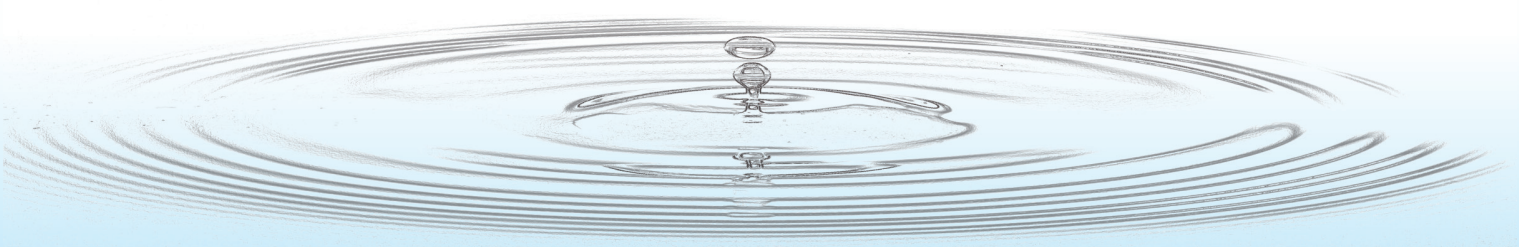
total clarity series
manual



CT background

CT-6 & CT-26 for background & delay applications



1. Introduction

Thank you for purchasing an Ohm loudspeaker.

To guarantee the best possible operating of the equipment and avoiding any malfunction of the system, please read this manual carefully before use. For your own safety we recommend you take the time to read all the warnings and precautions contained within this manual and study the connection details to ensure correct usage and avoid any misuse which may invalidate your warranty.

Record the model and serial number, found on the back of the unit, in the spaces designated on the warranty card and also somewhere safe for future reference. Refer to the model and serial number whenever you call upon your dealer for information or service on this product.

All information contained in this manual is based on information available at the time of going to press. The information has been carefully checked for accuracy, however no guarantee is given with respect to the correctness.

Ohm (UK) accepts no responsibility for any errors or inaccuracies that may appear in this manual or the information on any products described in it.

Technical specifications, dimensions, weights and properties do not represent guaranteed qualities.

As manufacturers we reserve the right to make alterations and modifications within the constitution of the law, as well as changes aimed at improving quality.

This manual does not include all of the details of design, production or variations of the equipment. Nor does it cover every possible situation that may arise during installation, operation or maintenance. If you need particular assistance beyond the scope of this manual please contact your local dealer and if further assistance is require contact our technical personnel.

Before setting up a system read this manual and its safety instructions and keep the manual readily available on site.

If the product requires repair or if information about the warranty is needed, please contact an approved Ohm distributor or the Ohm factory. The contact details are available on the Ohm website.

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1.1. Unpacking

Carefully open the shipping carton and check for any noticeable damage. Verify that all the items are included, please contact your dealer if any parts are missing.

Every Ohm loudspeaker has been rigorously tested and inspected before being carefully packaged, prior to shipping. If any damage has occurred to the packaging or the unit during transit, please notify the delivery company as soon as possible. Only the consignee can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in future.

2. Warranty

All Ohm products have 2 years warranty covering any faults in materials or manufacturing. Warranty does not cover any damage caused by using the products against Ohm UK's recommendations.

Declaration of CE Conformity

CE

This equipment has been tested and found to conform to the requirements of the:

EMC Directive 89/336/EEC,
Machinery Directive 2006/42/EC
Low Voltage Directive 2006/95/EC

and to the following standards:

EMC Emission	EN55103-1 (1996)
EMC Immunity	EN55103-2 (1996)
Electrical Safety	EN60065 (1998)
Mechanical Safety	EN ISO 12100-1 (2004)

3. Important safety instructions

1. Read this manual
2. Heed all safety warnings
3. Follow all instructions
4. The user should never incorporate equipment or accessories not approved by Ohm
5. Safety warnings
   Sound systems are capable of producing high sound pressure levels which can lead to a hearing damage especially in long term exposition.

   To prevent damage to hearing avoid being too close to the speakers when in operation.

