

TANNOY®

CMS

CEILING MONITOR SYSTEMS INSTALLATION MANUAL

CMS 401e | CMS 401DCe

Tannoy has a policy of continuous improvement and this specification sheet provides the latest information at the time of printing.
All specifications may be subject to further change. Please contact the Tannoy website for the latest information.

CMS

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Template cutout size: 187mm

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1. INTRODUCTION

Thank you for purchasing this Tannoy Ceiling Monitor System product. This product range is suited for music and speech reinforcement applications requiring exceptional sonic quality with uncompromised reliability.

2. UNPACKING

Every Tannoy product and accessory is carefully inspected before packing. After unpacking, please inspect your product to make sure no damage has occurred in transit. In the unlikely event of any damage, would you please notify your dealer immediately and retain your shipping carton, as your dealer may ask you to return the faulty unit to him for inspection.

Each CMS loudspeaker is packed in pairs and provided with the following accessories as standard; C Ring, tile-bridge kit and cut-out template. A plaster (mud) ring is also available as an optional extra.

3. SAFETY NOTICES

Some regional construction codes require the use of a secondary method of securing loudspeakers in ceiling to provide security of a back up support. A secondary support line should be attached from the safety loop on the rear of the product to a source point on the ceiling. Please consult the relevant construction codes in your region.

When using a power driver to install the product it is essential to use the correct torque level settings to avoid over tightening and damage to the ceiling material or clamps.

Recommended torque setting: 1.5Nm

Tannoy will not be held responsible for any damages caused by the improper installation of these loudspeakers.

SAFETY NOTE:

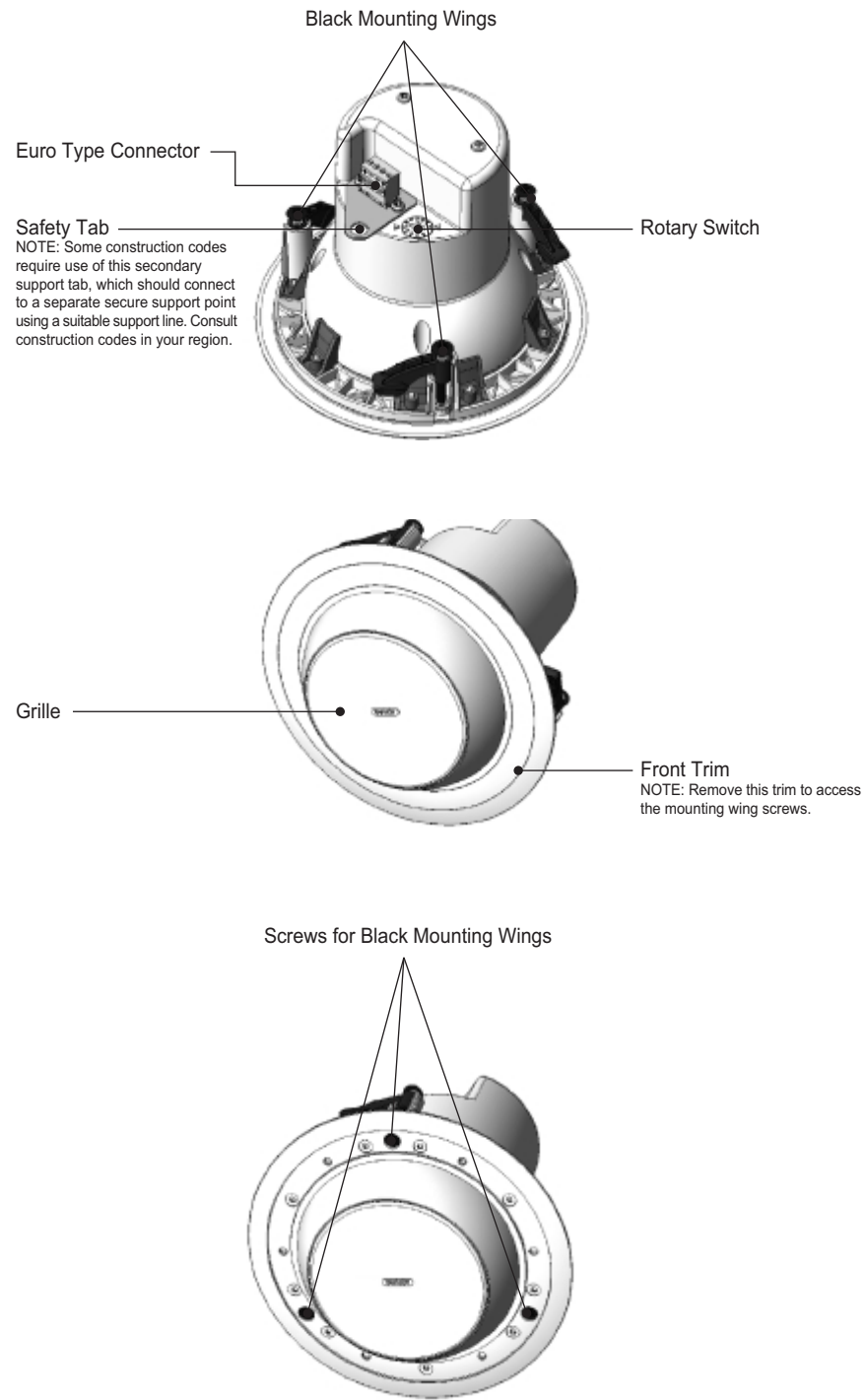
In order to comply with relevant fire safety regulations (i.e. BS 5839:1998), it is required that in the event of fire, that failure of the circuit to which the loudspeaker is connected does not occur before evacuation of the building is complete. Suitable measures include: -

