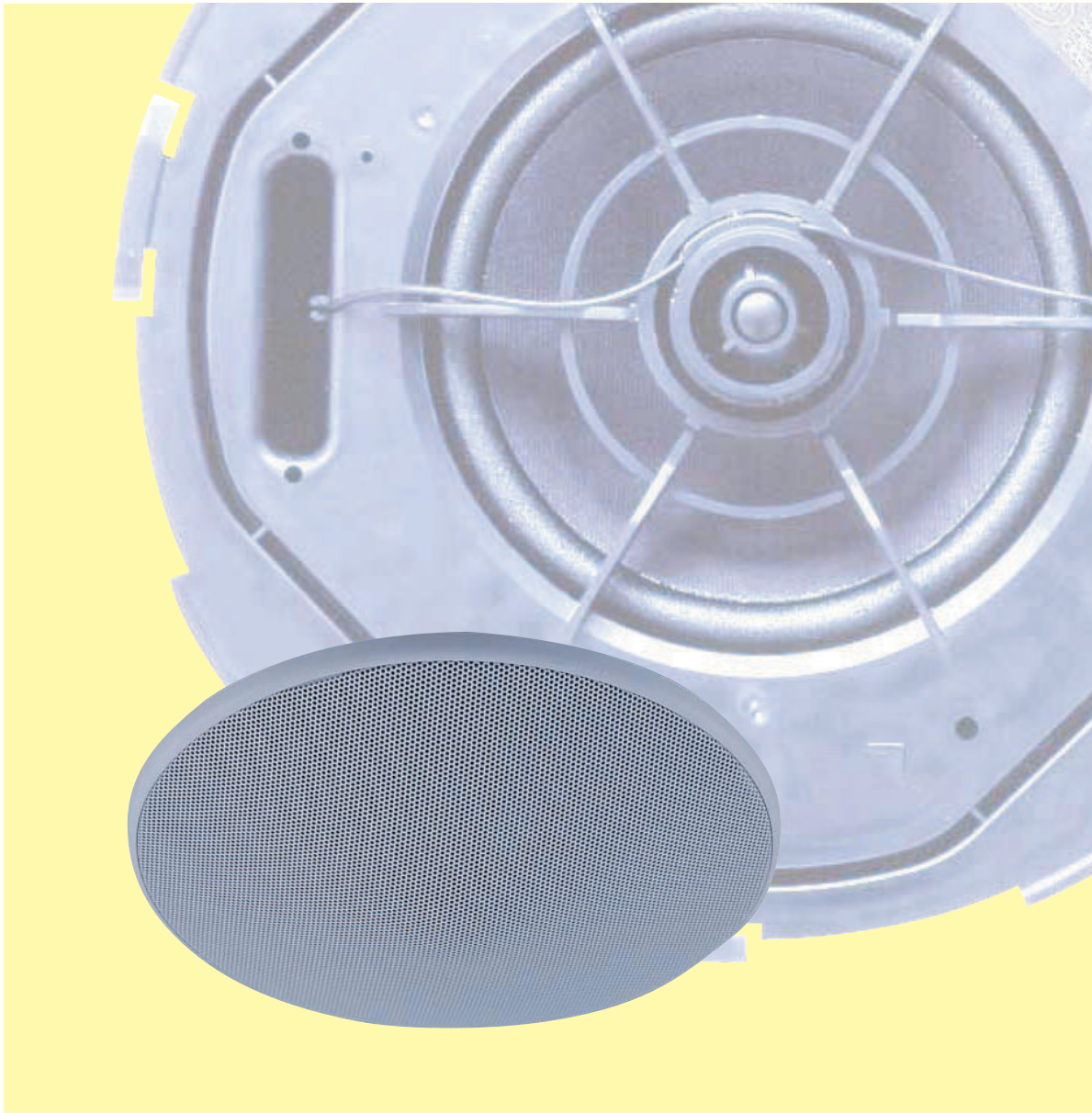




# WIDE-DISPERSION FLUSH-MOUNT CEILING SPEAKER

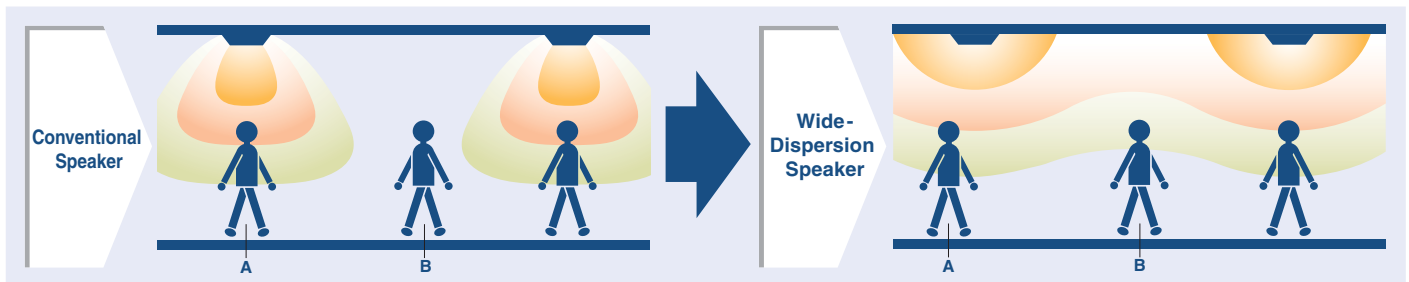


***Well-balanced sound with  
excellent wide area dispersion define a new class  
of ceiling speakers.***

# Delivering a new level of audio perfor

TOA introduces a new range of ceiling-mounted speakers that have been designed and engineered to overcome limiting factors that have been associated with conventional ceiling-mount speakers. Most noticeable has always been the high-frequency rolloff that resulted from limited speaker dispersion characteristics. TOA's new ceiling speaker range provides well-balanced audio reproduction without treble attenuation over an expanded listening area thanks to the extra-wide dispersion characteristics that are part of the overall speaker design. Perceived

speaker directionality and beaming tendencies are minimized, resulting in a natural, well-balanced sound over a wide area at all levels. Conventional