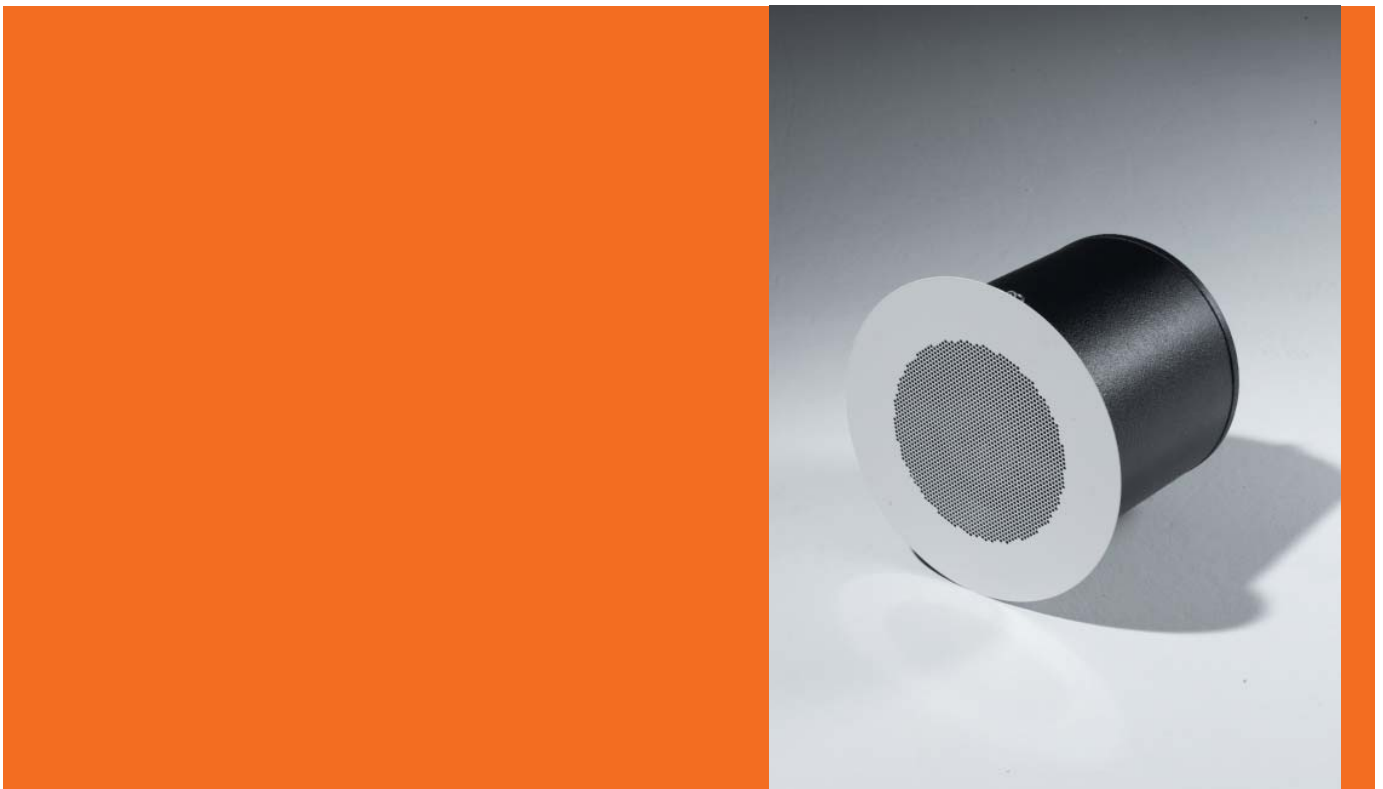


Data sheet
Variotube CS-08



Arc-Series

Architectural Sound Design.





The Fohhn® Variotube CS-08 “in-ceiling” is a real problem solver for fixed installations where a speaker system of high quality needs to be integrated in the ceiling or wall while at the same time satisfying high demands for sound quality, speech intelligibility and dispersion.

Description

The Fohhn® Variotube CS-08 “in-ceiling” is a real problem solver for fixed installations where a speaker system of high quality needs to be integrated in the ceiling or wall while at the same time satisfying high demands for sound quality, speech intelligibility and dispersion. The hornloaded 2-way coaxial speaker system is capable of producing high sound pressure levels and outstanding speech intelligibility, even at locations with high ceilings. The CS-08 can be mounted quickly, easily and securely. Also available as subwoofer system CS-08sub “in-ceiling”.