- a) use of terminal blocks (for connection to primary) with a melting point of not less than 650°C, for example constructed from ceramic materials;*
- c) use of terminal blocks of a lower melting point but protected with thermal insulation;*
- d) use of terminal blocks such that, on melting, an open-circuit or a short-circuit does not occur.*

4. ALTERNATIVE INSTALLATION APPLICATIONS

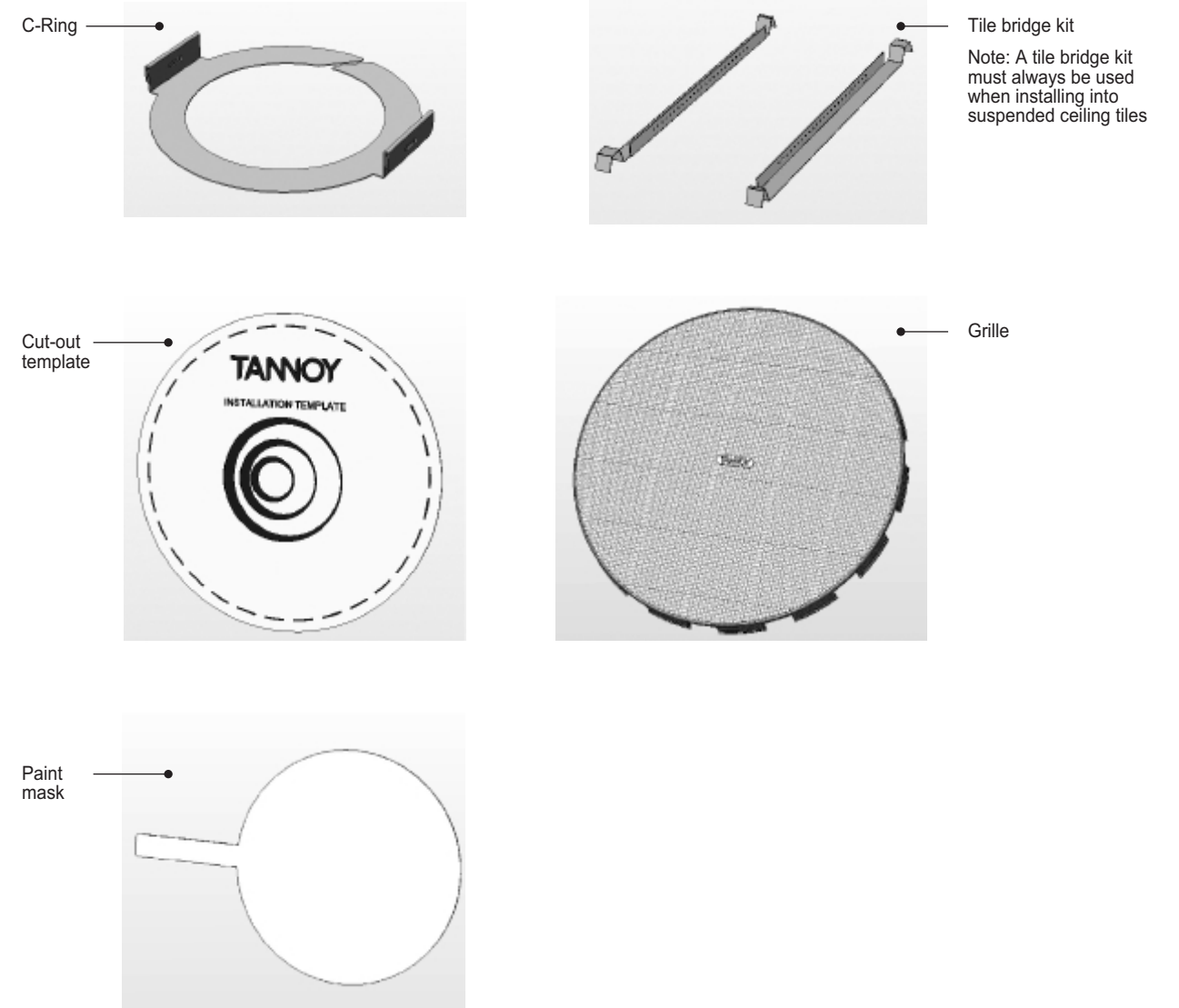
The Tannoy CMS401 DCe and CMS401e speakers are primarily designed for in-ceiling applications. However, the versatile design allows for installation into other applications such as boardroom tables and museum display kiosks. The thickness of the installation surface must be between 1mm and 20mm. It is your responsibility to ensure that the installation surface is strong enough to support the weight of the speaker. Please contact Tannoy customer services if you require further advice.