   The generally accepted standard to minimize hearing risk is based on an exposure to 85 dBA for a maximum limit of eight hours per day, followed by at least ten hours of recovery time at 70 dBA or lower (at which the risk of harm to healthy ears is negligible). Then a "3 dB exchange rate" formula is applied, which means that for every 3 dB above 85 dBA, the maximum exposure time is cut in half.

   Noise levels above 140 dB are not considered safe for any period of time, however brief. For children, the World Health Organization recommends no exposure above 120 dB.

Maximum Recommended Noise Dose Exposure Levels

Noise Level (dBA)	Maximum Exposure Time per 24 Hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	7.5 minutes
106	3.7 minutes
109	112 seconds
112	56 seconds
115	28 seconds
118	14 seconds
121	7 seconds
124	3 seconds
127	1 second
130-140	less than 1 second
140	**NO EXPOSURE**

For more details (UK), check The Control of Noise at Work Regulations 2005.

6. Speakers have a permanent magnetic field even when they are not operating. Magnetic fields can cause faults for magnetic data media and monitors, therefore it is important to keep all speakers always at least 1m away from these kinds of equipments.
7. Do not expose the product to long term moisture (rain, sea spray, shower or steam) or put in direct contact or partially immersed in water.
8. System parts and rigging inspection
   Be sure to follow the relevant national specifications, norms, and safety regulations. The information described here does not relieve the user of the duty to follow the given safety requirements and legal regulations.

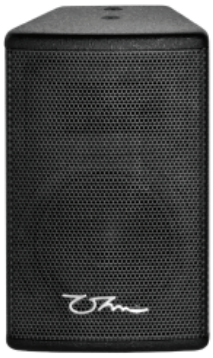
   All system components must be inspected before use, in order to detect any possible defects. Please refer to the "Care and Maintenance" section for more instruction.

   Any parts showing any sign of defect must immediately put aside and withdrawn from use to be inspected by qualified service personnel.
9. Mounting
   Any mounting of the product should follow the manufacturer's instruction given in this manual, and should use a mounting accessory recommended by the manufacturer.
10. Condition which require immediate service
    Servicing is required when the product has been damaged in any way such as:
    - The product has been exposed to excess rain or moisture
    - The product was dropped or the enclosure is damaged
    - The product does not operate normally

CT background

CT-6 & CT-26 for background & delay applications

CT-6 and CT-26 are dedicated background cabinets designed for high quality installation use. Utilising custom designed 6" speakers comprising of 4 layer sandwich 35 mm voice coils with true piston cone and a 1" coil, horn loaded HF compression device along with phase aligned, impedance corrected internal crossovers these speakers give natural, open and well controlled sound.



CT-6

Key Features / Technology

- 3 mounting points for Ohm hardware
- Optimal dispersion for background sound
- Well balanced voicing for low and medium sound levels
- Up to 8 cabinets to one amplifier offers a cost effective solution

Use For

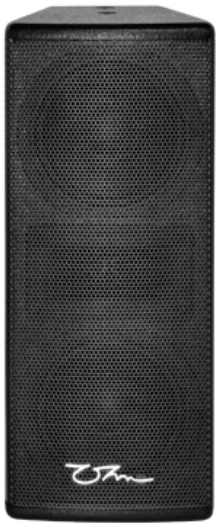
High quality background music & speech applications

Use With

Small and medium CS subwoofers for enhanced performance
Ohm amplifiers, controllers & software

Mounting Options

Uses tailor made Ohm cradle and bracketry



CT-26

Key Features / Technology

- Increased SPL over CT-6
- Enhanced vertical dispersion control
- Shared voicing with CT-6 allows perfect mix and match options

Use For

Installations requiring tight vertical dispersion control
Conferencing and delay applications

Use With

Small and medium CS subwoofers for extended low frequencies and higher SPL
Ohm amplifiers, controllers & software

Mounting Options

Uses tailor made Ohm cradle and bracketry

4. Product

This manual is for CT-6 and CT-26 Mid-High 2-way passive loudspeakers. (If you require a manual for any other Ohm product please visit the Ohm website).

CT-6 and CT-26 are designed mainly for installation use.