speakers exhibit high frequency rolloff characteristics as the distance between speaker and listener increases. However TOA believes that an ideal ceiling-mounted speaker's response characteristics should include wide dispersion and non-frequency dependent directionality and this new ceiling speaker series proves that.

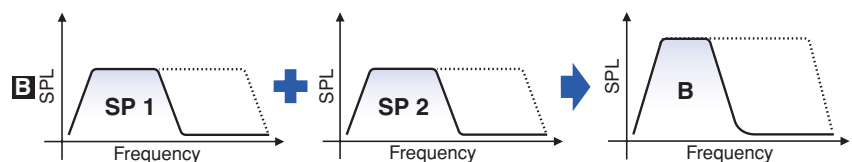
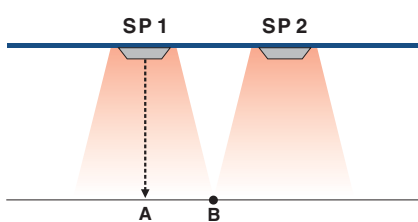


## Detailed System Features

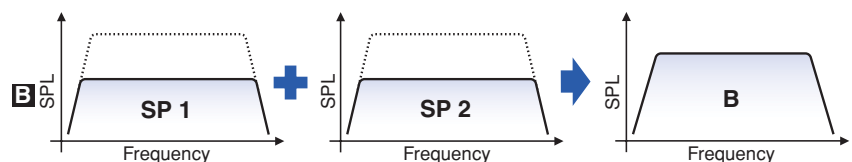
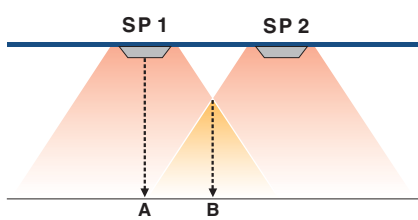
- Designed to blend into ceilings with a smooth, low-profile design.
- Extra ease of use and higher cost-effectiveness with the metal "back can" enclosure for the speaker rear. (F-122C, F-2352C, F-2852C, F-2322C models)
- Minimal high frequency rolloff allows clear and well-balanced sound reproduction over a wide listening area.
- Quick and easy installation to precisely mount speaker onto ceilings and walls. Rotating front grille also installs quickly and conveniently.

