OPERA
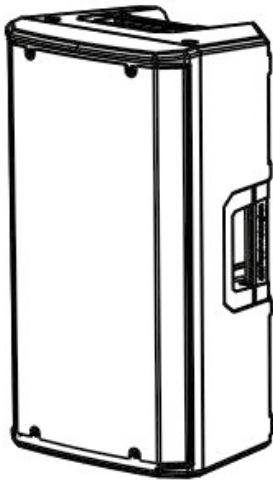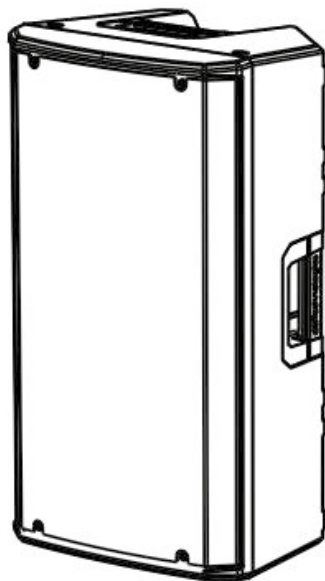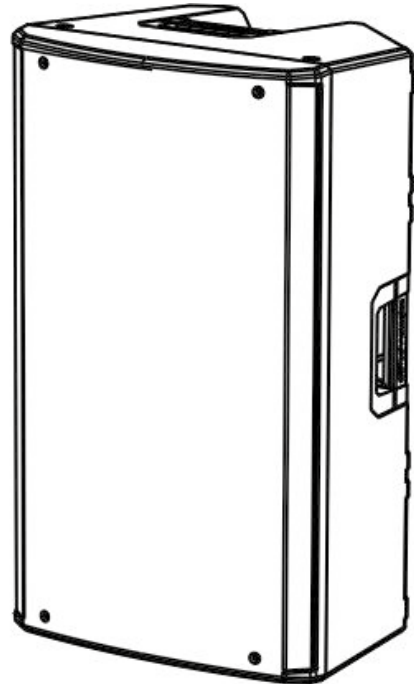
OPERA10

OPERA12

OPERA15

USER MANUAL - Section 1

The warnings in this manual must be observed together with the "User Manual - Section 2".

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CE

TABLE OF CONTENTS

1. GENERAL INFORMATION

WELCOME!

Thanks for purchasing a product designed and developed in Italy by dBTechnologies! This ergonomic and versatile active speaker is the product of several years of experience and innovation in the sound reinforcement industry, using cutting-edge sound, electronic and material research solutions.

PRODUCT OVERVIEW

The new active OPERA speakers are equipped with a 1" compression driver (output: 1.4") for the high section. A 10", 12", and 15" transducer (voice coil: 2") for medium-low frequencies, is fitted on OPERA10, OPERA12, OPERA15 respectively. These speakers main features include:

- an ergonomic, compact and versatile project that can be used in monitoring for small live contests
- acoustic asymmetry of horn for high frequencies, optimized for efficient use in different indoor and outdoor situations
- reliable and silent amplifier that does not require active ventilation
- input (up to 2) versatility of use, for instance for the amplification of a voice and an instrument at the same time
- versatility of output connection, for audio relay of the mixed signal or LINK
- presets that can be selected for an equalization through DSP for any type of use

USER REFERENCE

To make the most of your OPERA speaker, we recommend that you:

- Read the quick start user manual included in the package and this user manual thoroughly and keep this manual during the whole life of the product.
- Register your product at http://www.dbtechnologies.com under "SUPPORT".
- Keep proof of purchase and WARRANTY (User manual "section 2").