The loudspeakers include multiple mounting points and a wide range of installation accessories are available.

Cabinets are available in black or white paint finish or in any desired colour on request.

4.1 Accessories and spare parts

CT-6

- CC-6 wall/ceiling cradle with hand wheels
- HWB horizontal pan and tilt wall bracket
- SWB small pan and tilt wall bracket
- Backplate combo plastic CT-6/26
- HF unit 1 x horn loaded tweeter
- LF unit 1 x 6" low frequency driver
- CT-6 grill assembly
- CT-6 crossover

CT-26

- CC-26 wall/ceiling cradle with hand wheels
- HWB horizontal pan and tilt wall bracket
- SWB small pan and tilt wall bracket
- Backplate combo plastic CT-6/26
- HF unit 2 x horn loaded tweeter
- LF unit 2 x 6" low frequency driver
- CT-26 grill assembly
- CT-26 crossover

5. Installation

Installation should only be carried out by experienced technicians.

Before any installation indoors or outdoors ensure all risk assessments required are carried out. Any technicians responsible for assembling, safe set up and use of the sound system on site must be aware of all risk assessments.

Falling speakers can be **FATAL.** Always ensure that adequate attention is given to safe installation especially when external forces could have a bearing on the stability of the speakers.

Before setup ensure every possible eventuality is addressed in order to prevent the system from becoming unstable, i.e: uneven ground, weather conditions, unstable fixing points or people knocking against system.

Remember that speakers can also move as a result of vibrations.

Consult a professional rigger or structural engineer prior to suspending loudspeakers. Always check the safe working load limit of the structure supporting any loudspeaker. Make sure that the rigging hardware is adequately rated to handle the actual load in accordance with current health and safety guidelines.

Avoid installing loudspeakers in places exposed to harsh weather conditions.

CT-6 / 26 loudspeakers are fitted with threaded mounting holes, suitable for attaching flying hardware or a wall-mount bracket. The details of the mounting points are shown in the drawings. (page 13, 15)

5.1 Wiring

Ensure that all possible installations connections comply with the applicable safety guidelines and that the size and strength of cables are sufficient. Ensure that all connections are secured against coming loose.

Never use signal cables or power cords for suspending, aligning or securing the system.

Never use signal cables or power cords that are frayed.

To prevent the risk of electric shock, do not connect the loudspeaker with the amplifier switched on.

CT-6 / 26:

These speakers are equipped with two terminal connectors, red (+) and black(-)
and two parallel-wired Speakon connectors, connected 1+/1- & 2+/2-
Terminal connectors are linked to the speakon red to 1+ and black to 1-.

To avoid loss of power, the cables should have a minimum wire gauge of 2 x 2.5 mm^2 and more for long distances. Ohm recommends using 2 x 4 mm^2 cable and high quality Speakon connectors.

Maximum cable length for given cable thickness connecting one or two cabinets.

Cable thickness			Length for one (8 ohm)		Length for two (4 ohm)	
mm^2	**SWG**	**AWG**	**m**	**ft**	**m**	**ft**
2.5	15	13	30	100	15	50
4	13	11	50	160	25	80
6	11	9	74	240	37	120
10	9	7	120	390	60	195

Verify that the polarity of the connections to all of your loudspeakers are correct. When more than one loudspeaker reproduces the same frequencies, but with opposite polarity, there will be sound cancellations. Therefore, if any of the loudspeakers are wired so that the +/- connection polarity is reversed with respect to the others, incorrect reproduction will result. Most notably, the bass response will suffer. This is especially true when loudspeakers are situated in adjacent positions where the sound waves readily interact with each other.

Cabinets can be connected together in parallel, CT-6 four cabinets / CT-26 two cabinets, at which time the signal can be linked through from one loudspeaker to the next. Make sure that the linked cabinets total impedance is more than the minimum impedance indicated on the amplifier.

Systems total impedance can be calculated with the following formula:

$$\frac{1}{1/\text{imp } 1^{st} \text{ cabinet} + 1/\text{imp } 2^{nd} \text{ cabinet} + 1/\text{imp } n^{th} \text{ cabinet}}$$

Normally systems minimum impedance should not be lower than 2 ohms, with Ohm D class amplifiers not lower than 4 ohms.