5. PRODUCT FEATURE IDENTIFICATION:

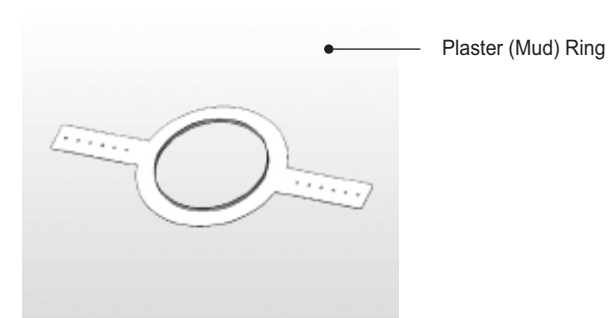


6. ACCESSORIES:

Standard Accessories



Optional Accessories

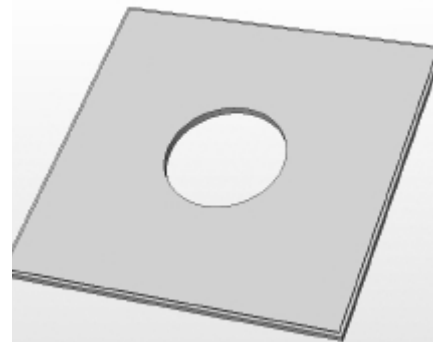


7.1 MECHANICAL INSTALLATION GUIDE FOR SUSPENDED CEILINGS

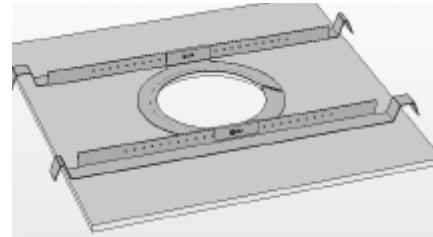
- 1 Remove the ceiling tile from its frame and place it on a flat surface. Mark the cut-out area on the ceiling tile by tracing around the template provided.



- 2 Cut out the hole in the ceiling tile using a circular saw or pad saw.

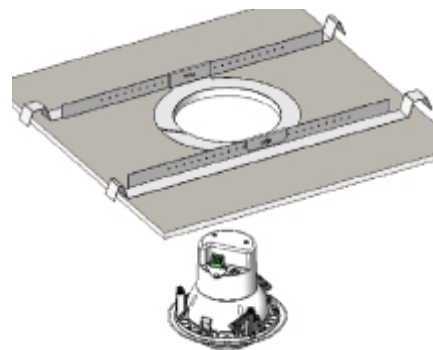


- 3 Place the C-ring and tile-bridge on top of the ceiling panel, aligning the C-ring over the hole, and screw the C-ring to the tile bridge using the fixings provided.