MECHANICAL AND ACOUSTICAL FEATURES

DIMENSIONS

The OPERA series has been designed with the intent to optimise weight and dimensions.
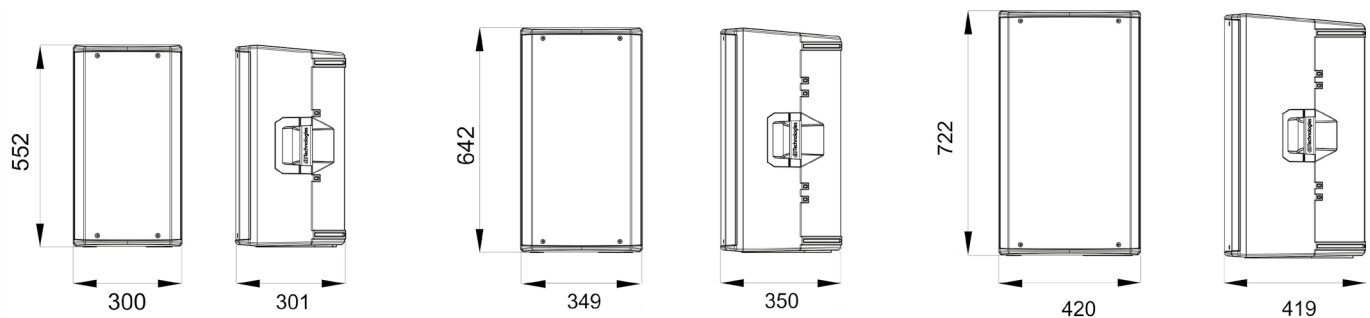The cabinet is lighter but more resistant, and features 2 handles, one on the side and one at the top, for easy handling.
For a quick comparison of the 3 models, the overall dimensions are the following:

OPERA10 - 300 mm (L), 552 mm (H), 301 mm (W)
OPERA12 - 349 mm (L), 642 mm (H), 350 mm (W)
OPERA15 - 420 mm (L), 772 mm (AH), 419 mm (W)

SOUND COVERAGE

The special design of the horn, shown in the figure, is common for all 3 models.
In horizontal, the coverage is differentiated between the value of 85° (upper part) and 120° (lower part).
This is to optimise sound emission, for example during vertical installation in reverberant environments.
The special design of the horn, shown in the figure, is common to the 3 models. The overall vertical opening (85°) is asymmetrical, to increase the sound pressure of the horn at long distance.
In case of use with monitoring function or in case of horizontal positioning (wall-mounted) of the speaker, take these data into account so as to calculate the correct coverage of the environment.
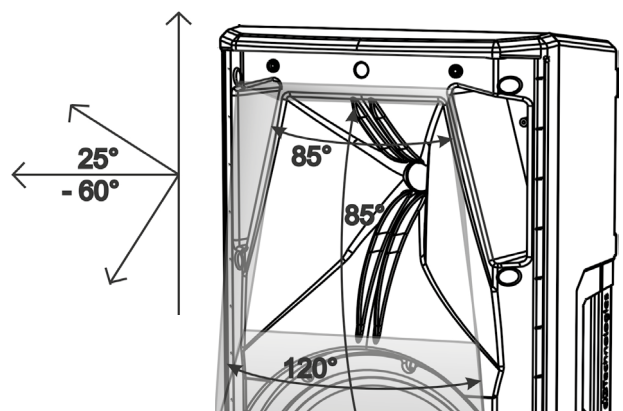
FEATURES OF THE AMPLIFIER AND CONTROL SECTIONS

Class D digital amplifier is at the heart of the OPERA series. The system is silent and does not require a fan cooling. The system is controlled by a dedicated powerful DSP that manages the different parameters.
The sound amplification power is 600 W RMS for all models.

WARNING!

- **Protect the unit from moisture.**
- **Never attempt to disassemble the amplifier in any way.**
- **In the event of a malfunction, remove power supply immediately by disconnecting the unit from the power mains and contact an authorised repair centre.**
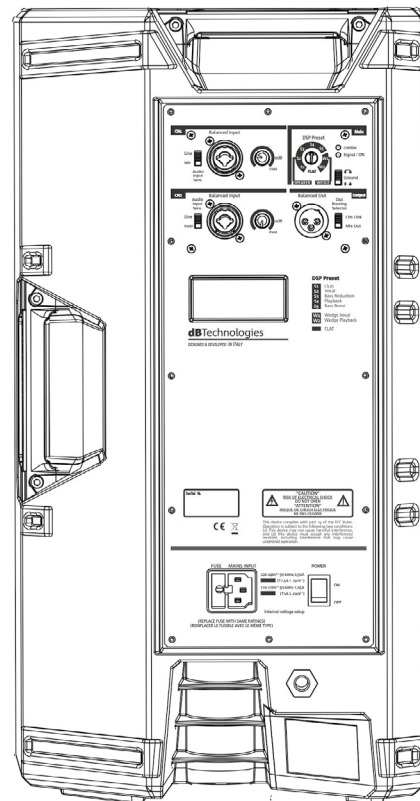
The DIGIPRO G3 panel is made up of:

- **Input, Output and Control Section**
- **Power Supply Unit Section**

INPUT, OUTPUT AND CONTROL SECTION

1. "CH1" INPUT SECTION
Equipped with a Combo connector to connect cables with both XLR and TRS connectors (balanced and unbalanced), it includes the regulation of the channel level and a switch to adapt the impedance to line level ("Line"), or to microphone level ("Mic").