6. OPERATION

6.1 Amplification

There is no exact answer to the question of what amplifier size you should use for a loudspeaker. The loudspeaker power rating in Ohm's specifications only means it has passed a standard power test. This provides a rating that can be used as a point of comparison with other loudspeakers. This rating does not necessarily correspond to the best amplifier size to use nor is it a measure of a "safe" amplifier size to use. Rather, the amplifier should be sized according to both the sound levels required and the type of audio signals that will be reproduced. If you are unsure of how to determine this, consult with a qualified professional or contact Ohm Technical Support.

Preventing damage to the loudspeaker is a function of operating your audio system so that the loudspeaker is not stressed beyond its design limits.

6.2 Signal Processing

External processing is often needed, for example, to accommodate particular program material, less than optimum acoustics, feedback control, or personal taste. Processing units are also be used to set the delays and crossover between cabinets.

CT-6 and CT-26 are passive enclosures so it is not mandatory to use signal processing to get the best possible sound out of the cabinet. However they can be used with signal processing to adjust the delays between cabinets in the installation.

All the latest Ohm signal processors can be accessed by the Ohm Spyder software which is available for download on the Ohm website. www.ohm.co.uk/ohm_downloads.htm. Please check back regularly to ensure you have the latest version. (Always ensure that your current settings are backed up before installing new versions of the software to avoid deleting settings). Read the manual for Spyder Software for further information.

6.3 Protecting the Speakers

In general, audio signals should not be over driven. If an Ohm power amplifier is overloaded at the output stage(clipping), the amplifier will activate a clipping warning signal. The signal must be reduced as soon as it sounds distorted. The Ohm warranty does not cover the damage to the speaker/s or consequential damage caused by overloading the system.

6.4 Ground loop

If the cabinet makes a loud humming or buzzing noise after the speaker has been connected, check that there is no ground loop in the system. Some amplifiers and system controllers have a ground lift switch. Try to set these switches to the “lift” position one after the other to get rid of the problem. Always use a “clean” power supply for the sound, meaning that the same power supply does not run, for example, the lighting system, which may cause interference to the sound. It is also possible that the ground loop is before the amplifications (in mixing desk, effects or equalizers) so all other sources need to be checked if it continues.

Never try to get rid of the ground loop by disconnecting the protective earth contact at the mains connector! This is extremely dangerous!

Use only high-quality audio connectors and cables and if possible only balanced outputs.

7. Service and Maintenance

If for any reason your Ohm product fails, contact the Ohm Technical Support (support@ohm.co.uk) or your local dealer (check the Ohm website), this applies to both warranty and non-warranty faults.

Faulty rigging parts can potentially cause serious consequences and liabilities, so for any rigging hardware problems contact Ohm to determine the appropriate service solutions.

The metal components of the cradles and stacking systems are covered by a textured powder coating which will protect them against short term moisture. All the cabinets and rigging parts should always be stored, transported and used under dry conditions. CT-6 and CT-26 are not designed for long-term outdoor use.

7.1 Performance Testing and Periodic Inspection

Complete inspection of the enclosure and a listening test and formal measurements should be done periodically. The interval between such tests will depend on system usage and the conditions of use, but make sure these inspections are made at least yearly. All the transducers should be tested regularly to make sure they work as intended. A sine wave sweep at approximately 10% of rated power will usually reveal possible transducers and enclosure problems, faults usually cause some distortion, buzzes or rattles.

Faults in internal components and wiring usually cause transducers to stop working or to be intermittent. Only trained technicians may inspect and fix the connection problems.

Take extra care when inspecting all the rigging hardware. Visually inspect all rigging parts each time they are used to detect all possible conditions that may affect load handling capability (i.e. wear, deformation, cracks, corrosion).

7.2 Cleaning and Cosmetic Repairs

If the exterior surface requires cleaning, use a damp cloth to remove any dust and dirt and use a dry cloth to finish the cleaning. Do not use any cleaning solvents or abrasives.

