

Surface-mount Loudspeakers:

CS-S8, CS-8T, CS-8A, CS-8AD
CS-S10, CS-10T, CS-10A, CS-10AD
CS-S12, CS-12T, CS-12A, CS-12AD



CS-S10 illustrated; CS-S8 and CS-S12 are similar in appearance



General Description

The Cloud CS-S8, 10 and 12 ranges extend the CS-S Series of high quality 2-way loudspeakers for internal or external fixed installation in leisure and hospitality venues. They are an excellent choice when higher sound levels and better quality musical reproduction is needed than can be achieved with typical small “background music” speakers.

The loudspeakers are available in three sizes, based on the diameter of the LF driver. All sizes feature a coaxial speaker design using a 1” diameter HF compression driver mounted within an 8”, 10” or 12” diameter treated paper LF driver with a treated cloth surround. All sizes provide a loud and punchy musical sound with high SPL, smooth frequency response, low distortion, and excellent LF and off-axis performance.

Each loudspeaker size is available in four versions – two passive and two active. The passive versions are intended to be powered by external amplifiers, either low impedance (8 ohm) (versions CS-Sn, where n=8, 10 or 12), or via a 70/100V-line system (versions

CS-SnT). Both versions use a passive crossover network. ‘T’ models have a built-in line transformer, with three (100 V) or four (70 V) power tapplings selectable by a rear panel switch; a fifth switch position allows Lo-Z operation, and a sixth turns the speaker off. An optional weatherproof cover and rear plate giving IP66 rating against heavy dust and/or water ingress is available for the two passive versions, making them equally suitable for outdoor applications.

The two active versions have a built-in, mains-powered two-channel amplifier, with integral DSP to perform crossover and EQ functions. Versions CS-SnA have two balanced analogue inputs able to accept mic or line signals, a range of user-selectable presets to optimise the frequency response for the room and programme material in use, level control, a link output for connection to further loudspeakers and also allow for mono/stereo operation via the link. All connections and controls are on the rear panel. Versions CS-SnAD use the same amplifier and DSP technology but are designed to connect directly to a Dante™ AoIP (Audio over Internet Protocol) audio network. The analogue link output is provided as on versions CS-SnA.

Applications

The CS-S 8”, 10” and 12” models have been developed as versatile, high-SPL music and paging loudspeakers. They combine premium design with high-end components, and deliver excellent acoustic performance. They are ideally suited for use in foreground applications such as hospitality, gyms and sports halls, resorts and many outdoor applications. The two passive versions are suitable

for external installation when the optional weatherproofing adaptor (CS-IP66) is fitted, giving them an IP66 rating (protection against high levels of dust and/or water). All three sizes share the same acoustic signature, so installers can easily integrate multiple models from the range to suit areas with varying SPL requirements.

All versions:

- Premium drivers for exceptional sound quality and intelligibility
- Coaxial drivers give optimal off axis performance
- High SPL and excellent LF response
- Designed to be mounted vertically or horizontally
- Corrosion-resistant steel grille
- Optional corrosion-resistant mounting bracket suits either orientation
- Optional weatherproof cover gives IP66 rating (passive versions only)
- Passive versions only: 4-pin Euroblock and dual Neutrik® Speakon connectors for easy linking to further loudspeakers; mating Euroblock connectors supplied
- Loudspeakers and brackets available in black or white finish

‘T’ versions only:

- Integrated high power transformer for 70/100 V-line systems
- Rear mounted tap switch
- Transformer bypass setting allows 8 ohm operation
- Extra switch position for OFF

A’ versions only:

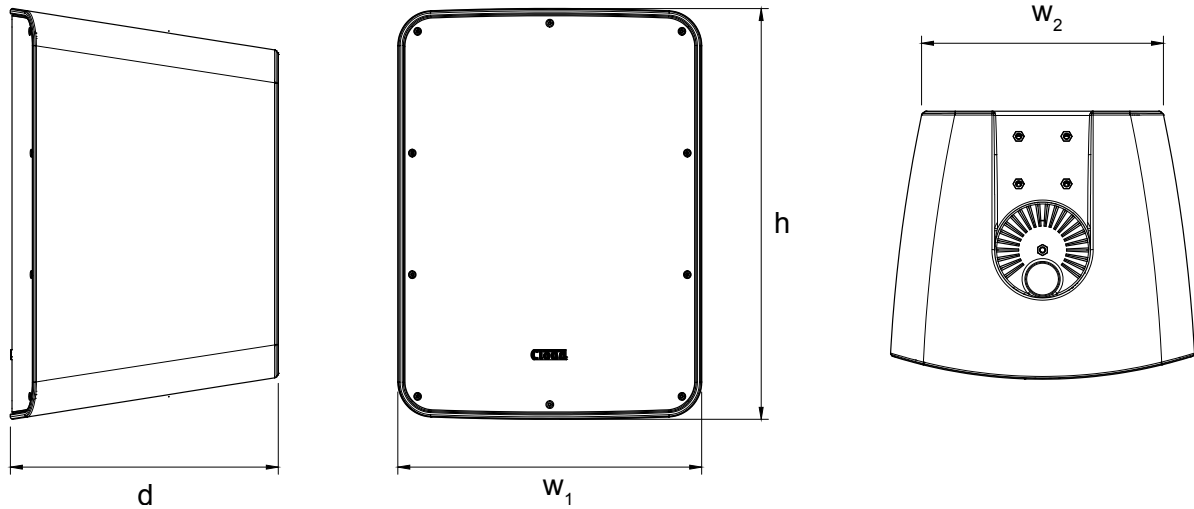
- Internal Class D amplifier with DSP
- Bi-amped via DSP-configured crossover
- Amplifier protection against over-temperature and output DC, HF or over-current
- Mains powered via IEC connector
- Two balanced analogue mic/line inputs (Neutrik® Combo XLR/TRS jack and 3-pin Euroblock)
- Dynamic microphones may be connected directly to the inputs
- Additional stereo line input on 3.5 mm TRS jack socket
- Per-input level controls
- Master level control
- Balanced line output (XLR and 3-pin Euroblock) for linking to further loudspeakers
- Five EQ presets: optimise the speaker for different mounting situations and programme material
- Mono/stereo operation – R channel is routed to link output for stereo/different programme use
- LEDs for Power, Signal presence, Peak, Protect and EQ selection

‘AD’ versions only:

- Internal Class D amplifier with DSP
- Bi-amped via DSP-configured crossover
- Amplifier protection against over-temperature and output DC, HF or over-current
- Mains powered via IEC connector
- Standard RJ45 Ethernet socket for direct connection to Dante™ network
- AES67 compatible
- Mono/stereo operation
- Master level control
- Balanced line output (XLR and 3-pin Euroblock) for linking to further loudspeakers
- Five EQ presets: optimise the speaker for different mounting situations and programme material
- Mono/stereo operation – R channel is routed to link output for stereo/different programme use
- LEDs for Power, Signal presence, Peak, Protect and EQ selection, plus network data rate and activity