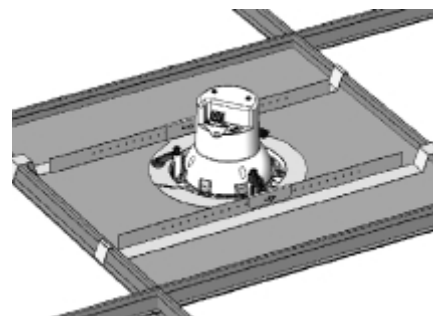


- 4 Slide the speaker assembly through the hole and turn the screws on the front of the speaker to extend the black mounting wings. Tighten the screws until a firm grip is achieved.

DO NOT OVERTIGHTEN!



- 5 Slide the tile panel back into the suspended ceiling. The tile bridge ends will catch over the railings, supporting the weight of the speaker.



- 6 Swivel the speaker to point in the desired direction. Tighten the black mounting wing screws until a firm grip is achieved. If using a power driver, Tannoy recommends a torque setting of 1.5Nm.

DO NOT OVERTIGHTEN!

NOTE: When the screws are tightened the speaker will lock into position.

7.2 MECHANICAL INSTALLATION GUIDE FOR SHEET-ROCK (PLASTER BOARD) CEILINGS

- 1 Mark the cut-out area on the ceiling by tracing around the template provided.



- 2 Cut out the hole in the ceiling using a circular saw or pad saw, then slide the C-ring into the ceiling, aligning it over the cut-out hole).



- 3 Go to section 6 for wiring and set-up instructions then return to point 4 below.

- 4 Slide the speaker assembly through the hole then swivel the speaker to point in the desired direction.

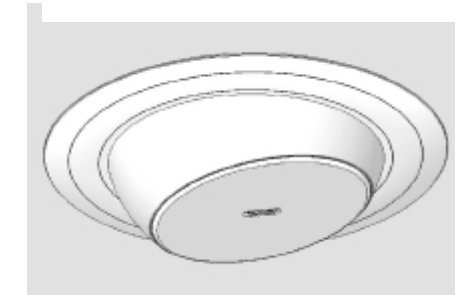
Tighten the black mounting wing screws until a firm grip is achieved. If using a power driver, Tannoy recommends a torque setting of 1.5Nm.

DO NOT OVERTIGHTEN!

NOTE: When the screws are tightened the speaker will lock into position.



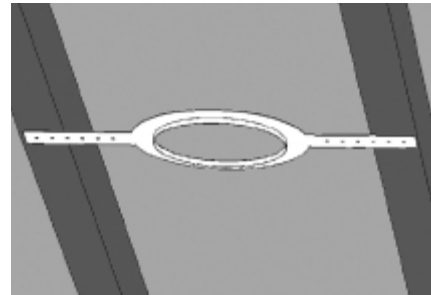
- 5 Replace the front trim to conceal the mounting wing screws.



7.3 MECHANICAL INSTALLATION INSTRUCTIONS FOR OPTIONAL PLASTER RING:

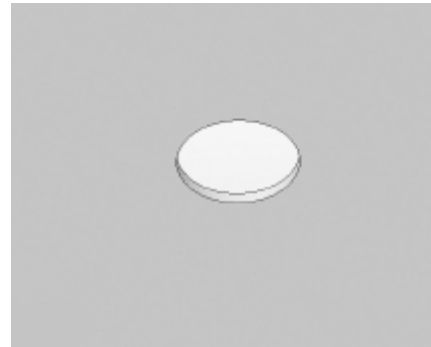
An optional plaster (mud) ring bracket is available from Tannoy. This bracket is designed to be pre-installed into newly constructed, non-suspended ceilings.

- 1 | Nail or screw the plaster ring to the joists.



- 2 | Lay the speaker wiring to where the speaker will be fitted and complete the plastering work on the ceiling.

- 3 | Cut out the hole in the ceiling using a circular saw or pad saw.



- 4 | Go to section 6 for instructions on wiring then return to point 5 below.

- 5 | Slide the speaker assembly through the hole then swivel the speaker to point in the desired direction.