All the CT range cabinets are painted with a high quality paint. Enclosures that are designed for road-use, may over time show signs of wear and tear during normal use, for paint touch up, contact Ohm or your dealer for re-painting or to purchase the touch up paint and instructions for its application. Before paint touch up, fix any cosmetically damaged wood parts using common woodwork methods and materials.

CT-6 TECHNICAL SPECIFICATION

Design	Mid-High Cabinet, Reflex Tuning
Impedance	16 Ohm, Minimum 10.5 ohm @ 290 Hz
Power handling AES	150 Watts (continuous)
Maximum power handling	300 Watts (program) 600 Watts (peak 10 ms)
Sensitivity 2.83V / 1m	87.4 dB
Max SPL	108 dB (cont. max SPL / 1m), 114 dB peak
Frequency response -3dB	87 Hz - 17 kHz
Dispersion	100° x 40°

SYSTEM OPERATION

Recommended Amplification	150W @ 16 Ohm
System Controller	Ohm DSP Solutions
Speaker Cables	Min 2 x 2.5 mm^2 Preferred 2 x 4 mm^2

PRODUCT FEATURES

Components	1 x 6" Low Frequency Woofer 1 x horn loaded tweeter
Crossover	Passive
Connectors	2 x 4 pole Speakon Connectors, 2 x Binding Posts
Dimensions (H x W x D)	300 mm x 189 mm x 182.7 mm
Weight (Kgs)	4
Shipping Weight (Kgs)	10.2 (2 cabinets per carton)
Colour	Black
Options	Available in white or Ral colours on request
Rigging	3 x M6 mounting points for installation brackets, cradle, tilt and turn hardware and second fix

HARDWARE

Hardware: fitted as standard	-
Hardware: optional	CC-6 wall - ceiling cradle, HWB horizontal wall bracket SWB small wall bracket
Additional Descriptive Data	15 mm MDF construction, with durable scratch resistant black textured paint finish, kick-proof steel grill finished with stainless steel Ohm logo.

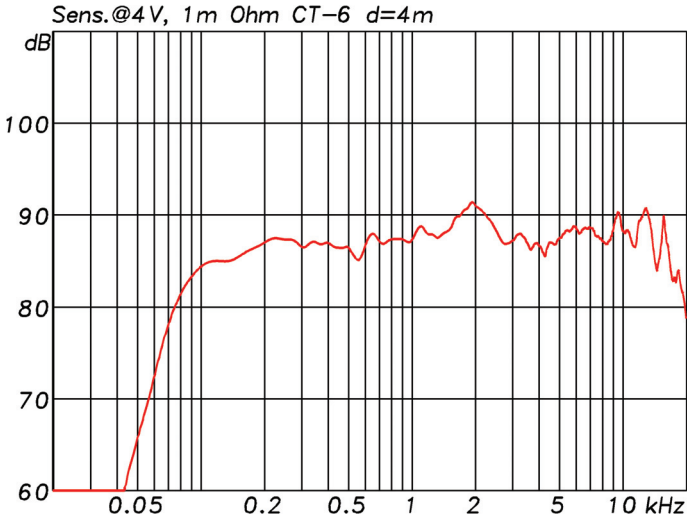
RECOMMENDED FILTER SETTINGS

	LF HPF	LF LPF	HF HPF
Without Sub	85 Hz Butt 18 dB Oc	-	-
With Sub	100 Hz Butt 24 dB Oc	-	-
Bi-amp without Sub	-	-	-
Bi-amp with Sub	-	-	-

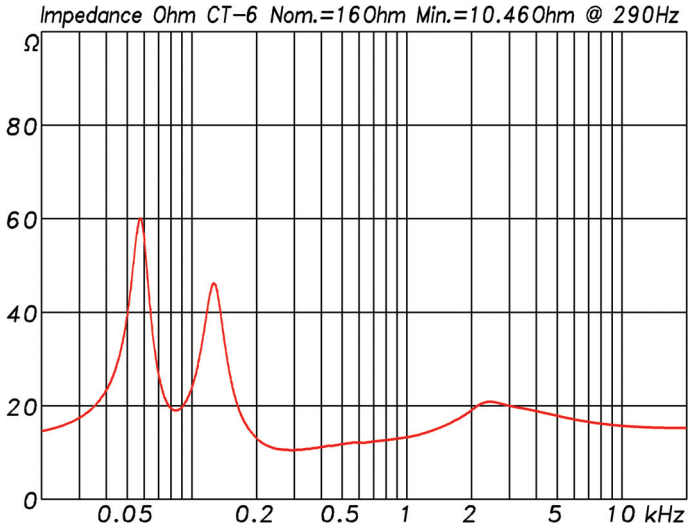
*technical specifications are preliminary and subject to confirmation