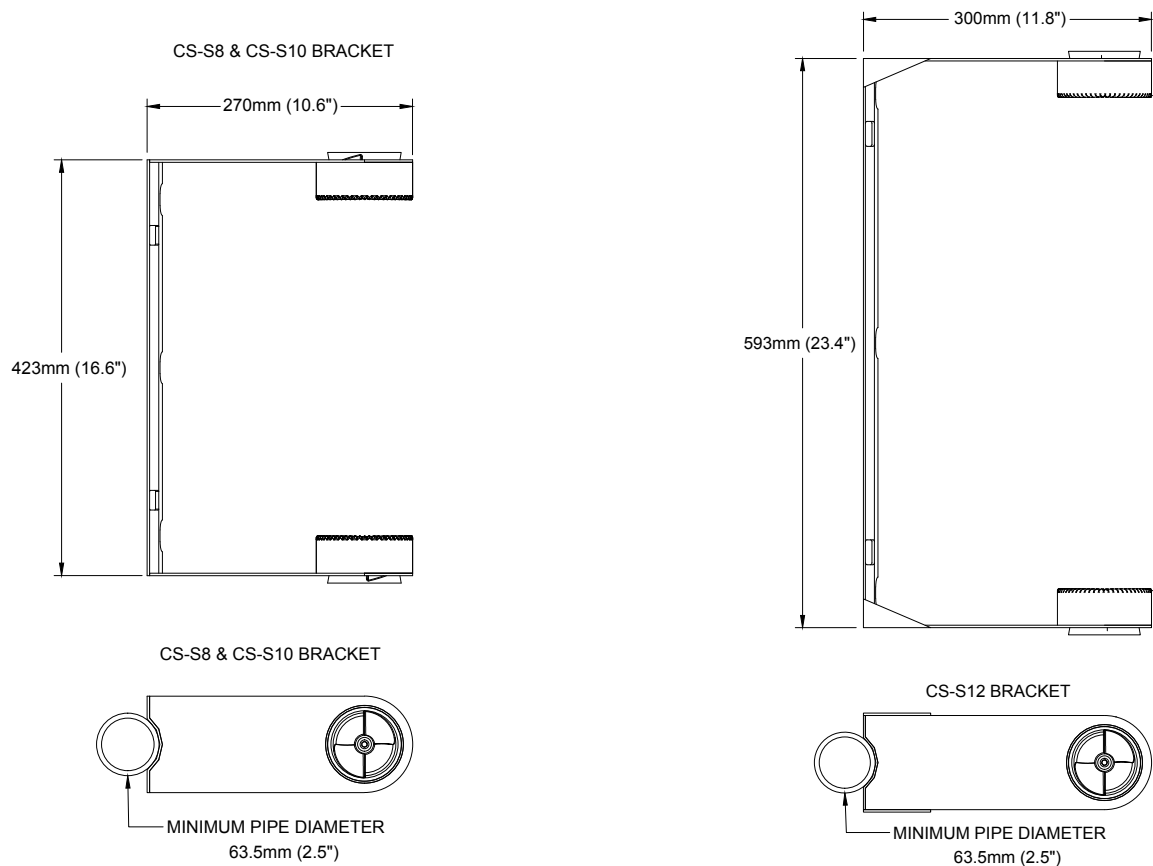
Loudspeaker Dimensions

CS-S8/10/12 ranges



	CS-S8 range	CS-S10 range	CS-S12 range
Height (h)	429.1 mm (16.9")	429.1 mm (16.9")	599.1 mm (23.6")
Front width (w_1)	273.3 mm (10.8")	317.5 mm (12.5")	369.1 mm (14.5")
Rear width (w_2)	225 mm (8.9")	252.7 mm (9.9")	252.3 mm (9.9")
Depth (d)	265 mm (10.4")	280 mm (11")	330 mm (13")

Bracket Dimensions (brackets available separately)



Additional Technical Details

CS-S8, CS-S10, CS-S12 only:

The units are 8 ohm impedance. Connection may be made on the recessed rear panel, either via a Euroblock terminal strip or a Neutrik® Speakon connector. The inputs are internally looped to a further pair of Euroblock terminals and a second Speakon socket, to provide a convenient method of connection to additional loudspeakers (providing the amplifier's minimum load impedance is observed).

CS-S8T, CS-S10T, CS-S12T only:

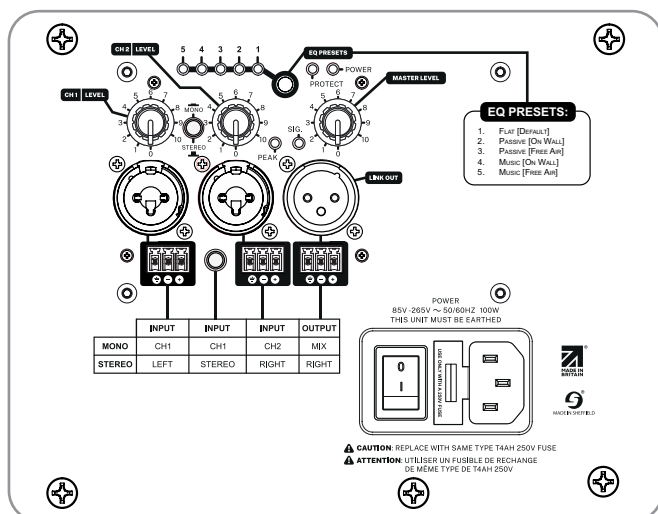
As CS-Sn models above, but intended for 70/100 V-line systems. The internal line transformer's secondary winding has four tapplings, selected by a rear panel rotary switch. A sixth switch position allows 8 ohm operation. The tap settings for the different models are given in the table below:

Tap	Power settings					
	CS-S8T		CS-S10T		CS-S12T	
	70 V	100 V	70 V	100 V	70 V	100 V
1	64 W	(n/u)	100 W	(n/u)	150 W	(n/u)
2	32 W	64 W	50 W	100 W	75 W	150 W
3	16 W	32 W	25 W	50 W	37.5 W	75 W
4	8 W	16 W	12.5 W	25 W	18.75 W	37.5 W
5	OFF					
6	8 ohms					

Input connections and the link output are as on the CS-Sn models above, with both a 4-pin Euroblock terminal strip and two Speakon connectors.

CS-S8A, CS-S10A, CS-S12A only:

These models are self-powered using an internal two-channel Class D amplifier with integral DSP and very low quiescent power consumption. All connections and controls are on the recessed rear panel:



The analogue inputs are balanced and available on XLR, 1/4" TRS jack and Euroblock connectors. The inputs accept both mic and line level. A stereo unbalanced input is also provided on a 3.5 mm TRS jack. The two inputs have separate level controls, and 45 dB of gain allows