2. "CH2" INPUT SECTION
Provided with Combo connector to connect cables with XLR and TRS (balanced and unbalanced) connectors, includes channel level adjustment and a switch to adjust input impedance ("Line" or "Instr"). "Instr" refers to a high impedance such as that of a guitar or bass.

3. "Main" GENERAL SETUP SECTION
It includes the 8-position "DSP Preset" rotary switch, the "Limiter" and "Signal / ON" LED indicators and the "ground lift" switch.

4. DSP PRESET - TABLE
The selectable presets are shown in this table as a reminder.

S1 - Club, suitable for a medium-small indoor environment
S2 - Vocal, optimises for vocal playback and performance
S3 - Bass reduction, with attenuation of low frequencies, for use in reverberant environments
S4 - Playback, optimised for music playback (such as MP3 reader)
S5 - Bass boost, suitable to emphasise low frequencies

Recommended presets for monitor use (wedge):
W1 - Wedge Vocal, to be used with monitor (wedge) position and vocal performance
W2 - Wedge Playback, to be used in monitor (wedge) position and playback of a music programme

Preset that excludes any equalization:
FLAT - to be set if no equalization is required

5. "Output" SECTION
Equipped with connector for balanced cable (XLR), it also includes the "Out Routing Selector", required to differentiate the output inputs in case of connection to a second speaker.
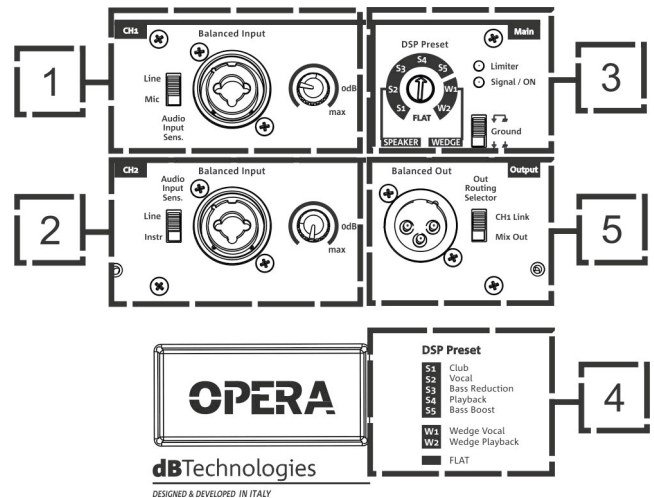
POWER SUPPLY UNIT SECTION
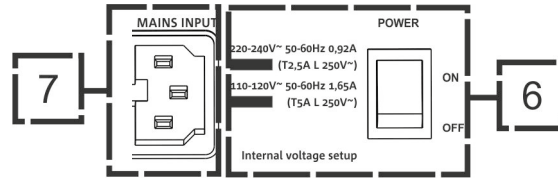
7. MAINS INPUT
Input for VDE connector for connection to the mains.

6. ON/OFF SWITCH
Switch for turning device ON or OFF.

WARNING!

Do not use the speaker for long periods of time when the Limiter LED is steady on or constantly blinking, as this indicates that the module is operating under excessive stress under distortion conditions.

Use only high quality and in good condition cables. The use of poor quality or damaged cables could affect speaker operation.

2. FIRST POWER-UP

PACKAGE CONTENTS

Check that the package content of the OPERA 10 \ OPERA 12 \ OPERA 15 speaker is complete.
The package contains:

- OPERA speaker
- VDE power cable
- quick start user manual and warranty documents

USAGE

INPUT CONNECTIONS

MIXER / LINE

MICROPHONE

INSTRUMENT (HIGH IMPEDANCE)