Expanded listening area coverage thanks to the extra-wide dispersion characteristics of TOA's ceiling speakers makes it possible to utilize fewer speakers to cover a desired area, allowing more cost-effective installations.

### Conventional Speaker



### Wide-Dispersion Speaker



# Performance in ceiling-mounted speakers.

## Wide-Dispersion Ceiling Speaker Series

### High Power (60W) 2-Way Wide Range



#### F-2852C (16cm cone)

Designed for higher power (60W) applications in locations having higher ceilings that are in the range of 3 to 6 meters.

- Equipped with back can meeting heat-resistant specifications.
- Equipped with a diffuser for wide dispersion of high frequencies.

### Equalizing Controlled Type

### 30W Series Full Range

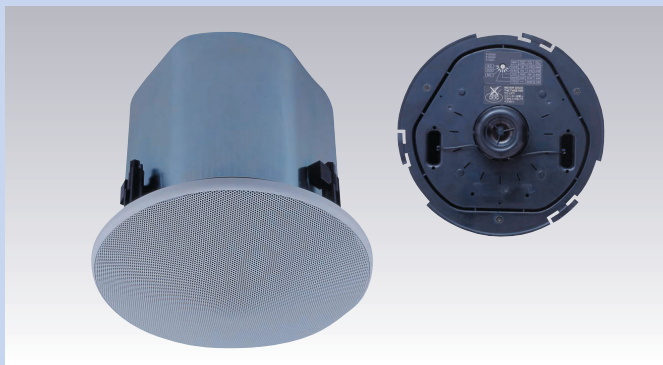


#### F-122C (12cm cone)

Optimized for use with optional digital processors to deliver the highest quality audio in ceiling-mounted speakers as well as to tailor speaker response to suit specific installation requirements. (recommended 2 to 4m)

- Equipped with back can meeting heat-resistant specifications.
- Equipped with a diffuser for wide dispersion of high frequencies.

### 30W Series 2-Way Wide Range

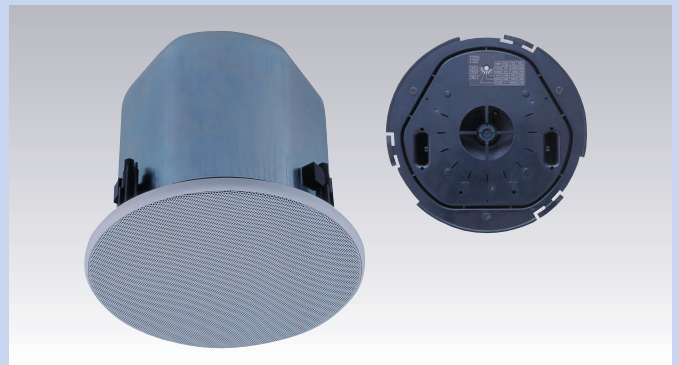


#### F-2352C (12cm cone)

Standard 2-way ceiling speaker for applications requiring a full range frequency response. (recommended 2 to 4m)

- Equipped with back can meeting heat-resistant specifications.
- Equipped with a diffuser for wide dispersion of high frequencies.

### 30W Series Full Range



#### F-2322C (12cm cone)

A cost-effective full-range speaker that is ideal for most ceiling sound requirements. (recommended 2 to 4m)

- Equipped with back can meeting heat-resistant specifications.
- Flat front panel mounts flush.

