



## Features

- Advanced new Dual Concentric driver design utilizing Omnimagnet technology
- Torus Ogive Waveguide device for improved broadband directivity
- Improved time alignment and phase coherence, delivering even better sonic performance
- High power and high sensitivity with extended frequency response and very low distortion
- Improved LF performance for applications where genuine bottom-end is a must
- Low insertion-loss, 30 watt line transformer for a more powerful and dynamic performance
- Convenient front-tapping switch for settings
- Magnetically-adhering grille system for easy custom painting and optional Arco designer grilles for minimal architectural impact
- Three-clamp, self-aligning mounting system
- UV/weather resistant UL94V-0 ABS construction for structural integrity
- Packaged with classic grille, tile rails and C-ring for quick and easy installation and simple stocking logistics
- Five year warranty

## Applications

- Voice Alarm Systems
- Multizone Foreground Music & Paging Systems
- Boardrooms & Offices
- Business Music Systems
- Airports, Convention Centres, Hotels
- Reception / Waiting Rooms
- Houses of Worship
- Retail Outlets / Shopping Malls
- Lounges / Bars
- Cruise Ships
- Courtrooms

## Product description

The Tannoy CMS 503DC is a full bandwidth, high power-handling and high sensitivity loudspeaker built around CMS 3.0 – the third generation of Tannoy's revolutionary Ceiling Monitor System technology. Based on an all-new evolution of Tannoy's proprietary Dual Concentric point-source driver, the CMS 503DC has been fundamentally re-engineered to deliver wider and more consistent broadband directivity, even greater intelligibility, and a more accurate and linear response.

The new Dual Concentric driver design features revolutionary Omnimagnet™ technology and unique patent-pending Torus Ogive Waveguide™ device, together providing more consistent and controlled directivity along with improved high frequency response. Improved time-alignment and greater coherence between LF and HF results in a wider sweet spot for enhanced performance both on- and off-axis. The re-designed baffle provides a subtle extension to the waveguide effect for additional sonic benefits.

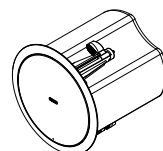
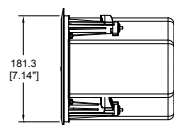
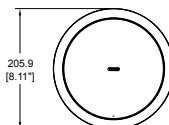
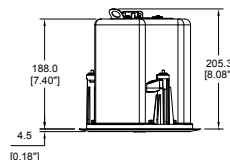
The CMS 503DC also features extra clamp extension to accommodate thicker ceiling panels, and a locking design that prevents inadvertent over-screwing. Magnetic grille attachment enables easy removal and fitting for custom painting and tapping changes with grilles now available as either traditional style (inset in bezel) or new Arco™ style which conceals the entire unit for more architect-friendly aesthetic appeal.

The CMS 503DC utilizes a 16 ohm driver, making it ideal for use in high performance low-impedance systems (with optimized performance when used in conjunction with Lab.gruppen LUCIA amplifiers). A low-insertion loss 30 W transformer is included, with convenient front bezel switching for taps at 30 W, 15 W and 7.5 W, with an additional 3.75 W tap for traditional constant voltage systems.

The CMS 503DC is available in two variants. The BM (Blind Mount) version is supplied with an integral back-can, ready to install as a single unit, while the CMS 503DC PI (Pre-Install) is supplied without a back-can (separate back-can available). The zinc plated steel back-cans have an integrated, recessed termination box. The removable locking connector has screw terminals for secure wire termination and loop-thru facility. Strain relief is provided by a clamping mechanism for use with plenum-rated cable or conduit, while the new design's spring-loaded and self-aligning clamps make for even quicker and easier installation. All models are supplied with classic grille, two tile support rails and one C-ring; Arco grille and plaster (mud) ring are available as optional accessories.