1. Ceiling/ wall installation „in-ceiling”

(1) Infinitely adjustable threaded rods ensure convenient ceiling/wall installation.

The threaded rod is screwed into the insert on the speaker and into the ceiling (rawlplug). The CS-08 can also be secured with optional ring lugs and safety cables.

(2) Easy installation in suspended ceilings via folding metal ceiling mounts attached to the CS-08/CS-08sub.

The top of the CS-08 can be adjusted accurately in relation to the ceiling via a sliding mechanism. The CS-08 also be secured with optional ring lugs and safety cables.

The CS-08/CS-08sub are available either with threaded rods or folding metal ceiling mounts.

2. Free hänging installation „free”

(3) Flying application

Ring lugs and safety wires (optional) ensure easy, secure installation. Two M8 threaded inserts for attaching ring lugs are integrated in the top of the speaker as standard.

(4) Mounting with VHT-08 bracket

Two M8 threaded inserts for attaching the VHT-08 metal bracket quickly and securely are integrated on either side of the CS-08 “free”.

Applications

Halls, conference rooms, churches, shopping centres, foyers, pubs, restaurants and much more.

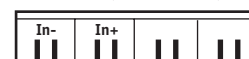
Optional versions

Optional 100 volts version.

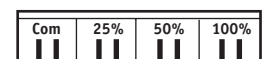
Connections

2x 8-way Phoenix terminal strip, two adjacent pins are always connected in parallel to loop through another speaker system. The connector is included in the delivery.

LowZ version (low impedance)



100 volts version with pickups



Technical specifications

electro-acoustical features

acoustic design	passive loudspeaker, 2-way, bass reflex
components	8" / 1" calotte driver, with self-resetting Polyswitch-HF protection
power rating (nominal) ^[1]	120 W
power rating (program) ^[2]	240 W
power rating (peak) ^[3]	480 W
sensitivity ^[4]	94 dB
maximum SPL ^[3]	121 dB
frequency range ^[5]	60 Hz – 20 kHz
nominal dispersion (h x v) ^[6]	90° conical
nominal impedance	8 ohms

features „in-ceiling“

enclosure	rounded cabinet, metal strengthened
protection grille	ball impact resistant metal, powder coated finish
rigging points	3x M8 thread on top
connections	2x 8-pole Phoenix connector
standard colours	enclosure in textured finish black, decor grille in white
frontal design	decor grille
dimensions (W x H x D)	360 Ø x 315 mm
dimension of baffle	380 mm
mounting depth	295 mm
ceiling hole diameter	360 mm
weight ^[7]	7,5 kg

features „free“

enclosure	rounded cabinet, metal strengthened
protection grille	-
rigging points	3x M8 thread on top 2x M8 thread for VHT-08 U-bracket
connections	2x 8-pole Phoenix connector
standard colours	textured finish black or white
frontal design	acoustic foam, same colour as enclosure
dimensions (W x H x D)	360 Ø x 315 mm
weight ^[7]	7,5 kg

optional features

integrated 100 V-transformer	60/30/15 W or 120/60/30 W
optional colours	all RAL-colours
weather protection	-

CAAD simulation data

ULYSSES, EASE

The manufacturer reserves the right to make technical modifications according to legal regulations stipulating the continual improvement of product features.

^[1] according to IEC-60268-5 long term

^[2] according to IEC-60268-5 short term

^[3] Peak, 20 ms with bandpass filtered pink noise signal according to IEC 60268-2 at one octave above the lower limit of the frequency range

^[4] 2,83 V at 8 ohms (2 V at 4 ohms, 4 V at 16 ohms) at a distance of 1 meter under anechoic fullspace conditions

^[5] -10 dB under anechoic halfspace-conditions

^[6] horizontal x vertical at -6 dB

^[7] net weight without optional equipment

^[1] Intelligent Protection Circuit. Voltage-controlled semiconductor circuit protecting the HF-driver against overload highly effective and with very short attack time.