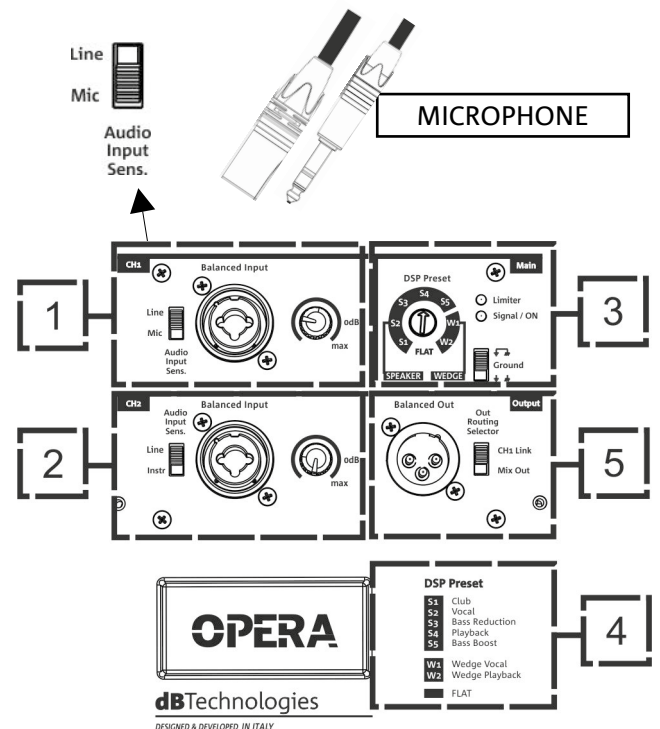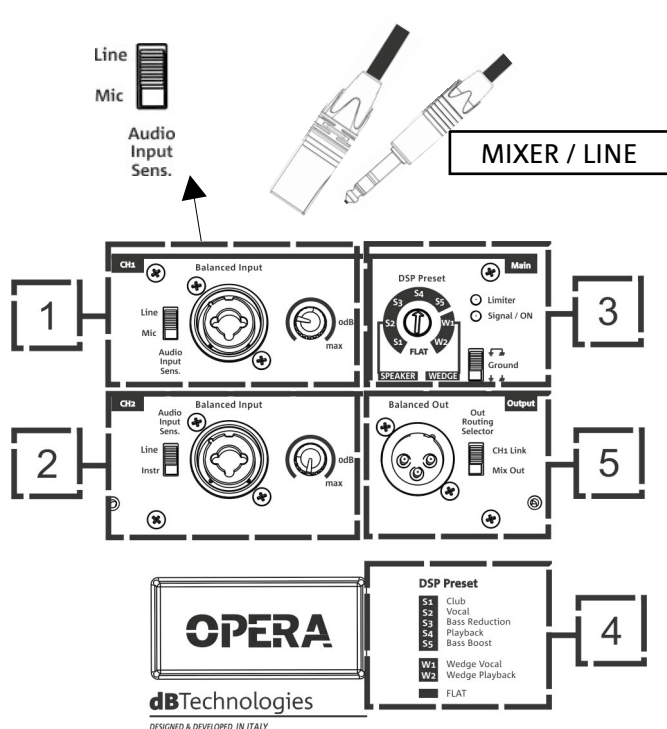