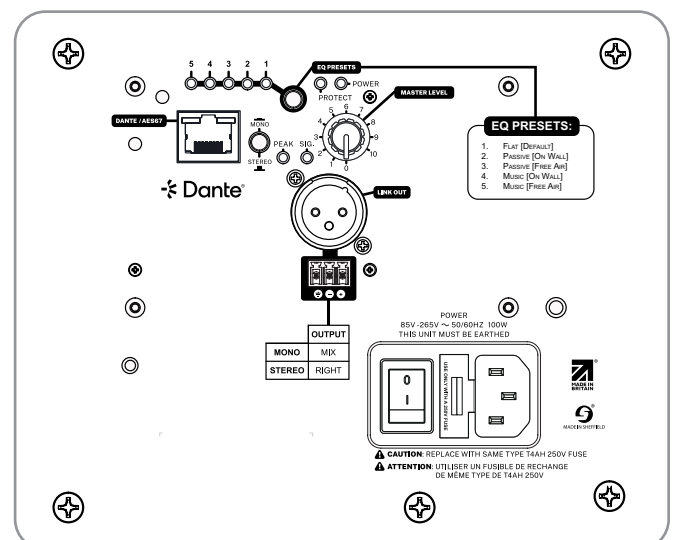
direct connection of dynamic microphones. The link output is balanced at line level and available on both XLR and Euroblock connectors.

The default EQ setting gives a frequency response suitable for free-field applications; four other EQ curves are available to suit on-wall mounting and/or various types of programme material.

Stereo or mono mode is selected with a push button: in mono mode, Channels 1 and 2 are mixed and sent to the link output as well as the internal amplifier. In stereo mode, only Channel 1 is fed to the amplifier; Channel 2 is routed to the link output (at line level) for connection to another loudspeaker.

CS-S8AD, CS-S10AD, CS-S12AD only:

These models are self-powered using an internal two-channel Class D amplifier with integral DSP and very low quiescent power consumption. All connections and controls are on the recessed rear panel:



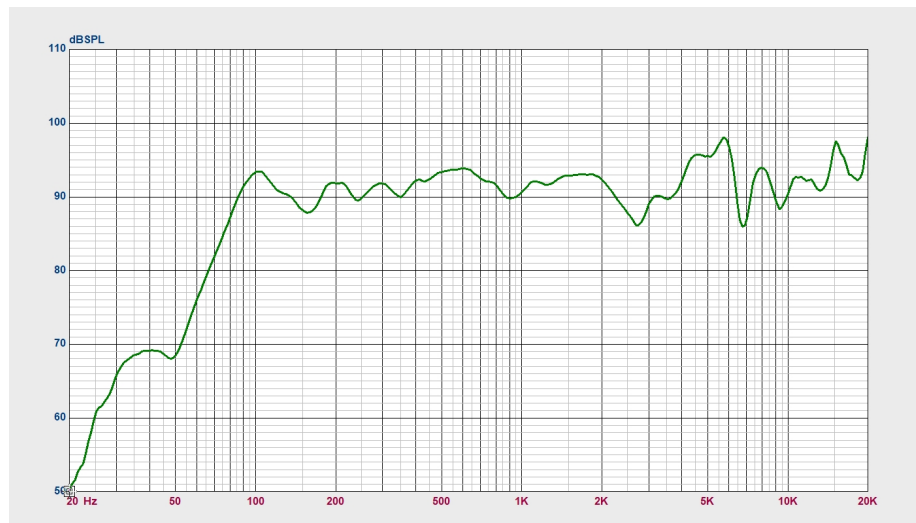
A standard RJ45 connector allows integration with a Dante™ network, and presents on the network as a two-channel receiver. The analogue link output is line level and balanced, and available on both XLR and Euroblock connectors.

The default EQ setting gives a frequency response suitable for free-field applications; four other EQ curves are available to suit on-wall mounting and/or various types of programme material.

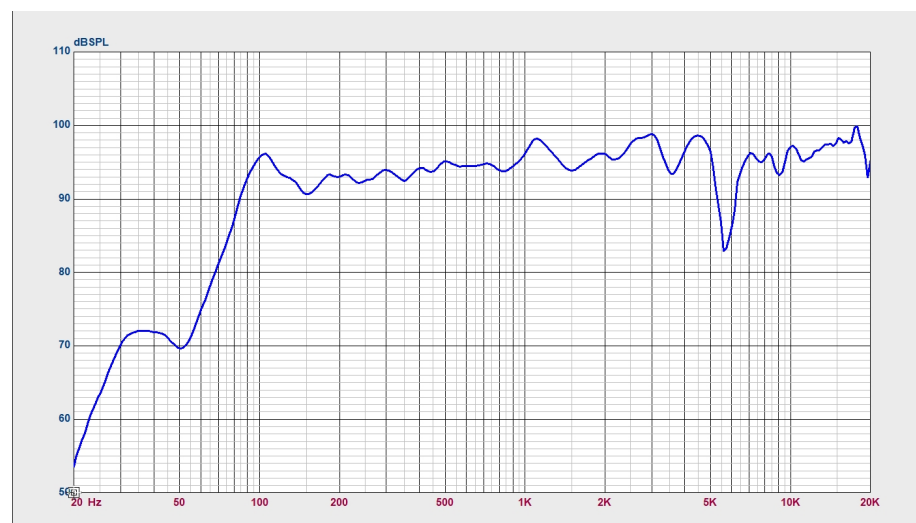
Stereo or mono mode is selected with a push button: in mono mode, the two channels are mixed and sent to the link output as well as the internal amplifier. In stereo mode, only the left channel is fed to the amplifier; the right channel is routed to the link output (at line level) for connection to another loudspeaker.