Accessories for CS-08 „free“

VHT-08

U-bracket for Variotube CS-08(sub) "free"



Controlling Arc-Series speakers

1. Fohhn system DSP amplifiers

Fohhn offers a range of specially adapted system DSP amplifiers for controlling Arc speaker systems, which guarantee maximum sound performance and operational reliability for your Fohhn products. As manufacturers of speaker, amplifier and DSP technology, we know our systems inside and out right down to the smallest detail and are therefore in a perfect position to provide our users with the best overall system.

Fohhn System DSP amplifier are offering following advantages:

Integrated high-performance DSP technology:

- quick set-up,
- minimal space requirements in electronics cabinet,
- minimal cable requirements,
- fewer cable faults,
- controller and amplifier can be controlled and monitored using the same software.

Dual DSP technology

The DSP amplifiers contain 2 separate DSP engines with enormous capacity and processing power for 5 digital audio devices (DSP-1) and Fohhn specific speaker databases (DSP-2).

Remote monitoring and control

Integrated temperature and operating time monitor, status indicator / protection, remote control capability / network compatibility using a laptop, wall installation modules or media control systems.

Fohhn® dual DSP technology

DSP-1: Integrated digital audio devices

Each amplifier channel has a:

- programmable 10 band parametric EQ,
- compressor/limiter/noise gate,
- delay,
- X-over function,
- top-quality pink noise and sweeptone generator

DSP-2: Speaker management

An integrated speaker database guarantees excellent sound quality and protection for all Fohhn speaker types. A sophisticated algorithm developed by Fohhn engineers and adapted to each speaker allows the individual monitoring and adjustment of bass, mid and high ranges.

1.1 Amplifier recommendations for the Arc-Series



D-2.750

2 channel operation, 2x 750 W / 4 ohms,
2x 390 W / 8 ohms

Fohhn Audio DSP, display, remote control

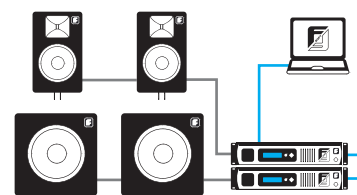
D-4.750

4+2 channel operation, 4x 750 W / 4 ohms,
4x 390 W / 8 ohms

2x DSP line out channels for controlling a conventional amplifier

Fohhn Audio DSP, display, remote control

	Arc-Tops										Arc-Subs											
	AT-05	AT-06	AT-07	AT-08	AT-09	AT-10	AT-20	AT-21w	AT-30	AT-35	AT-40	AT-50	AT-66	CS-08	AS-10	ASP-10	AS-20	ASP-20	AS-30	ASP-30	AS-40	ASP-40
D-2.750	x	x	x	x	x	x	x	x	x					x	x	x	x					
D-4.750	x	x	x	x	x	x	x	x	x					x	x	x	x					
D-2.1500									x	x	x	x	x					x	x	x	x	
A-2.2100										x	x	x	x					x	x	x	x	



2x Sub passive / 2x Top passive
2x DSP amplifier (D-Series or A-Series)

Controlling Arc-Series speakers

2. Standard amplifiers combined with Fohhn controllers

Standard amplifiers / 100V amplifiers / multichannel amplifiers combined with Fohhn FC-9 DSP system controllers

All of the speaker systems in the Fohhn Arc-Series can be operated in combination with standard amplifiers (e.g. Bittner amplifiers). Each Fohhn speaker model has a linear design, neutral sound adaptation function and is fitted with an integrated crossover with electronic tweeter protection.

We recommend integrating the FC-9 Fohhn DSP system controller for applications involving standard multichannel amplifiers, 100V amplifiers or monitored amplifiers according to EN 60849.

The FC-9 guarantees maximum sound quality, operational reliability and performance features that no other standard controller can offer in combination with our Fohhn speakers.

Sound quality. Reliability. Intelligent control.

- * Fohhn DSPs guarantee maximum sound performance
- * 5 premium audio tools such as Parametric EQ are integrated
- * Integral speaker and amplifier database for maximum operating reliability
- * Remote monitoring/operation, network-compatible
- * Automatic amplifier calibration function CAS
- * 8 input switching contacts for easy system integration
- * Perfect adaptation to all standard amplifiers

FC-9 DSP system controller



DIN EN 60849 (VDE 0828)

Bittner amplifiers



BITTNER
AUDIO

In addition to our special Fohhn® DSP amplifiers, we also offer the complete range of amplifiers manufactured by Bittner Audio for low-ohm or 100 volt applications. Bittner Audio offers solutions such as multichannel amplifiers with eight standard channels and important features for integration in electroacoustic emergency warning systems according to DIN EN 60849 (VDE 0828). Contact us for more information!

