. In this way, system integrity is maintained; ensuring loudspeakers in other areas can still be used to inform people of the situation.

The horn loudspeaker has ceramic screw-terminal connection blocks, thermal fuse, heat-resistant high temperature wiring and has a provision for internal mounting of the optional line/loudspeaker supervision boards.

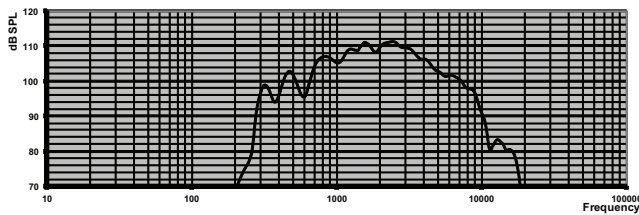
For enabling loudspeaker supervision, a wire loop from the secondary side of the horn loudspeaker is available in the connection area. This wire loop is normally closed, but in case of use with the supervision board, cut and connected.



Dimensions in mm (inch)



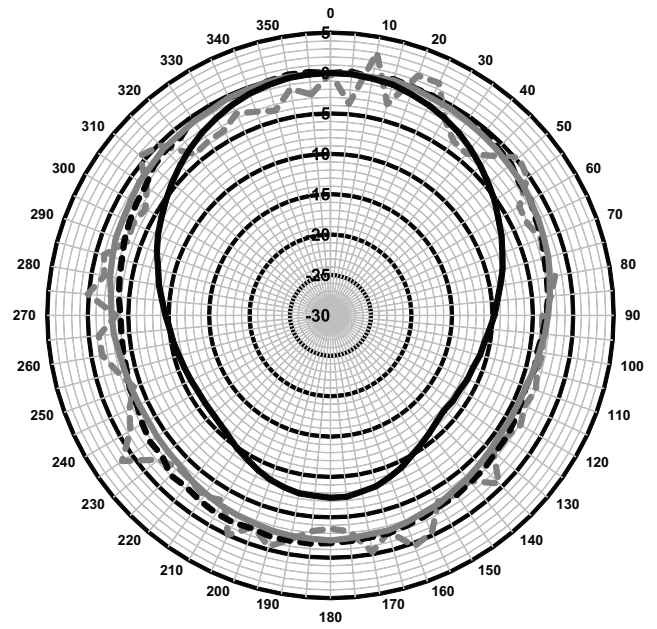
Circuit diagram



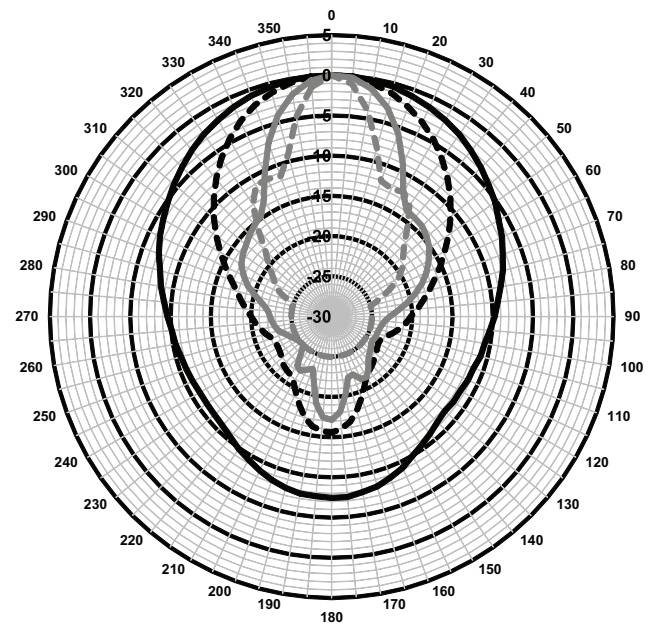
Frequency response

To meet EN54-24 requirements, below stated 1/3 octave band equalization is required:

| 1/3 octave band (Hz) | EQ setting |
|----------------------|------------|
| 250 Hz               | -2 dB      |
| 1600 Hz              | -3 dB      |
| 2000 Hz              | -1 dB      |
| 6300 Hz              | +3 dB      |



--- 125    - - - 250    — 500    ——— 1000



—— 1000    - - - 2000    — 4000    - - - 8000

Polar diagrams (measured with pink noise)

Octave band sensitivity \*

|              | Octave SPL<br>1W/1m | Total octave<br>SPL<br>1W/1m | Total octave<br>SPL<br>Pmax/1m |
|--------------|---------------------|------------------------------|--------------------------------|
| 125 Hz       | 55.2                | -                            | -                              |
| 250 Hz       | 93.4                | -                            | -                              |
| 500 Hz       | 99.8                | -                            | -                              |
| 1000 Hz      | 107.8               | -                            | -                              |
| 2000 Hz      | 110.8               |                              |                                |
| 4000 Hz      | 107.6               | -                            | -                              |
| 8000 Hz      | 99.3                | -                            | -                              |
| A-weighted   | -                   | 104.9                        | 115.2                          |
| Lin-weighted | -                   | 104.1                        | 114.9                          |

Octave band opening angles

|         | Horizontal | Vertical |  |
|---------|------------|----------|--|
| 125 Hz  | 360        | 360      |  |
| 250 Hz  | 360        | 360      |  |
| 500 Hz  | 360        | 360      |  |
| 1000 Hz | 119        | 119      |  |
| 2000 Hz | 68         | 68       |  |
| 4000 Hz | 38         | 38       |  |
| 8000 Hz | 23         | 23       |  |

Acoustical performance specified per octave  
\* (all measurements are done with a pink noise signal; the values are in dB SPL).