## Physical data

<b>Bezel diameter:</b>	205.9 mm (8.11")	<b>Hole Cutout Diameter:</b>	190.0 mm (7.48")
<b>BM Model:</b>		<b>PI Model:</b>	
Front of ceiling to rear of backcan	188.0 mm (7.40")	Front of ceiling surface to rear of speaker unit	133.3 mm (5.25")
Front of ceiling to top of safety loop	205.3 mm (8.08")	Front of accessory backcan bezel to top of safety loop	153.5 mm (6.04")

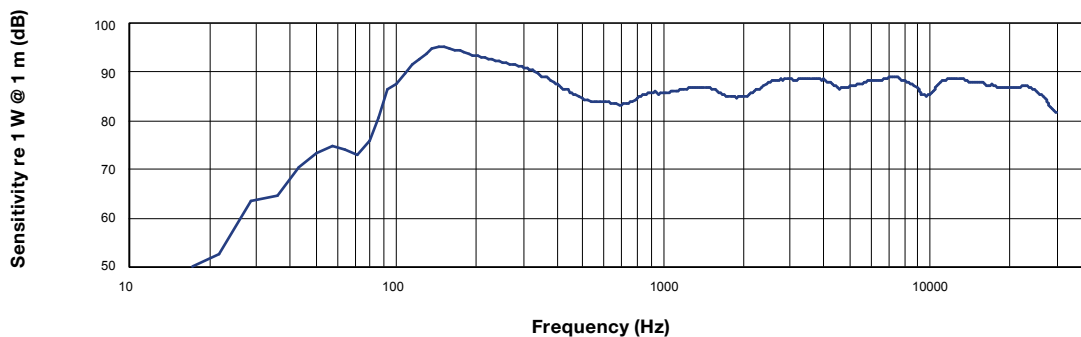


# Technical Data Sheet

## Performance measurements

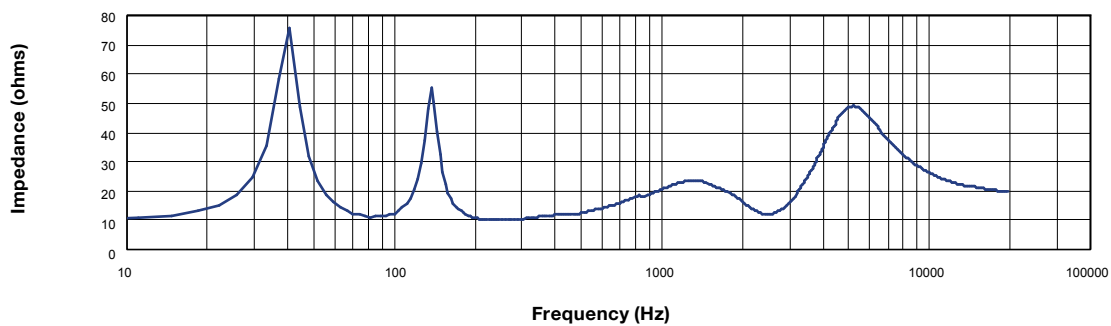