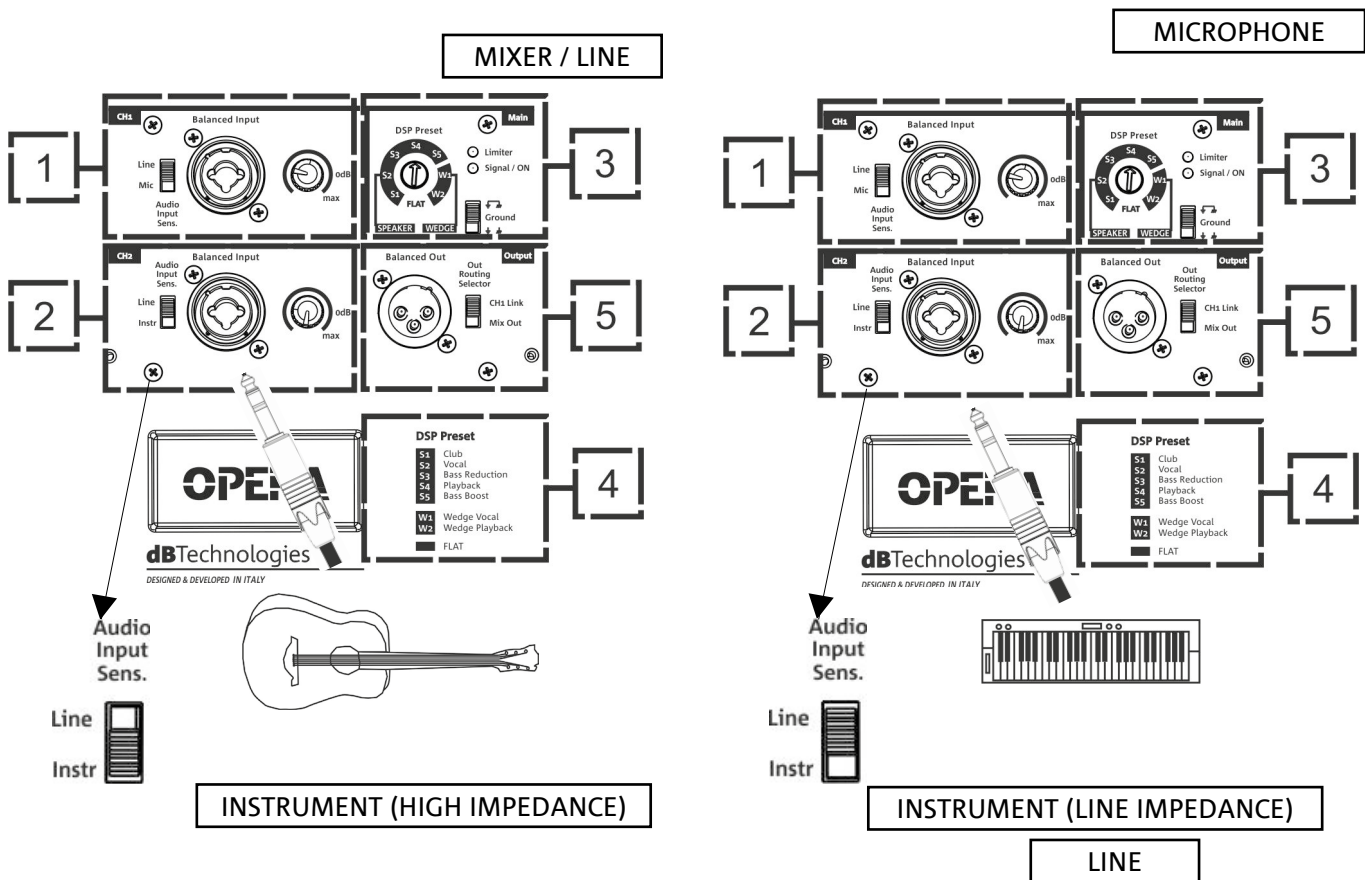INSTRUMENT (LINE IMPEDANCE)