Graphs (passive models)

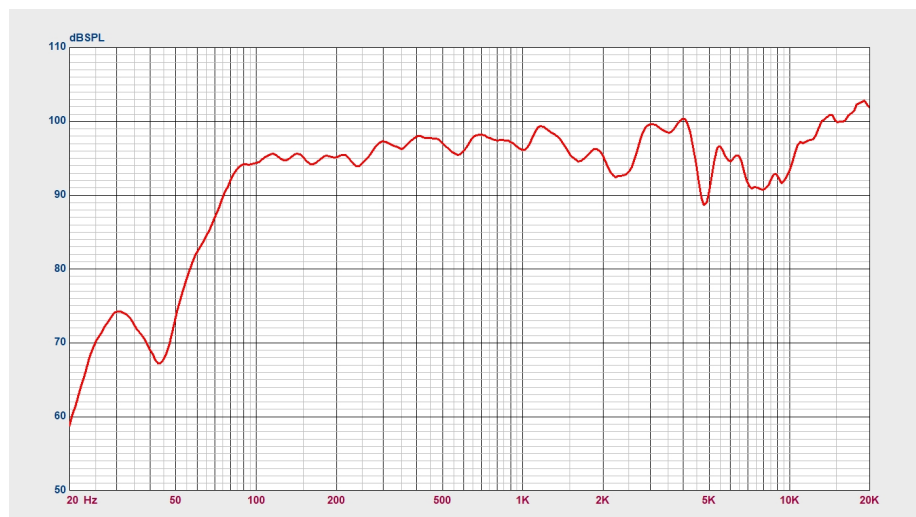
SPL vs frequency: Models CS-S8 and CS-S8T*



SPL vs frequency: Models CS-S10 and CS-S10T*



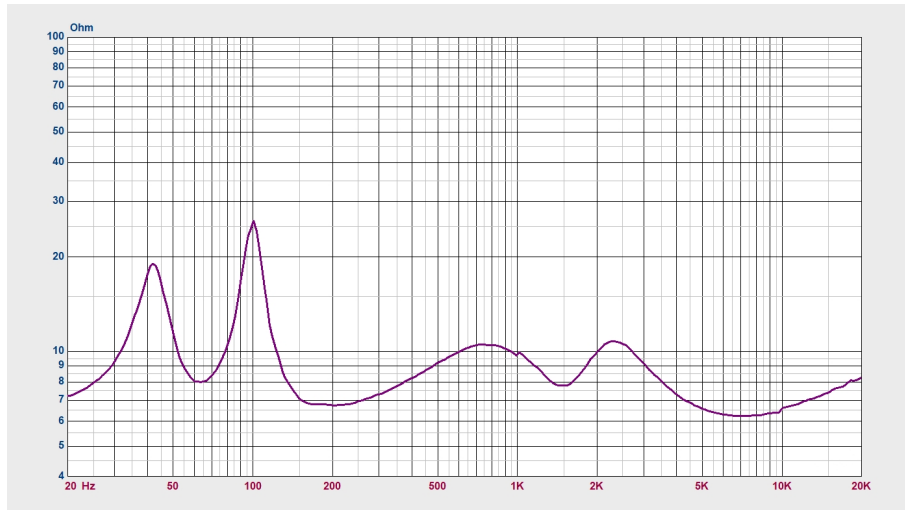
SPL vs frequency: Models CS-S12 and CS-S12T*



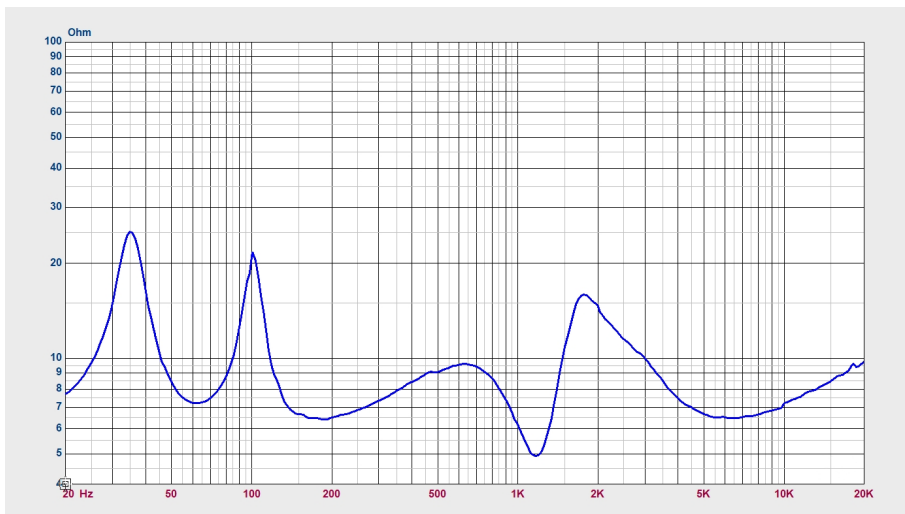
* T-versions only: with tap selector set to lo-Z position.