CT-6 Performance graphs / diagrams

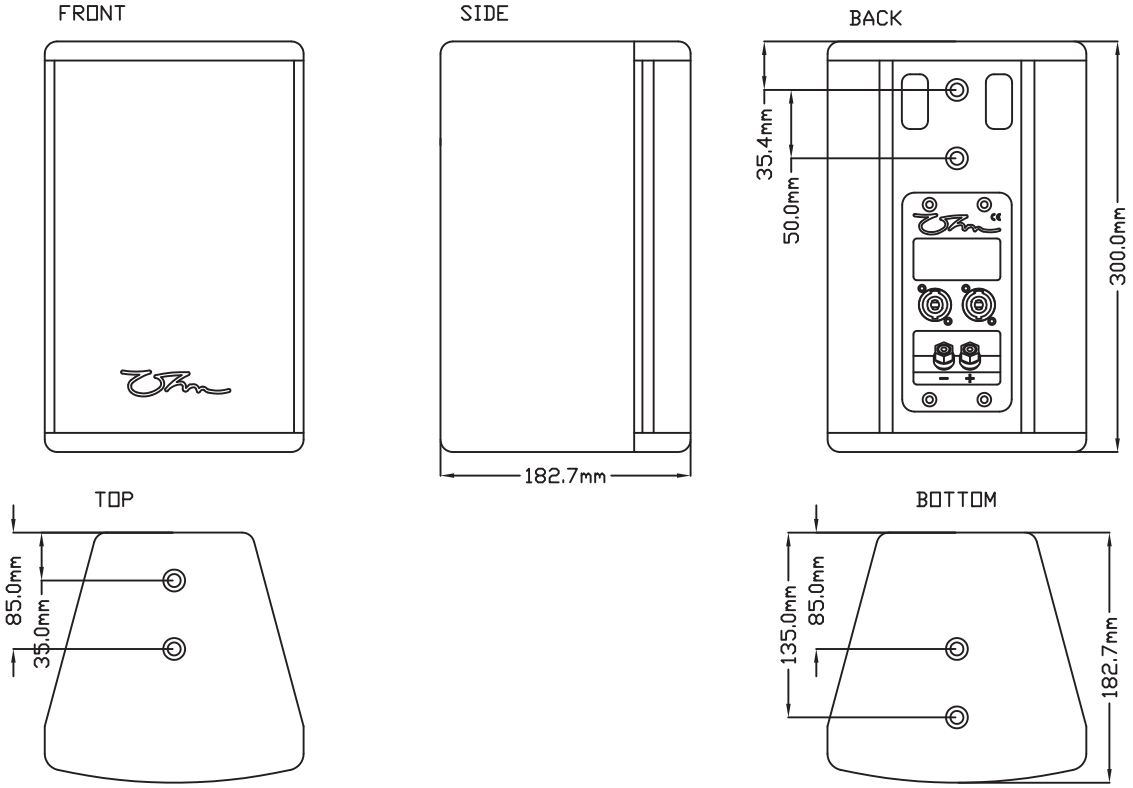
Frequency Response



Impedance Response



CT-6 Drawing



CT-26 TECHNICAL SPECIFICATION

Design	Mid-High Cabinet, Reflex Tuning
Impedance	8 Ohm, Minimum 6.7 ohm @ 286 Hz
Power handling AES	250 Watts (continuous)
Maximum power handling	500 (program) 1000 Watts (peak 10 ms)
Sensitivity 2.83V / 1m	90.1 dB
Max SPL	114 dB (cont. max SPL / 1m), 120 dB peak
Frequency response -3dB	85 Hz - 18.5 kHz
Dispersion	100° x 40°