# CMS 503DC

### 1 m on-axis Frequency Response



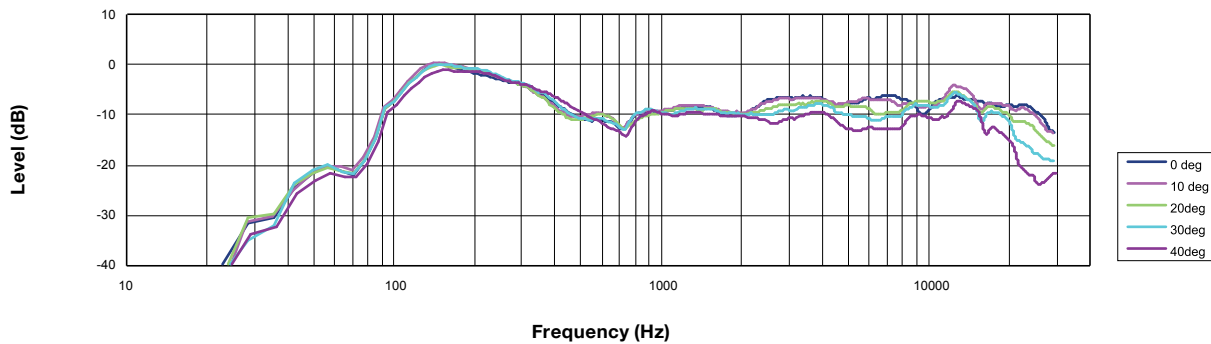
## Anechoic Frequency Response

### Impedance vs frequency



## Impedance

### Off-axis Frequency Response



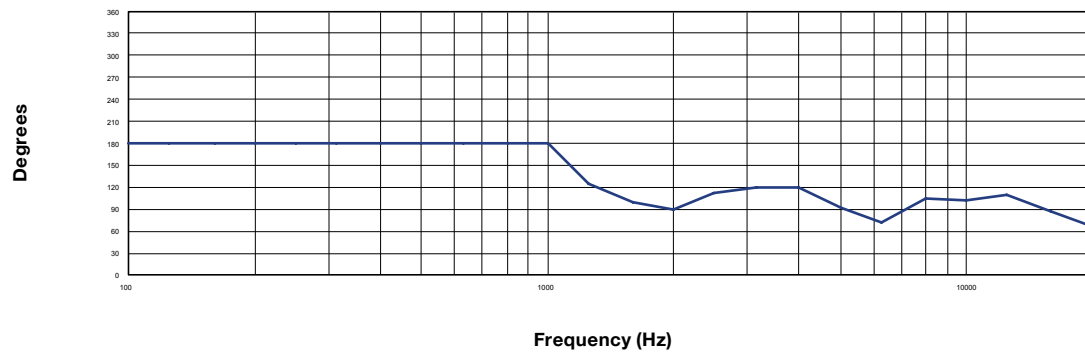
## Off Axis Response

# Technical Data Sheet

Performance measurements

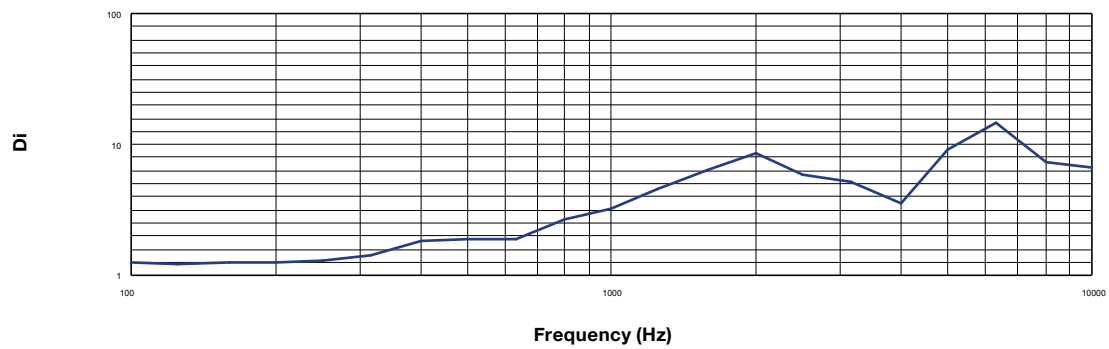
## CMS 503DC

Beamwidth vs Frequency



Beamwidth

Directivity Index (DI)