Advantages of the FC-9 controller:

Perfect adaptation to all standard amplifiers

Automatic amplifier calibration function and integrated amplifier database for perfect adaptation.

Dual DSP technology

The FC-9 contains 2 separate DSP engines with enormous capacity and processing power for Fohhn specific speaker databases and 5 digital audio devices.

Integrated speaker database

Guarantees excellent sound quality and protection for all Fohhn speaker types.

A sophisticated algorithm developed by Fohhn engineers and adapted to each speaker allows the individual monitoring and adjustment of bass, mid and high ranges.

Remote monitoring and control

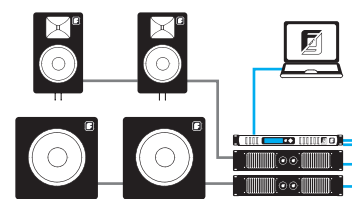
Remote control capability / network compatibility using a laptop, wall installation modules or media control systems.

8 input switching contacts

The FC-9 has 8 input contacts. The inputs can be utilized to switch between the different presets of the FC-9, as well as other Fohhn-Net devices. With two inputs and two pushbuttons (shutters) connected to them, a volume control can be realized as well.

4 inputs / 6 outputs (24 nodes)

A programmable 10-band parametric EQ, compressor/ limiter/noise gate, delay, X-over function, top-quality pink noise and sweptone generator are available at each output, allowing you to conveniently adapt the Fohhn system to the room acoustics or your own personal requirements.



2x Sub passive / 2x Top passive
2x standard amplifiers
1x DSP system controller FC-9

Remote control and network ability of Fohhn devices with integrated DSP

FR-10

remote control wall panel designed for the remote operation of Fohhn devices with integrated DSP.



Description

The FR-10 is a wall mount remote control module designed for the remote operation of Fohhn DSP amplifiers, DSP controllers and active Fohhn speakers systems. The FR-10 is extremely easy to operate because the controls are so well arranged. It is virtually impossible for the end customer to make operating errors because the only operating elements are the 8 labelled buttons.

Easy handling

Control up to 32 Fohhn devices individually with this stylish FR-10 wall panel. 8 programmable buttons can be configured to control the overall volume of a system, the volume in different zones or presets for different room effects, for example. The system also has a special function that confirms whether all commands have been executed successfully. The buttons indicate this by changing red or green shortly after they are pressed. For example, if a device is not switched on, the button changes red to indicate that a command could not be executed. This additional monitoring function ultimately contributes to the overall operating reliability of your system. The wall panel is easy to configure using a standard computer with intuitive Fohhn-Net Remote software installed.

Connections

Two terminal strips (paralleled). Alternative connection via standard 4-wire telephone cable.

Applications

The FR-10 is ideal for training rooms, hotels, churches, halls, restaurants or any venue where a simple, efficient system is required to control your audio equipment from a central location. The FR-10 is also ideal for projects where complex media control systems are not viable or inappropriate, but the user wishes to control the speaker system centrally.

FR-20

19" remote control unit can be controlled via conventional external buttons or switches.



Description

The FR-20 can be controlled via conventional external buttons or switches (e.g. Jung, Vitra, etc.) or switching contacts (e.g. media control system). Buttons and switches may come in the form of a wall installation module or an individually manufactured control panel, for example.

Presets stored in the connected Fohhn DSP devices are activated simultaneously and settings for different scenarios such as speech, music, empty room, full room, etc are loaded when the buttons/switches are pressed. You can also adjust the volume quickly and easily in 1 dB increments using the FR-20. A maximum of 31 Fohhn devices connected to the network can be activated simultaneously at the press of a single button.

Integration in a media control system

The FR-20 allows the convenient integration of all DSP-controlled Fohhn devices into media control systems (e.g. AMX, Crestron) by means of 8 switching contacts or RS-485 interface.

Integration in a EIB bus technology

One building, one concept, one system.

