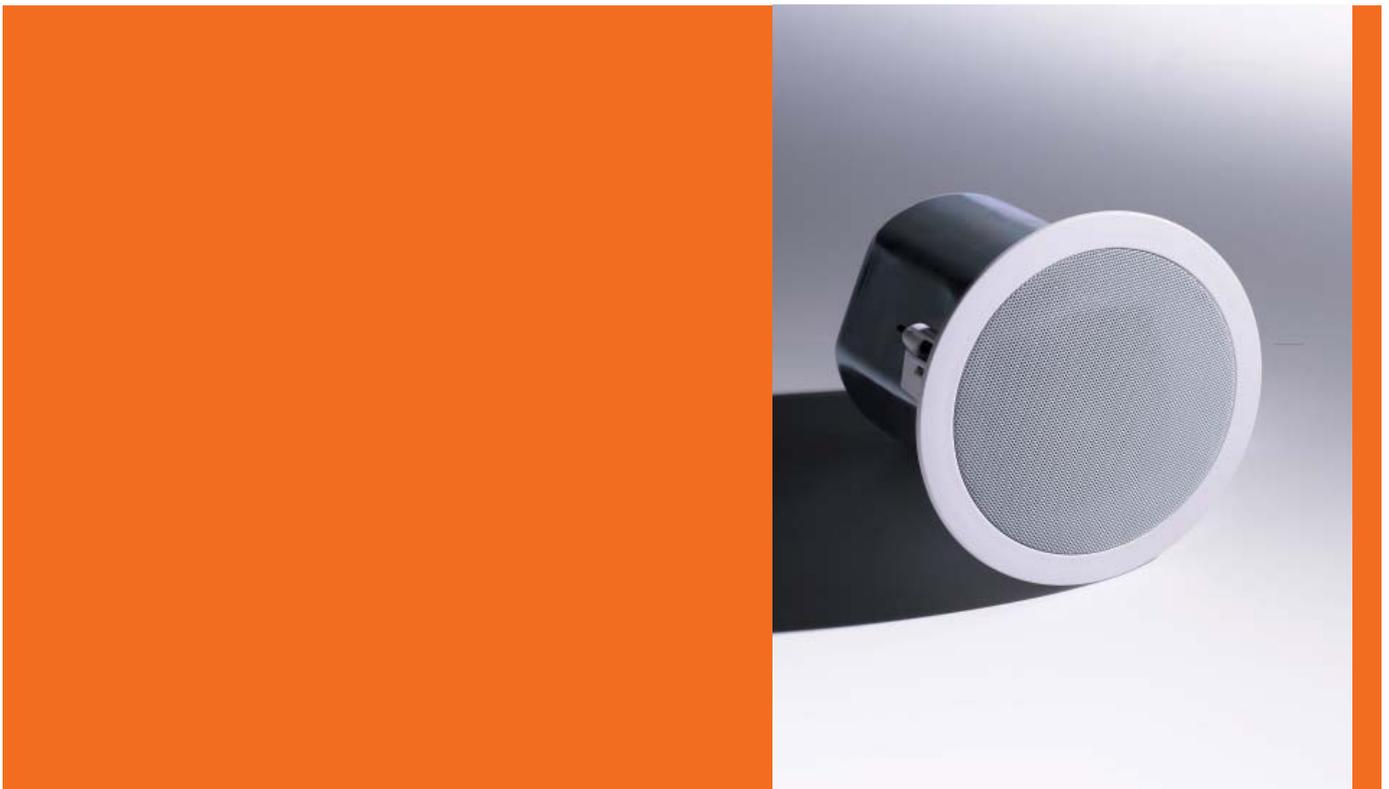


# Arc-Series

Architectural Sound Design.



## CS-04 ceiling speaker



low-z/  
100V

The Fohhn® CS-04 is an extremely compact, unobtrusive 2-way integral ceiling speaker with impressive balanced yet powerful sound characteristics. The speaker is fully compatible with the Fohhn Audio System and can be adapted perfectly to the surrounding environment using DSP presets.

### Description

The high-quality 4" subwoofers with superior coaxial high-frequency driver and an excellent crossover form a speaker system that achieves an outstanding degree of speech intelligibility and extremely homogenous dispersion characteristics as well as dynamic music reproduction. The optimised bass reflex housing made from flame-resistant steel ensures reliable sound production even in applications where safety is paramount. There is a 4-stage selector switch under the front grille for low-ohm control (16 ohms) and three switch settings for 100V systems (30/15/7.5W).