SYSTEM OPERATION

Recommended Amplification	250W @ 8 Ohm
System Controller	Ohm DSP Solutions
Speaker Cables	Min 2 x 2.5 mm^2, Preferred 2 x 4 mm^2

PRODUCT FEATURES

Components	2 x 6" Low Frequency Woofer 1 x horn loaded tweeter
Crossover	Passive
Connectors	2 x 4 pole Speakon Connectors, 2 x Binding Posts
Dimensions (H x W x D)	460 mm x 189 mm x 182.7 mm
Weight (Kgs)	7
Shipping Weight (Kgs)	16.2 (2 cabinets per carton)
Colour	Black
Options	Available in white or Ral colours on request.
Rigging	3 x M6 mounting points for installation brackets, cradle, tilt and turn hardware and second fix

HARDWARE

Hardware: fitted as standard	-
Hardware: optional	CC-26 wall - ceiling cradle, HWB horizontal wall bracket SWB small wall bracket
Additional Descriptive Data	15 mm MDF construction, with durable scratch resistant black textured paint finish, kick-proof steel grill finished with stainless steel Ohm logo.

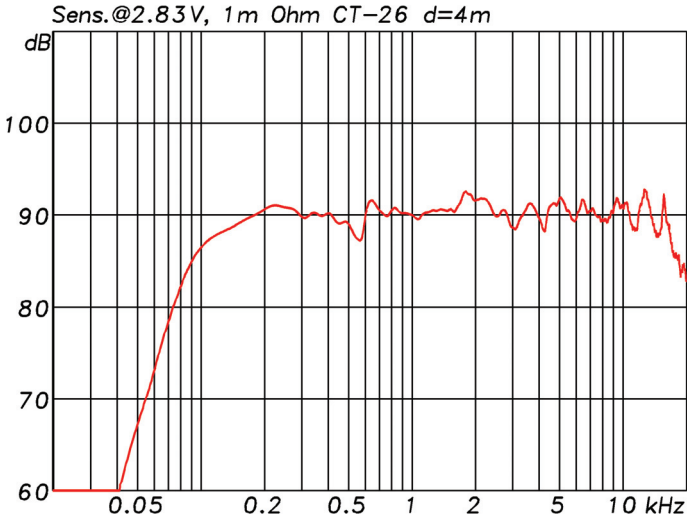
RECOMMENDED FILTER SETTINGS

	LF HPF	LF LPF	HF HPF
Without Sub	85 Hz Butt 18 dB Oc	-	-
With Sub	100 Hz Butt 24 dB Oc	-	-
Bi-amp without Sub	-	-	-
Bi-amp with Sub	-	-	-

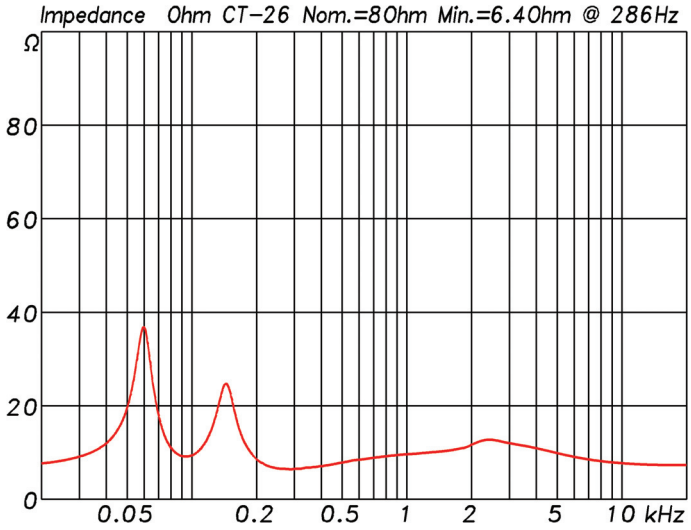
*technical specifications are preliminary and subject to confirmation

CT-26 Performance graphs / diagrams

Frequency Response



Impedance Response



CT-26 Drawing