Fohhn systems equipped with a FR-20 distribution switch comply with the „European installation bus technology“ standard, including all operating comforts.

Applications

The FR-20 is ideal for training rooms, hotels, churches, halls, restaurants, clubs, bars and many other venues.

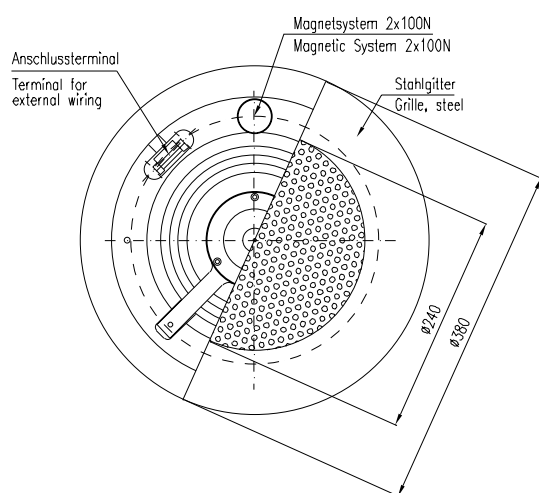
For simple, reliable remote operation of your audio system without having to install complex, expensive media control systems.



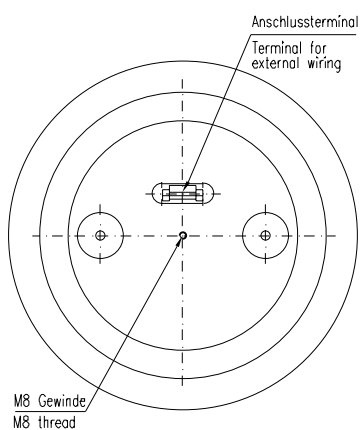
Views of CS-08 „in ceiling“ (1)

(1) Threaded rod for attachment and adjustment

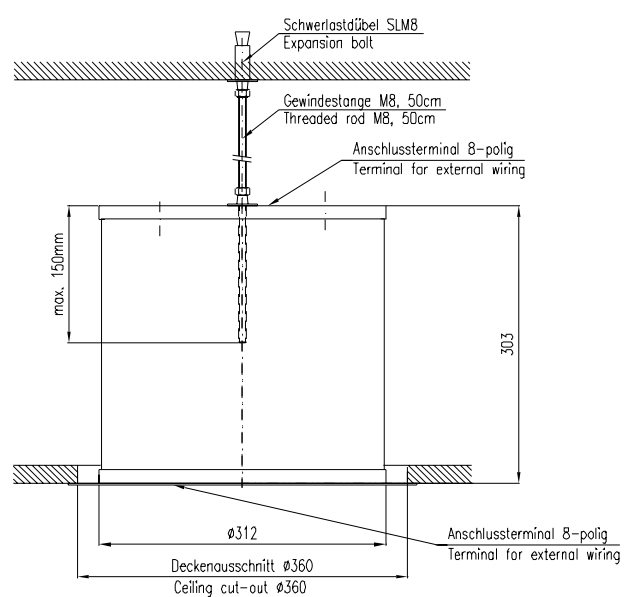
Bottom view



Top View



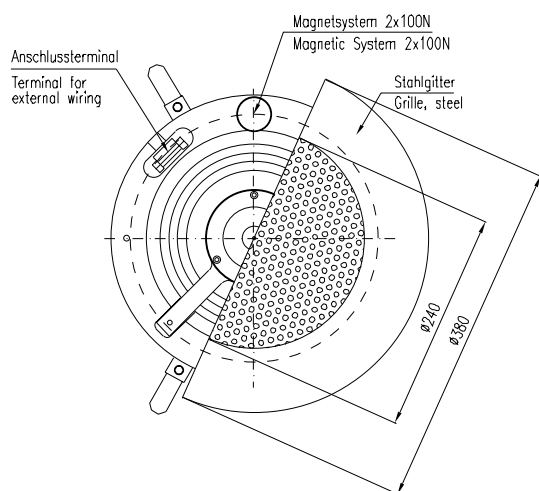
Side view



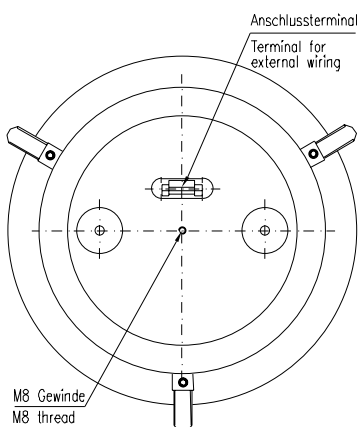
Views of CS-08 „in ceiling“ (2)