### 6W Series 2-Way Wide Range

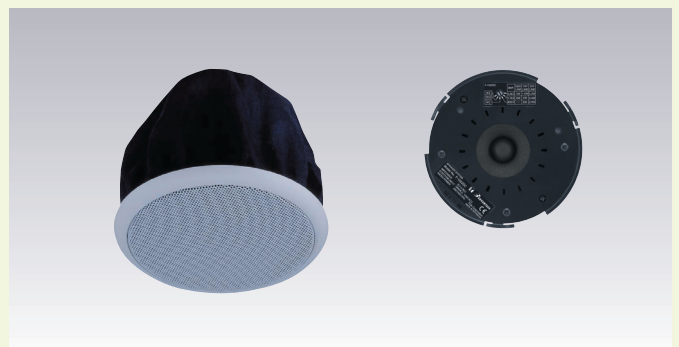


#### F-2352SC (12cm cone)

Perfect for low power use, this speaker has increased cost-effectiveness. (recommended 2 to 4m)

- Because there is no back can, it can be mounted in ceilings even having minimal depth.
- Equipped with a diffuser for wide dispersion of high frequencies.

### 6W Series Full Range



#### F-1522SC (10cm cone)

Special compact model designed for low output applications. (recommended 2 to 4m)

- Because there is no back can, it can be mounted in ceilings even having minimal depth.
- Flat front panel mounts flush.

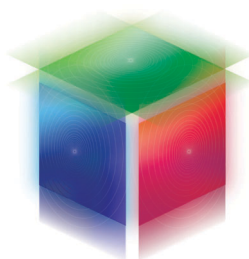
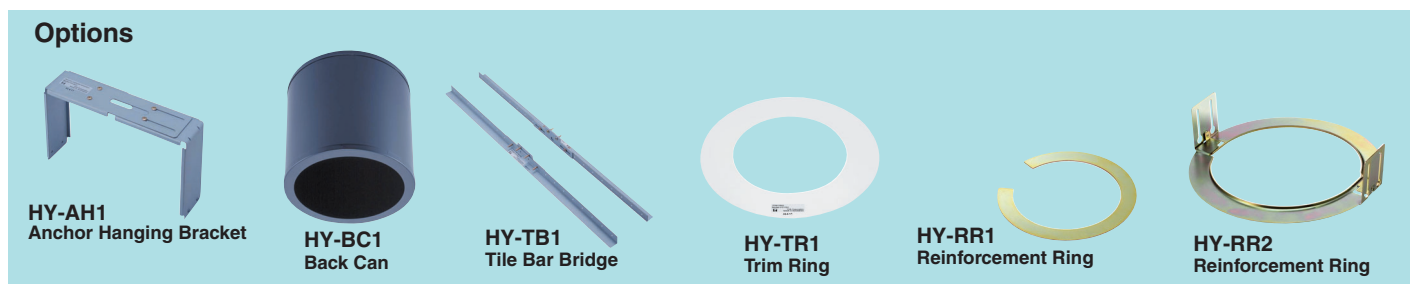
# SPECIFICATIONS