LINE

It is possible to connect up to 2 inputs in the input and control section at the back of the speaker. Following are only few examples of configuration used (1 input and 2 inputs).

CH1 (1): it is possible to connect a source through a cable with balanced or unbalanced connector (TRS, XLR). Select the input type using the Input Sensitivity Switch. In particular, in case of microphone input, select "MIC".

CH2 (2): it is possible to connect a source through a cable with balanced or unbalanced connector (TRS, XLR). Select the input type using the Input Sensitivity Switch. In particular, in case of input with high impedance, such as the one of a guitar or a bass guitar, select "Instr". Instruments or devices with line impedance (such as a keyboard or a stereo player) require instead a "LINE" setting.

Adjust the level of each connected channel.

Once inputs are connected, select the correct DSP preset (1).

In case of problems related to ground loops, it is possible to solve the problem by setting the relevant selector (3) to the correct position, as shown below.
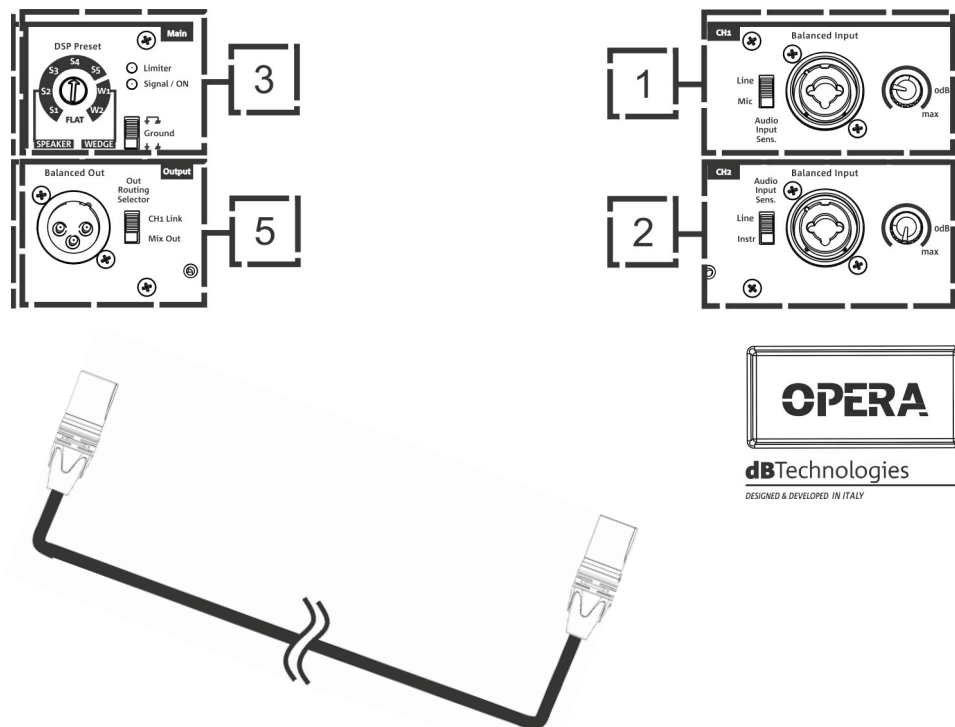
POWER SUPPLY CONNECTION

• Connect the power cable to the socket (7), then set the turning on selector (6) to ON. The Limiter LED (3) blinks briefly.

POWER SUPPLY

```
MAINS INPUT                              POWER
7      220-240V~ 50-60Hz 0,92A              ON      6
       (T2,5A L 250V~)
       110-120V~ 50-60Hz 1,65A
       (T5A L 250V~)                        OFF
       Internal voltage setup
```

CONNECTING THE OUTPUTS OF MULTIPLE MODULES (audio daisy chain)

```
Main                                      CH1          Balanced Input
DSP Preset    ○ Limiter      3                  Line
 S3 S4 S5     ○ Signal / ON                      Mic    1      0dB
S2      W1                                       Audio          max
S1      W2                                       Input
  FLAT                                           Sens.
SPEAKER WEDGE  Ground
Balanced Out        Output                  CH2          Balanced Input
              Out                                Audio
              Routing                            Input
              Selector         5                 Sens.  2      0dB
                  CH1 Link                        Line          max
                  Mix Out                         Instr
```

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It is possible to connect the output of an OPERA speaker to a second speaker using a cable with XLR balanced connector, which connects the output (2) of the first speaker to the input (5) or (4) of the second speaker.
Set the relevant selector to "LINE".

The Out Routing Selector (2) in "CH1 link" position allows providing the output of the second speaker with only the signal coming from the CH1 (5) channel. In the "Mix Out" position, it allows the CH1 (5) and CH2 (1) channel mixing.

⚠️ WARNING!
Use only good quality cables.
Replace any damaged cable to prevent malfunctioning and sound poor quality.

4. USAGE EXAMPLES

⚠️
- **Types of installation other than those here described are not allowed.**
- **Never use the handles to suspend the speaker**
- **Always check that the positioning is stable and that the installation does not pose a danger to people, animals or property**
- **Install on horizontal surface not inclinated, otherwise** an additional mechanical fastening or a belt fastening is required to correctly fix the installation.
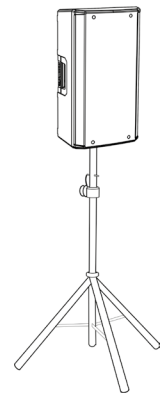
USAGE ON STAND

1 OPERA speaker can be installed on a tripod stand, coming as standard option with a 35 mm diameter pole. The maximum allowed height between the speaker base and the floor is 160 cm.
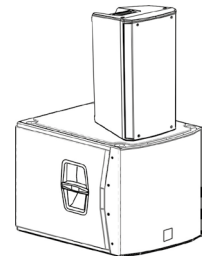
⚠️
WARNING!
- **Use a suitably sized stand with the central leg pointing forward to provide appropriate stability.**

## USAGE ON SUBWOOFER

Through the installation with the DS-2S accessory, it is possible to use 1 OPERA directly on subwoofer provided with M20 hole.