For more demanding sound requirements in music projects, the CS-04 can be combined with Fohhn subwoofer models AS-10, AS-20 or XS-10, XS-20. For events with both speech and music reproduction, the system guarantees excellent speech intelligibility while generating a full sound with sufficient bass for outstanding music production. The perfect adaptation of the CS-04 integral 2-way ceiling speakers and the subwoofers is all down to Fohhn® DSP processor technology. Digital Fohhn signal processors are an integral component of Fohhn Active subwoofers, Fohhn DSP amplifiers and Fohhn DSP controllers. The entire speaker system can be operated remotely from a convenient central location via a remote control module (FR-10) with 8 simple, illuminated buttons. The perfectly adapted sound system offered by Fohhn meets the demanding requirements of a modern speaker system regarding design, sound quality and ease of use in every respect.

### Applications

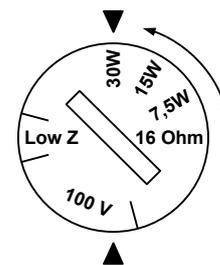
Conference rooms, churches, shopping centres, foyers, pubs, restaurants, hotels and much more.

### Controlling

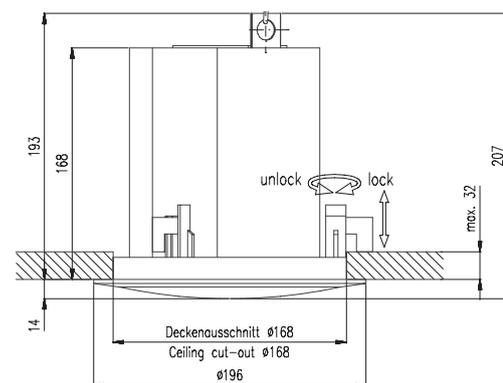
For maximum sound performance and operating reliability, we recommend our digital DSP amplifiers. (e.g. D-2.750) We always integrate a sophisticated passive crossover with electronic high-frequency protection so CS-04 can be operated with any professional amplifier.

### Low impedance or 100 volts operation

There is a 4-stage selection switch under the front grille for low-ohm control (16 ohms) and three settings for 100V operation (30/15/7.5W).



### Top View



## Technical specifications

### electro-acoustical features

acoustic design	passive loudspeaker, 2-way coaxial, bass reflex
components	4" coated/ 1" neodymium titanium calotte driver with self-resetting Polyswitch-HF protection
power rating (nominal) <sup>[1]</sup>	30 W
power rating (program) <sup>[2]</sup>	60 W
power rating (peak) <sup>[3]</sup>	120 W
sensitivity <sup>[4]</sup>	87 dB
maximum SPL <sup>[3]</sup>	108 dB
frequency range <sup>[5]</sup>	70 Hz – 20 kHz
nominal dispersion radial (-6 dB) <sup>[6]</sup>	90° averaged (110° from 1 to 4 kHz)
nominal impedance	16 ohms, switchable to 100 volts 30/15/7,5 watts

<sup>[1]</sup> according to IEC-60268-5 long term

<sup>[2]</sup> according to IEC-60268-5 short term

<sup>[3]</sup> 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

<sup>[4]</sup> 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

<sup>[5]</sup> -10 dB under anechoic halfspace-conditions

<sup>[6]</sup> radial at -6 dB

### features

enclosure	UV resistant ABS, fire pot steel galvanized
protection grille	metal, powder coating
rigging points	3x quick mounting claws, 1x ring stud for safety
connections	4-pole Phoenix connector with cable grip (dual configuration, plug-in screw connection)
integral 100 volts transformer	switchable 30/15/7,5 watts and 16 ohms
standard colour	white
frontal design	metal, powder coating
dimensions (D x H)	196 Ø x 207 mm, ceiling hole diameter 168 mm
dimension of baffle	Ø 196 mm
mounting depth	207 mm
ceiling hole diameter	Ø 168 mm
weight	2,6 kg

### optional features

optional colours	on request
weather protection	-

<b>CAAD simulation data</b>	ULYSSES, EASE
-----------------------------	---------------

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

## 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

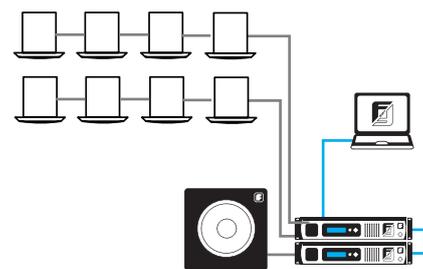
#### D-4.750

**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-04	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 / 2-8x 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

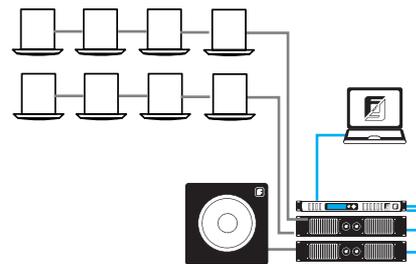
Remote control capability / network compatibility using a laptop, wall installation modules or media control systems.