(2) 3 claws for attachment

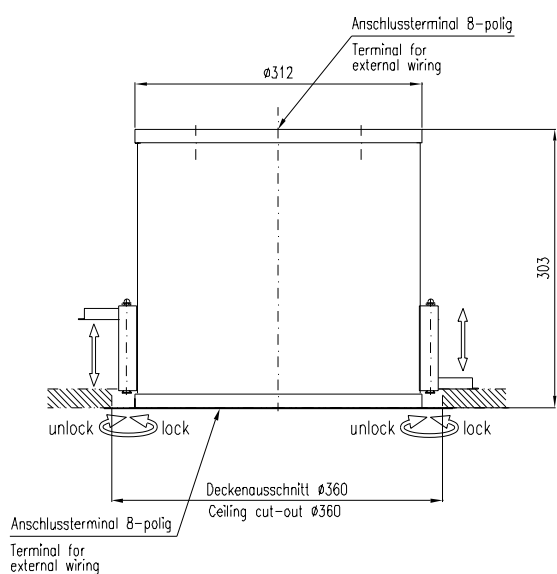
Bottom view



Top View



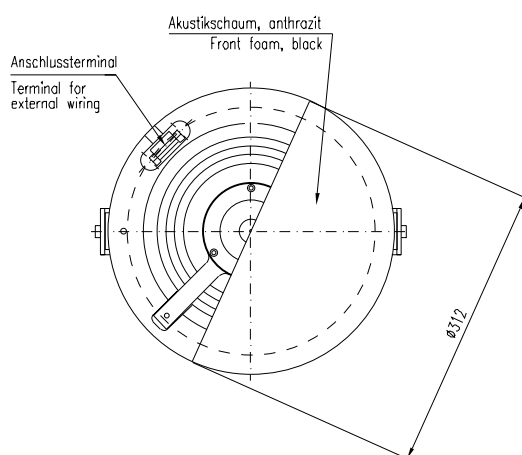
Side view



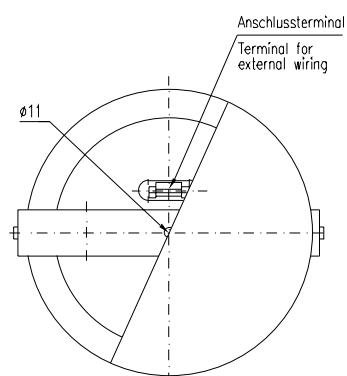
Views of CS-08 „free“ (3)