Graphs (passive models)

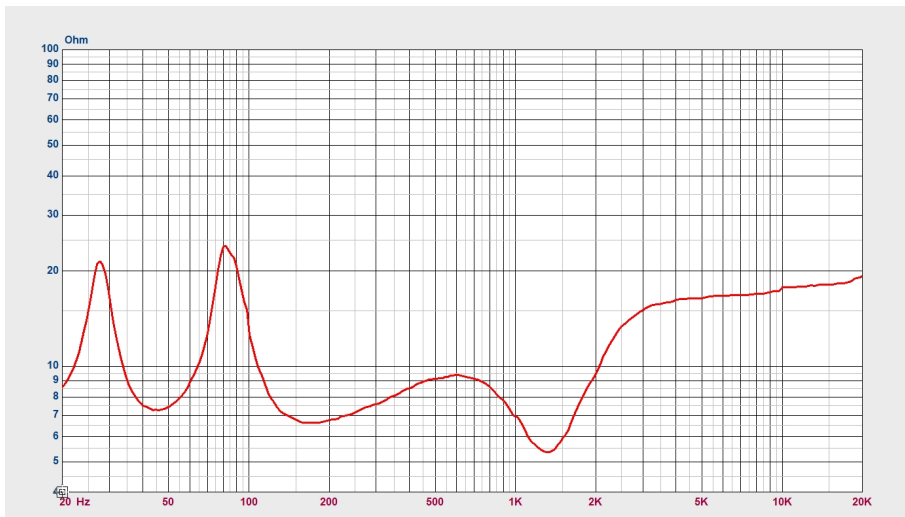
Impedance vs frequency: Models CS-S8 and CS-S8T*



Impedance vs frequency: Models CS-S10 and CS-S10T*



Impedance vs frequency: Models CS-S12 and CS-S12T*



* T-versions only: with tap selector set to lo-Z position.

Technical Specifications I - drivers and physical

		CS-S8, CS-S8T CS-S8A, CS-S8AD	CS-S10, CS-S10T CS-S10A, CS-S10AD	CS-S12, CS-S12T CS-S12A, CS-S12AD
Driver				
Type		2-way coaxial		
Response (f3)		75 Hz – 20 kHz	65 Hz – 20 kHz	55 Hz – 20 kHz
Response (f10)		60 Hz – 20 kHz	55 Hz – 20 kHz	50 Hz – 20 kHz
Impedance		8 ohms		
Crossover frequency		1.9 kHz	1.6 kHz	1.4 kHz
Sensitivity (1 W input @ 1 m)		92 dB	93 dB	96 dB
Power rating (continuous)		200 W	250 W	300 W
Power rating (peak)		300 W	375 W	450 W
Maximum SPL		116 dB	118.5 dB 117 dB (A & AD only)	122 dB 120 dB (A & AD only)
Average coverage angle (2-10 kHz)		100°	95°	90°
Tweeter		1" compression driver		
Woofer		8" treated paper, treated cloth surround	10" treated paper, treated cloth surround	12" treated paper, treated cloth surround
Physical				
Enclosure type		Surface-mounting, vertical or horizontal		
Enclosure construction		Linear low-density polyethylene		
Included accessories		Mating Euroblock connectors		
Optional accessories		Mounting brackets for all versions, includes safety tie-off kit: Part No. CS-810BKTW: for CS-S8 and CS-S10, white finish Part No. CS-810BKTB: for CS-S8 and CS-S10, black finish Part No. CS-12BKTW: for CS-S12, white finish Part No. CS-12BKTB: for CS-S12, black finish Part No. CS-IP66P: IP66-rated weatherproof cover (suitable for passive versions only)		
Available colours		Black RAL 9011 or white RAL 9003		
Net dimensions – loudspeaker (h x w x d)* *vertical orientation		429 mm x 273 mm x 265 mm (16.89" x 10.75" x 10.43")	429 mm x 318 mm x 280 mm (16.89" x 12.52" x 11.02")	599 mm x 369 mm x 330 mm (23.58" x 14.53" x 12.99")
Shipping dimensions – loudspeaker		480 mm x 350 mm x 350 mm (18.90" x 13.78" x 13.78")	480 mm x 380 mm x 360 mm (18.90" x 14.96" x 14.17")	640 mm x 450 mm x 430 mm (25.20" x 17.72" x 16.93")
Net weight – loudspeaker	CS-Sn:	8.16 kg (18.28 lb)	10.35 kg (23.18 lb)	15.43 kg (34.56 lb)
	CS-SnT:	9.08 kg (20.34 lb)	11.37 kg (25.47 lb)	16.99 kg (38.06 lb)
	CS-SnA:	8.79 kg (19.69 lb)	10.94 kg (24.51 lb)	16.09 kg (36.04 lb)
	CS-SnAD:	8.76 kg (19.62 lb)	10.91 kg (24.44 lb)	16.06 kg (35.97 lb)
Shipping weight - loudspeaker	CS-Sn:	9.21 kg (20.63 lb)	11.57 kg (25.92 lb)	17.17 kg (38.47 lb)
	CS-SnT:	10.11 kg (22.65 lb)	12.57 kg (28.16 lb)	18.67 kg (41.82 lb)
	CS-SnA:	9.84 kg (22.04 lb)	12.20 kg (27.33 lb)	17.83 kg (39.94 lb)
	CS-SnAD:	9.81 kg (21.97 lb)	12.17 kg (27.26 lb)	17.80 kg (39.87 lb)
Net dimensions – mounting bracket (l x w x h)		423 mm x 98 mm x 270 mm (16.65" x 3.86" x 10.63")		593 mm x 103 mm x 300 mm (23.35" x 4.06" x 11.81")
Materials – mounting bracket		Zinc treated, powder coated steel		
Shipping dimensions – mounting bracket		425 mm x 105 mm x 275 mm (16.73" x 4.13" x 10.83")		600 mm x 110 mm x 310 mm (23.62" x 4.33" x 12.20")
Shipping weights – mounting bracket		2.35 kg (5.26 lb)		3 kg (6.72 lb)