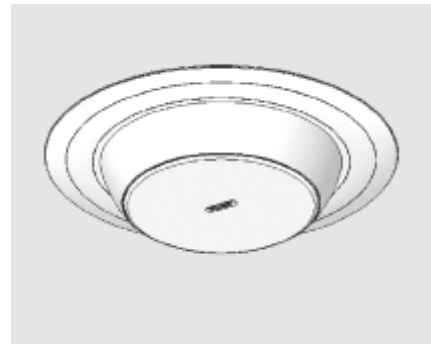
Tighten the black mounting wing screws until a firm grip is achieved. If using a power driver, Tannoy recommends a torque setting of 1.5Nm.

DO NOT OVERTIGHTEN!

NOTE: When the screws are tightened the speaker will lock into position.

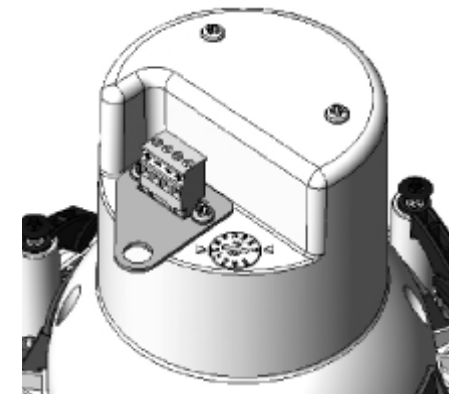


- 6 | Insert grille by pushing it onto the speaker.



8. WIRING AND SETTING UP:

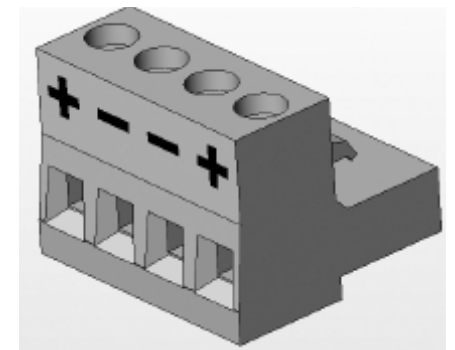
- 1 | Locate the euro socket at the back of the product.



- 2 | For connection to an amplifier, use pins 1 and 2:
 - Pin 1 is positive
 - Pin 2 is negative

For connection to additional speakers in a distributed line, pins 3 and 4 are in parallel where:

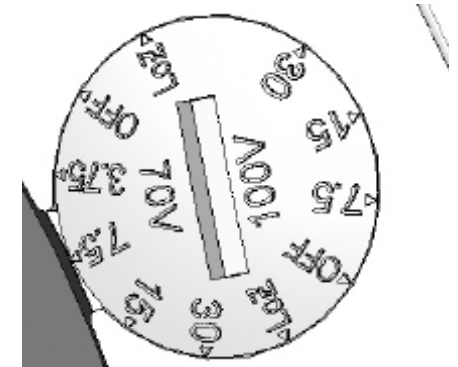
- Pin 3 is negative
- Pin 4 is positive



- 3 | Use the rotary switch located on the front of the unit to select whether you wish to use the speaker in a low-impedance or distributed-line application.