(3) U-bracket installation

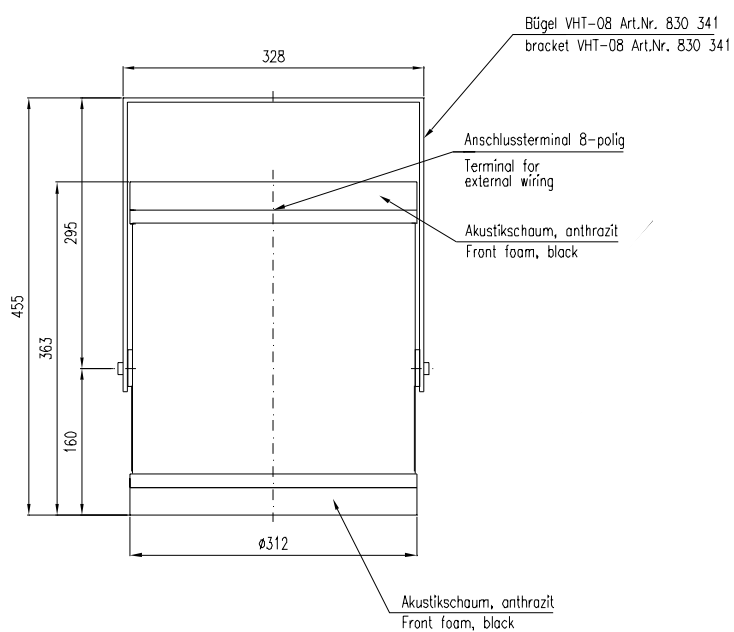
Bottom view



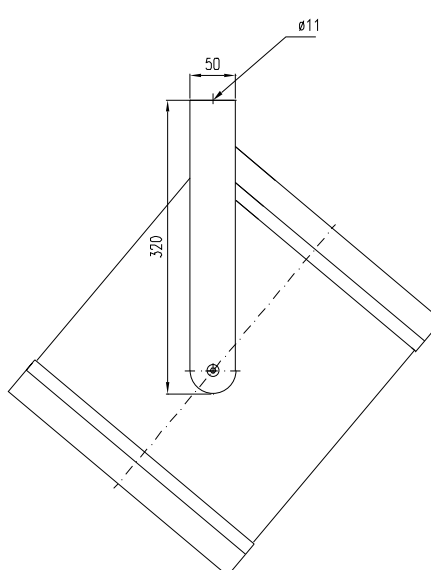
Top View



Front view



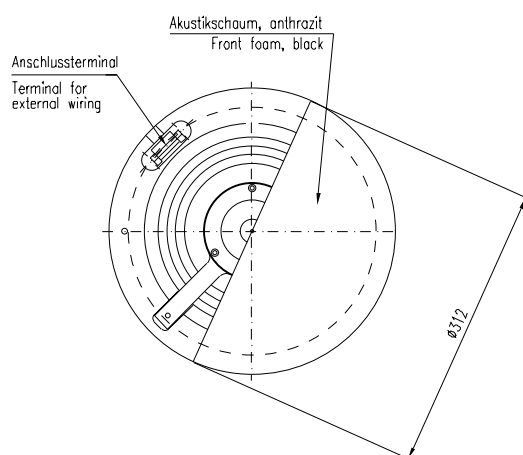
Side view



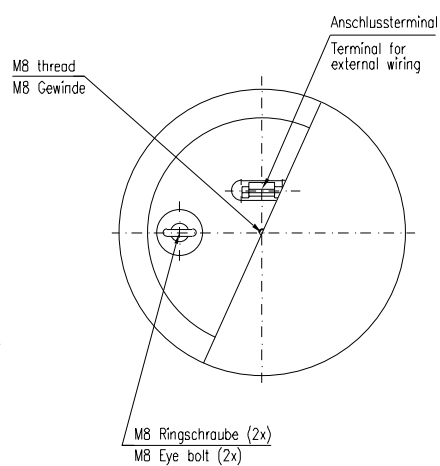
Views of CS-08 „free“ (4)

(4) Wire cable installation

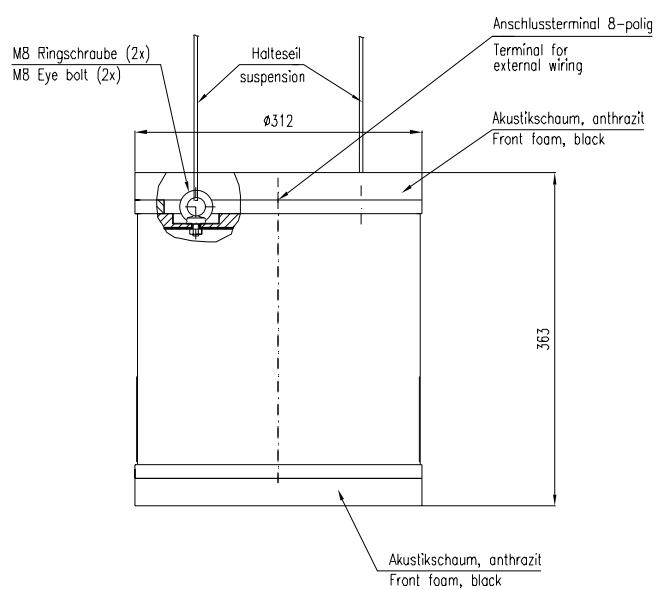
Bottom view



Top View



Side view



Tender specifications

Einbau-Hochleistungs-Beschallungs-lautsprecher

Professionelles Beschallungslautsprechersystem zur Decken- oder Wandmontage. 2-Wege Hochleistungslautsprechersystem im abgestimmten Bassreflexgehäuse mit hohem Kennschalldruck. Horngeladenes koaxiales Lautsprecherdesign. Treiber: 8" Konus mit 1" Kugelkalottenhorn mit hoher Belastbarkeit 150W/300W*. Eingebaute passive Frequenzweiche mit modernen halbleiterbestückten Bauteilen für Hochton Treiberschutz und automatisches Subsonic Shiftfilter. Symmetrisches Lautsprecherdesign mit gleichmäßiger Abstrahlung.