INSTALLATION ON SUBWOOFER WITH POLE

It is possible to use only one speaker mounted on a 35 mm diameter pole. The maximum allowed height between the speaker base and the floor is 160 cm.
In case of use of DVA S08DP or SUB28D an additional mechanical fastening or a belt fastening is required to correctly fix the installation.
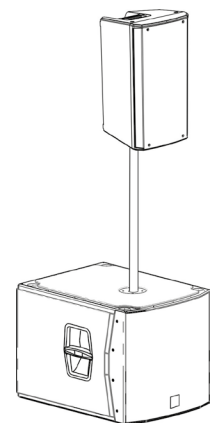
WEDGE (MONITORING) INSTALLATION

In some cases the OPERA series speakers can be used as monitors for small live contests. In this case, lay them horizontally on the tilted side. Be reminded of the sound coverage features reported in the relevant section. Use the suitable DSP settings as indicated in the "DSP preset" table in wedge mode (**W1**, **W2,** or **FLAT**).

WALL-MOUNTING WITH BRACKETS

The OPERA models can be wall-mounted in vertical or horizontal position through the WB-OP10, WB-OP12, WB-OP15 accessory, to be used with OPERA10, OPERA12, OPERA15, respectively.
For further details refer to the instructions relevant to this accessory.
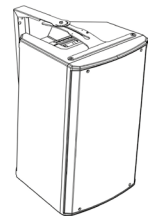
INSTALLATION ON TRUSS WITH BRACKETS AND ALISCAFF COUPLERS

The OPERA models can be installed on a truss in vertical or horizontal position, through the WB-OP10, WB-OP12, WB-OP15 accessory, to be used with OPERA10, OPERA12, OPERA15, respectively. This accessory allows the use of aliscaff couplers (not included) for this special configuration.
For further details refer to the instructions relevant to this accessory.
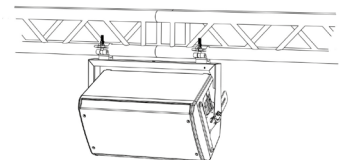
INSTALLATION WITH EYEBOLTS

Is it possible to install the speaker using eyebolts. Positioning is represented in the opposite figure, in which the rear eyebolt allows to adjust the final angle (MAX 45°).

max 45°

M10
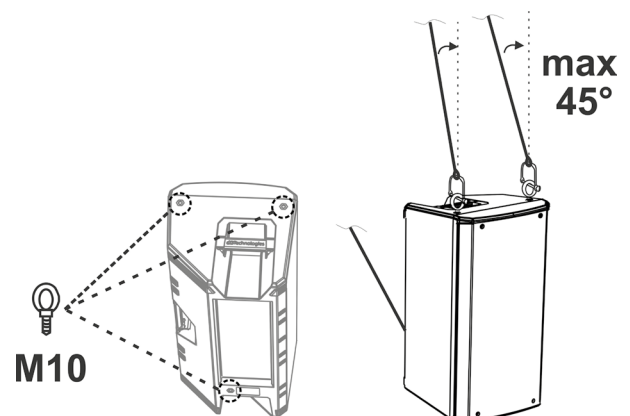
5. ACCESSORIES

The following optional accessories are available to complete the series:

- SSB2
- Wall bracket OP-WB10, OP-WB12, OP-WB15, for OPERA10, OPERA12, OPERA15, respectively
- Rain Cover RC-M1, valid for all models
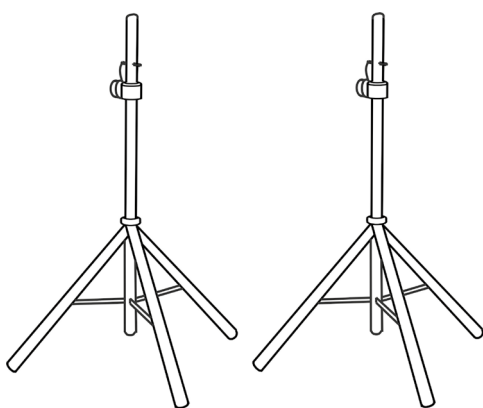
| SSB2 | BRACKETS | RAIN COVER |

WARNING!
- **Never suspend the speaker from the handles!**

Please read the corresponding manuals for more details.