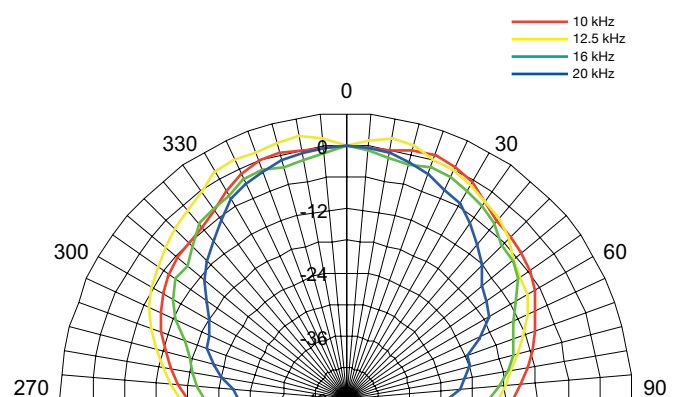
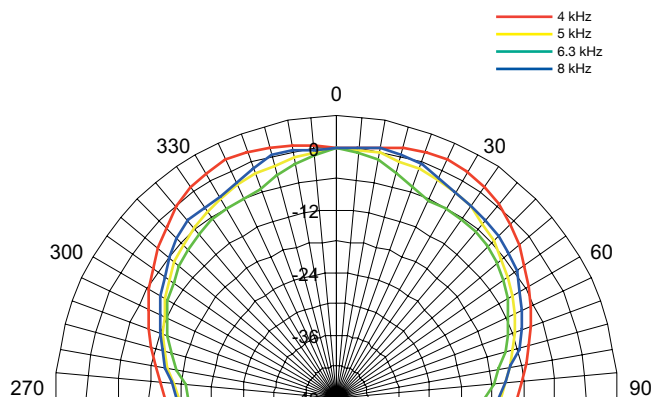
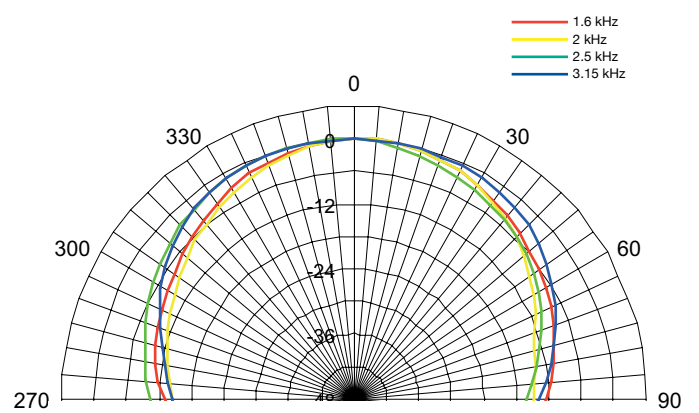
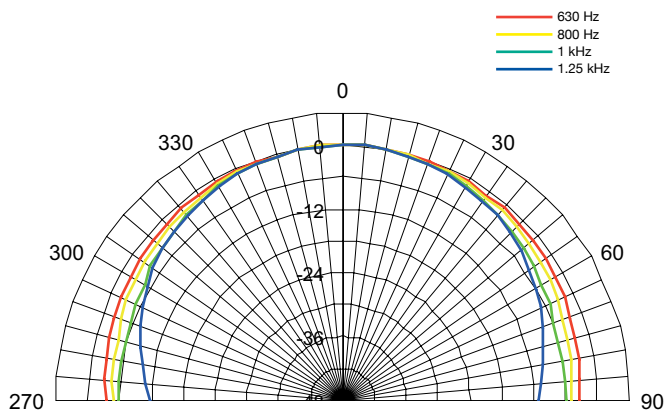
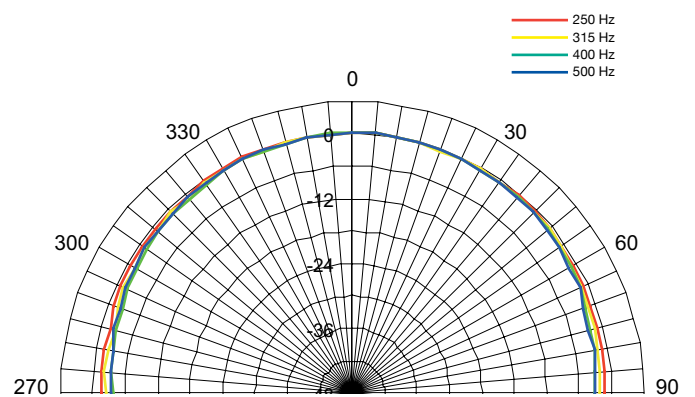
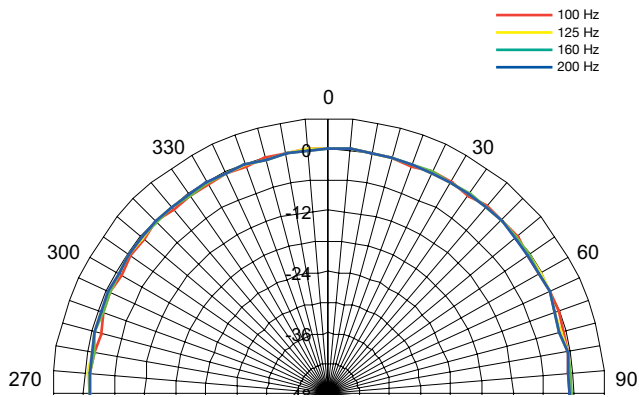