Lieferbar in 8 Ohm oder als 100V-Version (120Watt). 100V Anpassübertrager optional. Dekormetall Frontabdeckung in allen RAL Farben lieferbar.

Hohe akustische Abgabeleistung für hohe Sprachverständlichkeit und natürlichen Klang.

5 x M8 Gewindeeinsätze auf der Oberseite und seitlich sind zur Aufnahme von Systemhalterungen integriert.

Zubehör: Bügel für freihängende Montage.

Anschlüsse: 2 x 8-fach-Phoenix-Klemmleisten.

Simulationsdaten für ULYSSES und EASE sind verfügbar.

electro-acoustical features

acoustic design	passive loudspeaker, 2-way, bass reflex
components	8" / 1" calotte, with self-resetting Polyswitch-HF protection
	power rating (nominal) 120 W
power rating (program)	240 W
power rating (peak)	480 W
sensitivity	94 dB
maximum SPL	121 dB
frequency range	60 Hz – 20 kHz
nominal dispersion (h x v)	90° conical
nominal impedance	8 ohms

features

enclosure	rounded cabinet, metal strengthened
protection grille	ball impact resistant metal, powder coating
rigging points	3x M8 thread on top
connections	2x 8-pole Phoenix connector
standard colours	enclosure in textured finish black and decor grille in white
frontal design	decor grille
dimensions (W x H x D)	360 Ø x 315 mm
dimension of baffle	380 mm
mounting depth	295 mm
ceiling hole diameter	360 mm
weight ^[7]	7,5 kg

optional features

integrated 100 V-transformer	60/30/15 W
optional colours	all RAL-colours
special finishes	piano lacquer black, chromium-plated trim

CAAD simulation data

ULYSSES, EASE

Make

Fohhn Audio AG

Type

Variotube CS-08 „in-ceiling“

Tender specifications

Einbau-Hochleistungs-Beschallungslautsprecher

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features

enclosure	rounded cabinet, metal strengthened
protection grille	-
rigging points	3x M8 thread on top 2x M8 thread for VHT-08 U-bracket
connections	2x 8-pole Phoenix connector
standard colours	textured finish black or white
frontal design	acoustic foam, same colour as enclosure
dimensions (W x H x D)	360 Ø x 315 mm
weight ^[7]	7,5 kg

optional features

integrated 100 V-transformer	60/30/15 W
optional colours	all RAL-colours
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CAAD simulation data

ULYSSES, EASE

Make

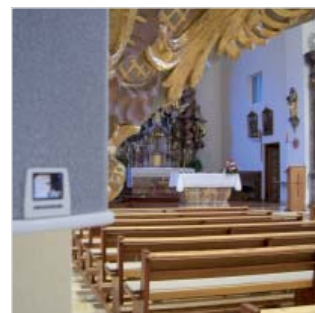
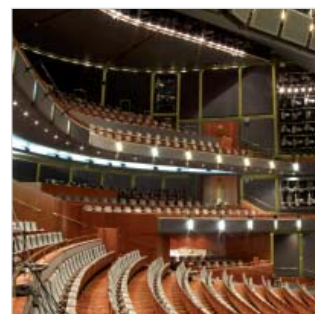
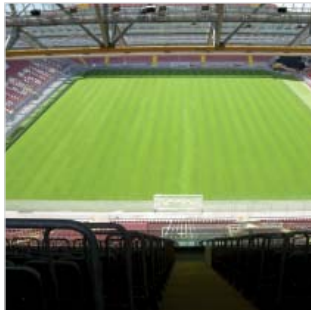
Fohhn Audio AG

Type

Variotube CS-08 „free“

SOUNDS PERFECT. IS PERFECT.

Fohhn audio systems. The ultimate all-round audio experience.



■ German quality
■ engineered and made
■ by Fohhn®

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