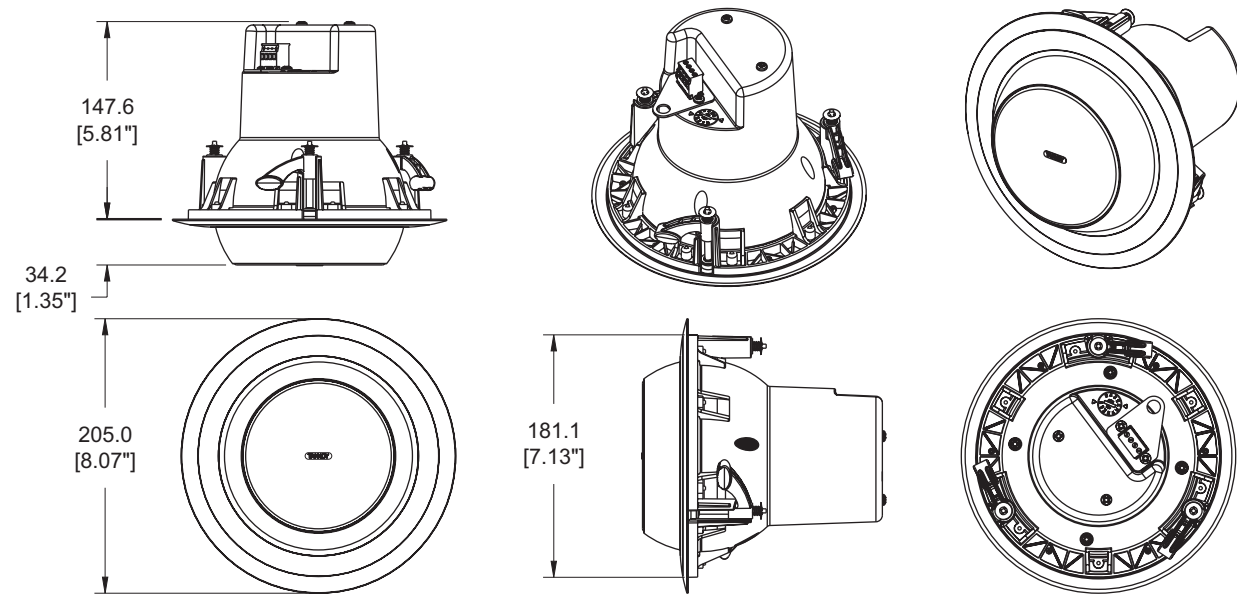
THE SPEAKER IS SUPPLIED IN LOW IMPEDANCE MODE. NEVER CONNECT THE SPEAKER TO A 70/100 VOLT AMPLIFIER WHILE IT IS SET FOR LOW IMPEDANCE.

All CMS401e and CMS401 DCe models use a 30W transformer. When using distributed-line systems, the transformer can be tapped at 30W, 15W and 7.5W, with an additional 3.75W tapping for 70.7V line systems.



9.1 CMS 401e and CMS 401DCe DIMENSIONS:

Template cutout size: 187mm



10. TECHNICAL SPECIFICATIONS:

SYSTEM	CMS401DCe	CMS401e
Frequency Response (-3dB) ⁽¹⁾	100Hz - 50kHz	100Hz - 22kHz
Frequency Range (-10dB) ⁽¹⁾	85Hz - 54kHz	85Hz - 24kHz
System Sensitivity (1W @1m) ⁽²⁾	88dB (1W = 2.83V for 8 Ohms)	87dB (1W = 2.45V for 6 Ohms)
Nominal Coverage Angle	90 degrees conical	90 degrees conical
Coverage Angle (1kHz to 6kHz)	120 degrees	110 degrees
Directivity Factor (Q)	5.1 averaged 1kHz to 6kHz	5.3 averaged 1kHz to 6kHz
Directivity Index (DI)	6.2 averaged 1kHz to 6kHz	6.3 averaged 1kHz to 6kHz
Rated Maximum SPL	106dB (average) 112dB (peak)	104dB (average) 110dB (peak)
Power Handling ⁽³⁾		
Average	60W	50W
Programme	120W	100W
Peak	240W	200W
Recommended Amplifier Power	120W @ 8 Ohms	100W @ 6 Ohms
Nominal Impedance	8 Ohms	6 Ohms
Transformer Taps (via rear rotary switch)		
70V	30W / 15W / 7.5W / 3.75W / OFF & low impedance operation	30W / 15W / 7.5W / 3.75W / OFF & low impedance operation
100V	30W / 15W / 7.5W / OFF & low impedance operation	30W / 15W / 7.5W / OFF & low impedance operation
Distortion		
10% Full Power	2nd Harmonic 3rd Harmonic	2nd Harmonic 3rd Harmonic
250Hz	2.62% 0.50%	1.37% 0.139%
1kHz	0.74% 0.53%	0.92% 0.23%
10kHz	0.62% 0.09%	1.33% 0.342%
1% Full Power	2nd Harmonic 3rd Harmonic	2nd Harmonic 3rd Harmonic
250Hz	0.68% 0.22%	0.42% 0.19%
1kHz	0.11% 0.32%	0.34% 0.17%
10kHz	0.26% 0.06%	0.46% 0.33%
Crossover Point	2kHz - 2nd order LF, 2nd Order HF (with dynamic HF Protection)	7kHz Inductively Coupled