Technical Specifications 2 – electronic

	CS-S8, CS-S10, CS-S12	CS-S8T, CS-S10T, CS-S12T	CS-S8A, CS-S10A, CS-S12A	CS-S8AD, CS-S10AD, CS-S12AD
Input type	Lo-Z amplifier output	70/100 V-line system	Balanced analogue, mic and line level	2ch. Dante™ receiver
Input connector(s)	Neutrik® Speakon, 4-pin Euroblock		2 x latching Neutrik® Combo (XLR3F/6.35 mm TRS jack), 2 x 3-pin Euroblock, 3.5 mm TRS jack	RJ45 Ethernet
Link signal type	Lo-Z loop	70/100 V-line loop	Balanced line level	
Link output	Neutrik® Speakon or via Euroblock		Neutrik® XLR3M, 3-pin Euroblock	
Power consumption			6.5 W (quiescent) 49 W (1/8 power, pink noise)	
Amplifier protection			Over-temperature Detection of DC, HF, over-current at output	
Controls (rear panel)		Transformer tap/lo-Z selector (see separate table for ratings)	Input 1 level Input 2 level Master level Mono/stereo select EQ select	Master level Mono/stereo select EQ select
EQ presets			Free Field (default) On Wall Flat Music Speech	
LEDs			Power Protect Signal detect Peak level EQ preset x 5	Power Protect Signal detect Peak level EQ preset x 5 Network data rate Network activity
Mono/stereo selection			Mono: i/p's 1+2 mixed to amp and link o/p Stereo: i/p 1 to amp, i/p 2 to link o/p	
Mains input			IEC connector with integral switch and fuseholder	

Architect's and Engineer's Specification

The loudspeaker shall be available in three physical sizes and power ratings, according to the diameter of low frequency transducer fitted: 8 inches (203.2 mm), 10 inches (254 mm) and 12 inches (304.8 mm): the three sizes shall have continuous power ratings of 200 W, 250 W and 300 W respectively. The loudspeaker enclosure shall be of ported design, and constructed of linear low-density polyethylene with a powder coated steel front grille. The low frequency transducer shall be of the coaxial type with a separate concentrically mounted transducer for reproducing high frequencies of 1" (25 mm) diameter. The enclosure shall also contain a frequency dividing network and acoustic damping material. All electrical connectors and controls shall be on a recessed rear panel. A powder coated steel mounting bracket shall be available as an option to permit loudspeaker mounting in either a vertical or horizontal orientation. The bracket design shall include provision for cable management.