	F-2852C	F-2322C	F-2352C	F-122C	F-2352SC	F-1522SC
<b>Enclosure</b>	Bass-reflex type					
<b>Rated Input</b>	60W (high impedance)	30W (high impedance)			6W (high impedance)	
<b>Power Handling Capacity</b>	Continuous pink noise: 90W (8Ω), 60W (16Ω) Continuous program: 180W (8Ω), 120W (16Ω)	Continuous pink noise: 60W (8Ω), 30W (16Ω) Continuous program: 120W (8Ω), 60W (16Ω)			Continuous pink noise: 9W (8Ω), 6W (16Ω) Continuous program: 18W (8Ω), 12W (16Ω)	
<b>Impedance</b>	100V line	330Ω (30W), 1kΩ (10W), 3.3kΩ (3W), 10kΩ (1W)			1.7kΩ (6W), 3.3kΩ (3W) 10kΩ (1W), 20kΩ (0.5W)	1.7kΩ (6W), 3.3kΩ (3W)
	70V line	170Ω (30W), 330Ω (15W), 1kΩ (5W), 3.3kΩ (1.5W), 10kΩ (0.5W)			830Ω (6W), 1.7kΩ (3W) 3.3kΩ (1.5W), 10kΩ (0.5W) 20kΩ (0.25W)	830Ω (6W), 1.7kΩ (3W) 3.3kΩ (1.5W)
	25V line	170Ω (3.7 W), 330Ω (1.9W), 1kΩ (0.6W), 3.3kΩ (0.2W), 10kΩ (0.06W)			830Ω (0.75W), 1.7kΩ (0.4W) 3.3kΩ (0.2W), 10kΩ (0.06W) 20kΩ (0.03W)	330Ω (0.75W) 1.7kΩ (0.4W) 3.3kΩ (0.2W)
	Low (adjustable)	16Ω, 8Ω				
<b>Sensitivity (1W, 1m)</b>	91dB	90dB	90dB	90dB	89dB	88dB
<b>Frequency Response</b>	80Hz – 20kHz (–10dB), 45Hz – 20kHz (–20dB)* <sup>1</sup>	70Hz – 20kHz, 50Hz – 20kHz (–20dB) 50 – 20kHz (–10dB)* <sup>1</sup>			60Hz – 20kHz (–10dB), 50Hz – 20kHz (–20dB)* <sup>1</sup>	65Hz – 18kHz (–10dB), 4Hz – 20kHz (–20dB)* <sup>1</sup>
<b>Speaker Component</b>	High frequency:	Dome-type	Balanced dome-type	12cm cone-type	Balanced dome-type	10cm cone-type
	Low frequency :	16cm cone-type	12cm cone-type		12cm cone-type	
<b>Mounting Hole</b>	ø250mm* <sup>2</sup>	ø200mm* <sup>2</sup>				ø135mm* <sup>2</sup>
<b>Input Terminal</b>	Removable locking connector with screw-down terminals (2 input terminals and 2 bridge terminals)				Push-in connector (Bridging terminal-2 branch type)	
<b>Usable Cable</b>	Solid copper wire: ø0.5 – ø1.6mm (equivalent to AWG No. 24 – 14) Stranded copper wire: 0.2 – 2.5mm <sup>2</sup> (equivalent to AWG No. 24 – 14)				600V Vinyl-insulated cable (IV wire or HIV wire) Solid copper wire; ø0.8 – ø1.6mm (equivalent to AWG No.20 – 15) 7-core twisted copper wire: 0.75 – 1.25mm <sup>2</sup> (equivalent to AWG No.18 – 17)	
<b>Finish</b>	Enclosure:	Steel plate, plating				—
	Baffle:	Fire-resistant ABS resin (resin material grade; UL-94 V-0), black				
	Rim:	Fire-resistant ABS resin (resin material grade; UL-94 V-0), white, paint				
	Punched net:	Steel plate, white, paint				
Dust-proof bag:	—				Artificial fiber, black	
<b>Dimensions</b>	ø280 × 227 (D)mm	ø230 × 200 (D)mm	ø230 × 229 (D)mm	ø230 × 229 (D)mm	ø230 × 154 (D)mm	ø155 × 117 (D)mm
<b>Weight</b>	5.1kg (including mounting accessories)	3.7kg (including mounting accessories)	3.7kg (including mounting accessories)	3.7kg (including mounting accessories)	1.5kg (including panel)	1kg (including panel)
<b>Accessory</b>	Panel × 1, Ceiling reinforcement ring × 1, Safety wire × 1, Paper pattern × 1				Panel × 1, Paper pattern × 1	
<b>Options</b>	Anchor hanging bracket: HY-AH1, Tile bar bridge: HY-TB1	Anchor hanging bracket: HY-AH1, Back can: HY-BC1, Tile bar bridge: HY-TB1, Trim ring; HY-TR1			Back can: HY-BC1, Reinforcement ring: HY-RR2 Anchor hanging bracket: HY-AH1* <sup>3</sup> , Tile bar bridge: HY-TB1* <sup>3</sup> , Trim ring; HY-TR1* <sup>3</sup>	Reinforcement ring: HY-RR1

\*<sup>1</sup> At installation in 1/2 free sound field (measured by installing the unit in the center of a ceiling)

\*<sup>2</sup> Maximum ceiling thickness: 37 mm

\*<sup>3</sup> HY-RR2 required



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Sound & Communication

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Specifications are subject to change without notice.  
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