Directivity Index

# Technical Data Sheet

## Polar plots (1/3 octave)

# CMS 503DC



# Technical Data Sheet

## Specifications

# CMS 503DC

### Performance

<b>Frequency response (-3 dB) <sup>(1)</sup></b> BM Backcan	85 Hz - 50 kHz
<b>Frequency range (-10 dB) <sup>(1)</sup></b> BM Backcan	74 Hz - 54 kHz
<b>Frequency range (-10 dB) <sup>(1)</sup></b> PI Backcan	70 Hz - 54 kHz
<b>System sensitivity (1 W @ 1 m) <sup>(2)</sup></b>	89 dB (1 W = 4 V for 16 Ohms)
<b>Nominal Coverage Angle</b>	90 degrees conical
<b>Power Handling <sup>(3)</sup></b>	
Average	60 W
Programme	120 W
Peak	240 W
<b>Recommended Amplifier Power</b>	120 W @ 16 ohms
<b>Nominal Impedance (Lo, Z)</b>	16 ohms
<b>Rated maximum SPL</b>	
Average	107 dB
Peak	113 dB
<b>Transformer Taps (via front rotary switch)</b>	
70 V	30 W (165 Ω) / 15 W (330 Ω) / 7.5 W (660 Ω) / 3.75 W (1320 Ω) / OFF & low impedance operation
100 V	30 W (330 Ω) / 15 W (660 Ω) / 7.5 W (1320 Ω) / OFF & low impedance operation

### Transducers

<b>Dual Concentric point source driver</b>	1 x 130 mm (5.0") Dual Concentric driver, using Omnimagnet technology
<b>Low Frequency</b>	35 mm (1.38") voice coil, treated multi fiber paper pulp cone
<b>High Frequency</b>	20 mm (0.79") PEI dome

### Physical

<b>Enclosure</b>	
Backcan	Zinc plated steel
Baffle	Reflex loaded UL 94V-0 rated ABS
Grille	Steel, with weather resistant coating
<b>Safety Features</b>	Safety ring located at rear of enclosure for load bearing safety bond
<b>Clamping Design</b>	Security toggle clamp
<b>Backcan Options</b>	
Blind Mount (BM)	Complete with fixed backcan
Pre Install (PI)	Separate backcan for pre-installation
<b>Cable Entry Options</b>	Cable clamp & squeeze connector for conduit up to 22 mm
<b>Conduit Knockouts on PI Backcan</b>	3 Sets of horizontal positions 19 / 22 / 28 mm (0.75" / 0.87" / 1.10")
<b>Connectors</b>	Removable locking connector with screw terminals with "loop through" facility
<b>Compliance</b>	UL-1480, UL-2043, CE
<b>Dimensions</b>	
Bezel diameter	205.9 mm (8.11")
BM Model: Front of ceiling to rear of backcan	188.0 mm (7.40")
BM Model: Front of ceiling to top of safety loop	205.3 mm (8.08")
PI Model: Front of ceiling surface to rear of speaker unit	133.3 mm (5.25")
PI Model: Front of accessory backcan bezel to top of safety loop	153.5 mm (6.04")
<b>Hole cutout diameter (all models)</b>	190 mm (7.48")
<b>Net Weight (ea)</b>	
CMS 503DC BM	4.1 kg (9.04 lbs)
CMS 503DC PI	3.1 kg (6.83 lbs)
PI Backcan	2.6 kg (5.73 lbs)
<b>Included Accessories</b>	C-Ring, tile-bridge kit, paint mask, cut-out template, grille
<b>Optional Accessories</b>	Plaster (mud) ring
<b>Packed Quantity</b>	2

### Ordering Information

Part Number	Colour
<b>8001 7420</b> <b>CMS 503DC BM</b>	<b>White / Paintable</b>
<b>8001 7430</b> <b>CMS 503DC PI</b>	<b>White / Paintable</b>
<b>8001 4180</b> <b>CMS 503</b> <b>Plaster (Mud) Ring</b>	<b>Zinc Plated Steel</b>
<b>8001 7550</b> <b>CMS 503 PI Backcan</b>	<b>Zinc Plated Steel</b>
<b>8001 7880</b> <b>CMS 503 Arco Grille</b>	<b>White / Paintable</b>



### Notes:

1. Average over stated bandwidth. Measured in an IEC baffle in an Anechoic Chamber
2. Unweighted pink noise input, measured at 1 metre on axis
3. Long term power handling capacity as defined in EIA - 426B test

A full range of measurements, performance data, CLF and Ease™ Data for CMS 503DC can be downloaded from [www.tannoypro.com](http://www.tannoypro.com).

Tannoy operates a policy of continuous research and development. The introduction of new materials or manufacturing methods may introduce variations in actual performance; however, actual performance always will equal or exceed the published specifications, which Tannoy reserves the right to alter without prior notice. Please verify the latest specifications when dealing with critical applications.

Copyright (c) 2014 Tannoy Limited. All rights reserved.