Notes
 (1) Average over stated Bandwidth. Measured in an IEC baffle in an Anechoic Chamber
 (2) Unweighted Pink noise input, measured at 1m on axis
 (3) Long term power handling capacity as defined in EIA - 426B test

TRANSDUCERS

Low Frequency	100mm (4.00") Dual Concentric™ constant directivity driver with a multi fibre paper pulp cone	100mm (4.00") mineral loaded polypropylene ICT™
High frequency	19mm (0.75") titanium dome with neodymium magnet system	

PHYSICAL

Enclosure

Baffle/Enclosure	Reflex loaded UL 94V-0 rated ABS	Reflex loaded UL 94V-0 rated ABS
Grille	Steel, with weather resistant coating	Steel, with weather resistant coating
Safety Features	Safety ring located at rear of enclosure for load bearing safety bond	Safety ring located at rear of enclosure for load bearing safety bond
Clamping Design	Security toggle clamp	Security toggle clamp
Connectors	Removable locking connector with screw terminals with "loop through" facility	Removable locking connector with screw terminals with "loop through" facility
Hole Cutout Diameter	187mm (7.36")	187mm (7.36")

Dimensions

Bezel diameter	205mm (8.07")	205mm (8.07")
Front of ceiling to rear of pod	147.6mm (5.81")	147.6mm (5.81")
Net Weight (ea)	2.96kg (6.36lbs)	2.89kg (6.36lbs)
Included Accessories	C Ring, tile bridge, paint mask, cutout template, grille	C Ring, tile bridge, paint mask, cutout template, grille
Optional Accessories	Plaster (mud) ring	Plaster (mud) ring

11. PAINTING

If desired, the grille and baffle panel may be painted to match the surrounding décor.

Painting the baffle:

- ⊗ Carefully mask off the driver assembly using the paint-mask provided to ensure that the paint does not come into contact with the cone and roll surround.

Painting the grille:

- ⊗ Carefully remove the acoustically transparent foam from the reverse side of the grille.
- ⊗ Paint the grille and then replace the foam.
- ⊗ Re-bond the foam to the grille over the entire area using a light spray-adhesive to avoid audible resonances.

Painting the trim:

- ⊗ The speaker must be aimed before painting.
- ⊗ The rubber trim should be left in place while painting.
- ⊗ Apply a vinyl emulsion to the trim.

12. WARRANTY

No maintenance of the CMS loudspeaker is necessary.

All Tannoy professional loudspeaker products are covered by a 5 year warranty from the date of manufacture subject to the absence of misuse, overload or accidental damage. Claims will not be considered if the serial number has been altered or removed. Work under warranty should only be carried out by a Tannoy Professional dealer or service agent. This warranty in no way affects your statutory rights. For further information please contact your dealer or distributor in your country. If you cannot locate your distributor please contact Customer Services, Tannoy Ltd at the address given below.

Customer Services
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E-mail: enquiries@tannoy.com

DO NOT SHIP ANY PRODUCT TO TANNOY WITHOUT PREVIOUS AUTHORISATION

Our policy commits us to incorporating improvements to our products through continuous research and development. Please confirm current specifications for critical applications with your supplier.

13. DECLARATION OF CONFORMITY:



The following apparatus is/are manufactured in China for Tannoy Ltd of Rosehall Industrial estate, Coatbridge, Scotland, ML5 4TF and conform(s) to the protection requirements of the European Electromagnetic Compatibility Standards and Directives relevant to Domestic Electrical Equipment. The apparatus is designed and constructed such that electromagnetic disturbances generated do not exceed levels allowing radio and telecommunications equipment and other apparatus to operate as intended, and, the apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance to enable operation as specified and intended. This equipment conforms to the requirements of the EMC Directive 89/336/EEC, amended by 92/31/EEC and the requirements of the Low Voltage Directive 73/23/EEC, amended by 93/68/EEC.

Details of the Apparatus:	Tannoy Contractor Loudspeaker
Model Numbers:	CMS 401e CMS 401DCe
Applicable Standards:	EN55103-1 1996 Emission EN55103-2 1996 Immunity
Electrical Safety:	Electrical Safety EN 60065: 1993

Signed:

Position: Engineering Director - Professional Products

Tannoy Professional

Date: 01/06/2006

For Tannoy Ltd