Each size of loudspeaker shall be available in four versions. Two versions shall be "passive", for connection to either i) a low-impedance amplifier output suitable for driving an 8 ohm load, or ii) a 70 V-line or 100 V-line distribution system. The passive versions shall be IP66 compliant when fitted with a weatherproof rear plate assembly, which shall be available as an option. The two further versions shall be "active", and shall include an internally-fitted two channel power amplifier allowing the loudspeaker to be either iii) fed with analogue audio from a balanced line level source, or iv) connected to a Dante™ (AES67). The power amplifier shall be AC mains-powered, and the loudspeaker so fitted shall meet all relevant safety regulations pertaining to such equipment. All models in the loudspeaker range shall be available in black or white finish.

Connection to the two passive versions shall be possible via both a Euroblock connector and a connector of the "Speakon" type: the input signal shall be internally looped to additional pins on the Euroblock connector and a second "Speakon" connector to facilitate linking to further loudspeakers. The 70/100 V-line version shall be fitted with an internal transformer having a tapped secondary winding to permit the loudspeaker to operate at a range of power ratings: a minimum of four taps shall be available for 70 V-line operation and three taps for 100 V-line mode operation; tap selection shall be made with a rotary switch. Additional switch positions shall a) bypass the transformer to allow the loudspeaker to operate from a standard low impedance amplifier output, and b) mute the loudspeaker.

The active version of the loudspeaker for operation with analogue sources shall be provided with two balanced inputs which shall be capable of operating with signals at either line or microphone level. The inputs shall be of balanced type, and available on 3-pin XLR connectors and 3-pin Euroblock connectors. The XLR connectors shall also be able to accept ¼" TRS jacks. There shall be an additional unbalanced line input on a single 3.5 mm TRS jack socket. The input signals shall be internally looped to a balanced line level output, which shall be available on both a 3-pin XLR connector and a 3-pin Euroblock connector for connection to further loudspeakers. The XLR connectors shall be of the latching type. It shall be possible to select two operating modes: i) the signals at Input 1 and Input 2 are summed internally and the sum fed to the input of the internal power amplifier and the link outputs; ii) the signal at Input 1 is fed to the input of the internal power amplifier and the signal at Input 2 is fed to the link outputs, this latter mode allowing convenient stereo operation with two loudspeakers. Mode selection shall be made with a push-button switch. Rotary controls shall be provided for signal level at each input and for master level. The power amplifier design will incorporate a range of equalisation curves, there shall be five such curves as a minimum, selectable by a push-button switch. The available curves shall include full frequency range operation. Other curves shall optimise the loudspeaker for use with speech or music programme material and when the loudspeaker is mounted directly on a wall. Visual confirmation of the active curve shall be provided via LEDs, with one LED per curve. Additional LEDs shall be provided to confirm i) connection to an AC mains supply, signal presence, peak signal level (signal level near clipping) and activation of the amplifier protection circuitry (signal level too high or other fault condition). The signal presence LED shall illuminate when an input signal level greater than -30 dBu is applied and the peak LED shall illuminate when an input signal level greater than +10 dBu is applied.

The active version of the loudspeaker for operation with network audio shall be provided with a standard RJ45 Ethernet network connector with two integral LEDs indicating network speed and activity respectively. It shall be possible to connect the loudspeaker to a Dante™ digital audio network, and it shall be identified by the network controller software as a two-channel receiving device. The decoded input signals shall be internally looped to a balanced line level output, which shall be available on both a 3-pin XLR connector and 3-pin Euroblock connector for connection to further loudspeakers. It shall be possible to select two operating modes: i) the two received audio channels are summed internally and the sum fed to the input of the internal power amplifier and the link outputs; ii) one signal is fed to the input of the internal power amplifier and the other is fed to the link outputs, this latter mode allowing convenient stereo operation with two loudspeakers. Mode selection shall be made with a push-button switch. A rotary control shall be provided for adjustment of input signal level. The power amplifier design will incorporate a range of equalisation curves, there shall be five such curves as a minimum, selectable by a push-button switch. The available curves shall include full frequency range operation. Other curves shall optimise the loudspeaker for use with speech or music programme material and when the loudspeaker is mounted directly on a wall. Visual confirmation of the active curve shall be provided via LEDs, with one LED per curve. Additional LEDs shall be provided to confirm i) connection to an AC mains supply, signal presence, peak signal level (signal level near clipping) and activation of the amplifier protection circuitry (signal level too high or other fault condition). The signal presence LED shall illuminate when an input signal level greater than -30 dBu is applied and the peak LED shall illuminate when an input signal level greater than +10 dBu is applied.

The passive versions of the loudspeakers shall be the Cloud CS-S8, Cloud CS-S10 and Cloud CS-S12 for low impedance applications and the Cloud CS-S8T, Cloud CS-S10T and Cloud CS-S12T for 70/100 V-line applications. The active versions of the loudspeakers shall be the Cloud CS-S8A, Cloud CS-S10A and Cloud CS-S12A for analogue audio applications and the Cloud CS-S8AD, Cloud CS-S10AD and Cloud CS-S12AD for Dante™ network applications.

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