##### 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 sweeptone 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-8

## 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

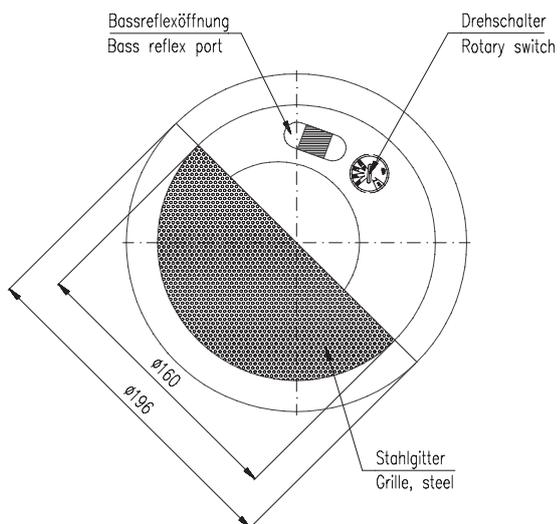
The FR-20 is ideal for training rooms, hotels, churches, halls, restaurants, clubs, bars and many other venues.

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

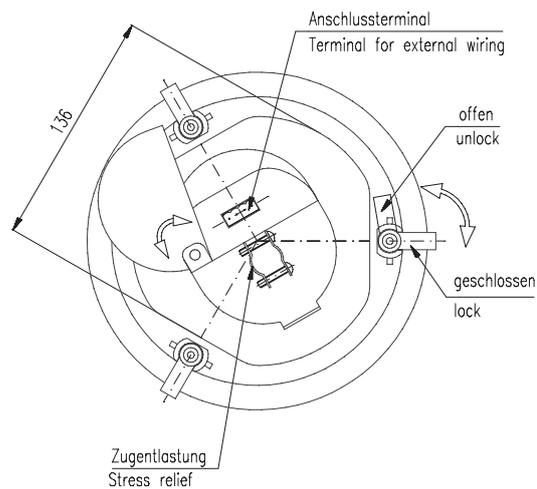


## Views of CS-04 „in ceiling“ (1)

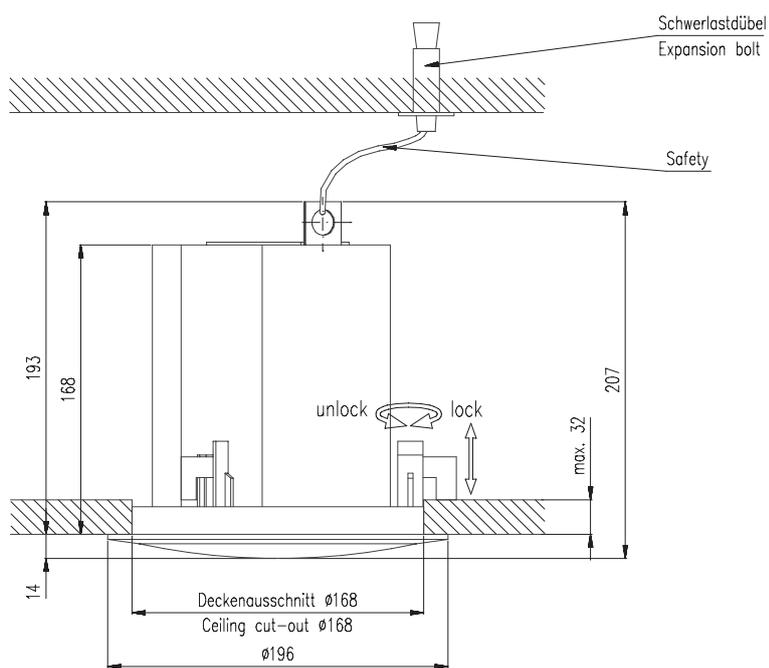
### Bottom view



### Top View



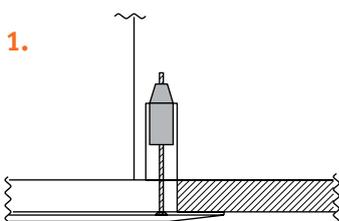
### Side view



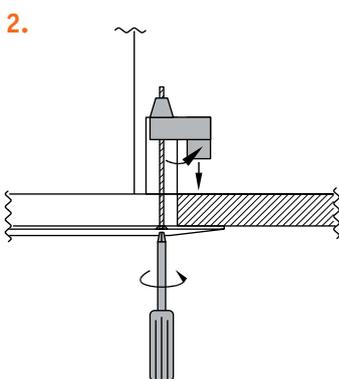
## Ceiling installation and mounting

### Quick mounting claws

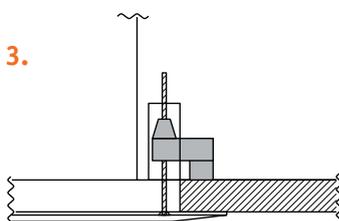
3 quick mounting claws for quickly and safe attachment of the CS-04. The ceiling must be no thicker than 32 mm to guarantee secure attachment.