**Certifications and approvals**

**Quality assurance**

All Bosch loudspeakers are designed to withstand operating at their rated power for 100 hours in accordance with IEC 268-5 Power Handling Capacity (PHC) standards. Bosch has also developed the Simulated Acoustical Feedback Exposure (SAFE) test to demonstrate that they can withstand two times their rated power for short durations. This ensures improved reliability under extreme conditions, leading to higher customer satisfaction, longer operating life, and lessens the chance of failure or performance deterioration.

|                           |  |
|---------------------------|--|
| Safety                    | According to EN 60065                          |
| Emergency                 | According to EN 54-24 / compliant to BS 5839-8 |
| Type approval certified   | According to EN 60945                          |
| Water and dust protection | According to EN 60529, IP 67                   |
| Salt mist                 | According to IEC 60068-2-11                    |

|                    |                             |
|--------------------|-----------------------------|
| Chlorine resistant | According to IEC 60068-2-60 |
| Wind force         | According to Bft 11         |

| Region | Certification |
|--------|---------------|
| Europe | CE            |

**Parts included**

|   |                             |
|---|-----------------------------|
| 1 | LH2-UC15E Horn Loudspeaker  |
| 1 | Installation instruction    |
| 1 | PG13.5 cable gland (fitted) |

**Technical specifications**

**Electrical\***

|   |  |
|---|--|
| Maximum power   | 22.5 W   |
| Rated power (PHC)   | 15 W   |
| Power tapping   | 15 / 7.5 / 3.75 / 1.87 W   |
| Sound pressure level at rated power / 1 W (1 kHz, 1 m)  | 120 / 108 dB (SPL)   |
| Sound pressure level at rated power / 1 W (1 kHz, 4 m) (reference axis 0 degrees, free field) | 102 / 90 dB  |
| Effective frequency range (- 10 dB)   | 300 Hz to 9 kHz  |
| Opening angle at 1 kHz / 4 kHz (-6 dB)  | 119° / 38°   |
| Rated input voltage   | 70 / 100 V   |
| Rated impedance   | 334 ohm (15 W at 70 V)<br>667 ohm (7,5 W at 70 V / 15 W at 100 V)<br>1333 ohm (3,75 W at 70 V / 7,5 W at 100 V)<br>2667 ohm (1,87 W at 70 V / 3,75 W at 100 V)<br>5347 ohm (1,87 W at 100 V) |
| Electrical connection   | 6-pole screw terminal  |
| Acceptable wire gauge   | 1.0 – 2.3 mm   |

\* Technical performance data acc. to IEC 60268-5


**Mechanical**

|                        |                                   |
|------------------------|-----------------------------------|
| Dimensions (L x D max) | 302 x 212 mm<br>(11.89 x 8.35 in) |
| Weight                 | 2.25 kg (4.96 lb)                 |
| Color                  | Light grey (RAL 7035)             |
| Material horn          | Glass Reinforced Polyester (GRP)  |

|                           |                                    |
|---------------------------|------------------------------------|
| Material mounting bracket | Stainless steel (grade 316)        |
| Cable diameter            | 6 mm to 12 mm (0.24 in to 0.47 in) |

### Environmental

|                       |                                      |
|-----------------------|--------------------------------------|
| Operating temperature | -55 °C to +70 °C (-67 °F to +158 °F) |
| Storage temperature   | -40 °C to +70 °C (-40 °F to +158 °F) |
| Relative humidity     | <95%                                 |

|  |
|--|
| <br>1438  |
| Bosch Security Systems BV<br>Torenallee 49, 5617BA Eindhoven, The Netherlands<br>10<br>0560-CPR-142190008  |
| EN 54-24:2008<br><br>Loudspeaker for voice alarm systems<br>for fire detection and fire alarm systems for buildings<br><br>Horn Loudspeaker 15W<br>LH2-UC15E<br>Type B |

### Ordering information

#### Horn Loudspeaker

Horn Loudspeaker 22.5 W, Glass Reinforced Polyester (GRP) IP 67 housing, high-quality speech and music reproduction, IP67 water and dust protected, salt mist and chlorine resistant, EN 60945 and EN54-24 certified, light grey RAL7035.

Order number **LH2-UC15E**

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