6. TROUBLESHOOTING

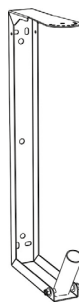*The speaker will not turn on:*

1. Check that power supply is present upstream of the installation.
2. Ensure that the power supply cable with VDE connector is properly plugged in.

The speaker turns on but produces no sound:

1. Check that the input connections of the audio signal (CH1 and/or CH2) are carried out correctly.
2. Check the cables for damage.
3. Ensure that the mixer or audio source is on and an output signal is present.
4. Check that the input levels (CH1 and/or CH2) are appropriate.

Speaker sound is distorted or not sufficient:

1. Adjust the first source volume, then set the input (CH1 and/or CH2) gain to an adequate level. Check the cables for damage and replace them as required (a damaged cable may lead to signal loss or alteration).
2. Check that the input selection settings (CH1 --> Mic/Line, CH2 --> Line/Instr) are correct with respect to the source
3. Check that the "DSP preset" settings are suitable for the use selected.

A background hum can be heard:

1. Disconnect all connected devices and turn power supply off.
2. Check that the Ground Lift switch is correctly set.
3. Check the connection cables for damage.
4. Connect cables again and turn speaker on.

7. SPECIFICATIONS

GENERAL

Type:	2-way active speaker

ACOUSTICAL SPECIFICATIONS

Frequency response [-10dB]:	58 - 20k Hz (OPERA10) / 52 - 20k Hz (OPERA12) / 50 - 20k Hz (OPERA15)
Frequency response [-3dB]:	70 - 19.6k Hz (OPERA10) / 67 - 19.6k Hz (OPERA12) / 56 - 19.6k Hz (OPERA15)
Max SPL:	128 dB (OPERA10) / 129 dB (OPERA12) / 130 dB (OPERA15)
HF voice coil:	1.4"
HF compression driver (output):	1"
LF:	10" (OPERA10) / 12" (OPERA12) / 15" (OPERA15)
LF Voice coil:	2"
Crossover frequency (24 dB/oct):	2000 Hz
Directivity:	Asymmetrical vertical - Differentiated horizontal
Coverage (HxV):	85°- 120° x 80° (+25°/-60°)

AMPLIFIER

Type:	AMP SMPS
Amplification class:	Class D
Power supply:	1 x VDE

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RMS amplifier power:	600 W
Peak power:	1200 W

PROCESSOR

Internal controller:	56-bit DSP
A/D D/A converter:	24 bit/48 kHz
Limiter:	Peak, RMS, Thermal

INPUTS

Inputs:	1x balanced/unbalanced Combo (XLR/Jack)
Outputs:	1x XLR link OUT

USER INTERFACE

Controls:	Level control, ground lift switch, 8-position DSP preset rotary switch

POWER SUPPLY SPECIFICATIONS

Draw at 1/8 of full power in average use conditions (*):	0,92 A (230 V) - 1,65 A (115 V)
Draw at 1/3 of full power in maximum use conditions (**):	2,25 A (230 V) - 4,05 A (115 V)
Draw with speaker turned on without signal (idle): :	14 W
Inrush current:	14,07 A

* **INSTALLER NOTES**: The values refer to 1/8 of full power, in average operating conditions (music program with infrequent or no clipping). It is recommended to consider them the minimum sizing values for any type of configuration.

** **INSTALLER NOTES**: The values refer to 1/3 of full power, in heavy operating conditions (music program with frequent clipping or activation of the limiter). We recommend sizing according to these values in case of professional installations and tours.

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DIMENSIONS

Material:	Reinforced PP polypropylene
Grille:	Full metal grille (CNC)
Provisions for fly bar:	Yes
Handles:	2 (on the top, on the side)
Pole mount:	Yes, 36 mm
Width:	300 mm (OPERA10) 349 mm (OPERA12) 420 mm (OPERA15)
Height:	552 mm (OPERA10) 642 mm (OPERA12) 722 mm (OPERA15)
Depth:	301 mm (OPERA10) 350 mm (OPERA12) 419 mm (OPERA15)
Weight:	12,3 kg (OPERA10) 14,3 kg (OPERA12) 18,3 kg (OPERA15)

Product features, specifications and appearance are subject to changes without prior notice. dBTechnologies reserves the right to make changes or improvements in design or manufacture without any obligation to incorporate such changes or improvements in products manufactured before their introduction.