The speaker is inserted in the ceiling recess with the front grille removed.



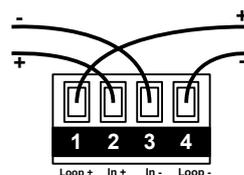
When the three mounting screws are tightened using a crosshead screwdriver, the quick mounting claws unfold automatically and secure the CS-04 to the ceiling.



The CS-04 is secured in position once all the screws are tightened.

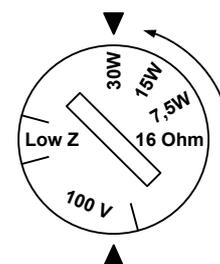
### Connections

There is a detachable four-pin Phoenix terminal with cord grip under the cover on the rear of the device for connecting the speakers. Two adjacent pins are always wired in parallel to connect another CS-04 in series. The connector is included in the scope of delivery.



### Low impedance or 100 volts operation

There is a 4-stage selection switch under the front grille for low-impedance control (16 ohms) and three settings for 100V operation (30/15/7.5W).



The operating mode can also be selected under the front grille after the speaker is mounted. The following CS-04 operating modes are available, depending on the installation location:

- 1.) 100 V - 30 W
- 2.) 100 V - 15 W
- 3.) 100 V - 7,5 W
- 4.) Low Z - 16 ohms

Turn the rotary switch on the baffle board using a wide slotted screwdriver to select the settings.

### Important note

To guarantee maximum operating reliability, the CS-04 should only be operated in the Low Z (16 ohms) position in combination with a subsonic filter (f-6 dB = 30 Hz, 24 dB / octaves).

## Tender specifications

---

### Compact 2-way integral ceiling speaker

Compact 2-way integral ceiling speaker fitted with a long-excursion polypropylene-coated 4" bass/mid speaker and a coaxial domed 1" neodymium high-frequency driver with titanium diaphragm installed upstream of the subwoofers. A specially shaped foam insert ensures maximum linearity of the high-frequency sound production for all dispersion angles. A crossover with high-quality air-core coils reproduces sound with extremely low levels of distortion while utilising maximum system capacity. The self-resetting polyswitch speaker protection system prevents the high-frequency driver from overloading. The speaker can operate momentarily at 120 W and generates a maximum sound pressure of 108 dB. Broadband sound is dispersed at a radial angle of 90° and sound within the 1 kHz to 4 kHz range is dispersed evenly at 110°. The frequency range extends from 70 Hz to 20 kHz. White ABS housing with steel fire guard and bass reflex harmonisation. The AFC bass reflex port (Air Flow Control) and the flame-retardant housing insulation ensure a clear, balanced bass sound is reproduced. The rotary switch attached to the front allows you to select between four different operating modes: 16 ohm, 100V/30/15/7.5W. Connections: extremely user-friendly screw and plug terminals on the 4-way Phoenix terminal strip with cord relief. All contacts are available in duplicate to allow the user to establish a connection to another speaker. The speaker is fitted via three self-opening screw fittings. A steel eyelet for attaching a safety cable is fitted to the rear.

#### electro-acoustical features

acoustic design components	passive loudspeaker, 2-way coaxial, bass reflex 4" coated/ 1" neodymium titanium calotte driver, with self-resetting Polyswitch-HF protection
power rating (nominal)	30 W
power rating (program)	60 W
power rating (peak)	120 W
sensitivity	87 dB
maximum SPL	108 dB
frequency range	70 Hz – 20 kHz
nominal dispersion radial (-6 dB)	90° averaged (110° from 1 to 4 kHz)
nominal impedance	16 ohms, switchable to 100 volts 30/15/7,5 watts

#### features

enclosure	UV resistant ABS, fire pot steel galvanized
protection grille	metal, powder coating
rigging points	3x quick mounting claws, 1x ring stud for safety
connections	4-pole Phoenix connector with cable grip (dual configuration, plug-in screw connection)
integral 100 volts transformer	switchable 30/15/7,5 watts and 16 ohms
standard colours	white
frontal design	metal, powder coating
dimensions (D x H)	196 Ø x 207 mm, ceiling hole diameter 168 mm
weight	2,6 kg

#### optional features

optional colours	on request
------------------	------------

#### CAAD simulation data

ULYSSES, EASE

#### Make

Fohhn Audio AG

#### Type

CS-04

# SOUNDS PERFECT. IS PERFECT.

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



■ German quality  
■ engineered and made  
■ by Fohhn®

## Fohhn Audio AG

Hohes Gestade 3-7

72622 Nürtingen

Germany

Tel. +49 7022 93323-0

Fax +49 7022 93324-0

[www.fohhn.com](http://www.fohhn.com)

[info@fohhn.com](mailto:info@fohhn.com)