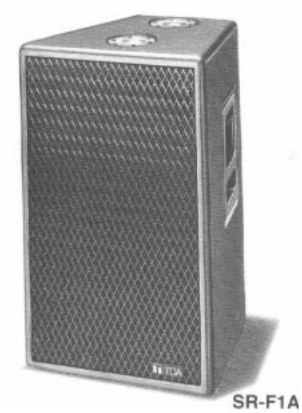
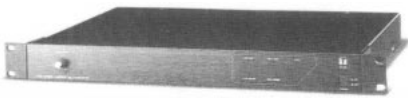
TOA PROFESSIONAL SOUND SYSTEM

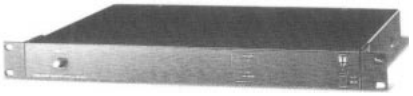
ELECTRONICALLY CONTROLLED SPEAKER SYSTEM

SR-F1A Speaker System
SR-L1A Sub Woofer System
AC-F1/AC-L1 Electronic Control Units


SR-F1A


SR-L1A


AC-F1


AC-L1

DESCRIPTION

The TOA SR Loudspeakers are compact integrated speaker systems made for quality sound reproduction and easy transportation. Both SR-F1A and SR-L1A are used with AC-F1/AC-L1 Electronic control units, and work together to cover the low/high and super-low frequency range. The AC-F1 and AC-L1 provide a frequency divider, equalization, correction for component time offset, phase correction, an active clipping limiter, and a crossover select switch for SR-F1A ceiling mounting.

The SR-F1A uses the high-power HFD-651 driver and an LE Series constant directivity horn. Its trapezoidal cabinet allows arrays to simulate a coherent wavefront single point source, and its angle of 15° on both sides reduces mutual high-frequency interference in tightly clustered designs.

The SR-L1A has computer-tuned bass-reflex ports, and two 38cm (15") woofers with a 72mm (2.8") diameter voice coil. Two metal suspension points are on both the top and bottom, and the rugged APITON plywood enclosure is finished with shock-resistant FRP (fiber-reinforced plastic). Neutrik NL4MPR quick connectors are used for both the SR speakers,

FEATURES

SR-F1A Speaker System

1. Full-range speaker with control by AC-F1 Electronic Control Unit.
2. High power capacity of 120W continuous pink noise for low frequency and 80W for high frequency.
3. 30cm (12") woofer with 20cm (7.9") magnet.
4. HFD-651 high power compression driver with LE Series constant directivity (CD) horn (60° horizontal by 40° vertical dispersion).
5. Aeroquip aircraft-type hanging fixture attachment points provided on enclosure top and bottom.
6. Enclosure side angle is 15° on both sides to prevents mutual horn high-frequency interference.
7. Neutrik NL4MPR input connector.
8. APITON plywood enclosure with rugged FRP coating.
9. Removable punched metal front grille.

SR-L1A Sub Woofer System

1. Sub-woofer with control by AC-L1 Electronic Control Unit.
2. High power capacity of 300W continuous pink noise.
3. Ultra-linear, high power 38cm (15") woofers.
4. Bass-reflex enclosure computer-tuned to optimal conditions.
5. Neutrik NL4MPR input connector.
6. APITON plywood enclosure with rugged FRP coating.
7. Removable punched metal front grille.

TOA

SPECIFICATIONS

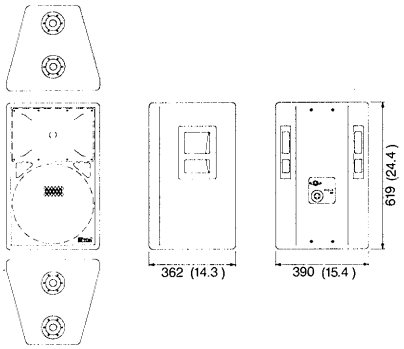
Model No.	SR-F1A
Enclosure	Bass Reflex Type
Speaker	
Low Frequency	One 30cm (12") dia. cone speaker
High Frequency	CD horn (60° horizontal by 40° vertical) plus compression driver
Nominal impedance	Low frequency: 8 ohms, High frequency: 16 ohms
Sensitivity	Low frequency: 98dB (1W/1m), High frequency: 110dB (1W/1m)
Frequency Response	70-20kHz, with AC-F1's use
Crossover Frequency	1kHz with AC-F1's use
Power Handling Capacity	
Low Frequency	Continuous pink noise: 120W RMS (Band-limited 50Hz-1kHz), Continuous program: 360W
High Frequency	Continuous pink noise: 8OW RMS (Band-limited 1kHz-20kHz), Continuous program: 240W
Input Connector	Neutrik NL 4MPR
Enclosure Material	APITON plywood
Weight	38kg (83.8lbs.)
Dimensions	390(W) x 619(H) x 362(D)mm [15.4(W) x 24.4(H) x14.3(D) inches]
Finish	Enclosure: FRP coating in gray, Front grille: Black-painted

SPECIFICATIONS

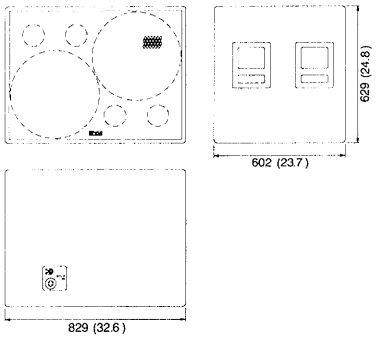
Model No.	SR-L1A
Enclosure	Bass Reflex Type
Speaker	Two 38cm (15") dia. cone speakers
Nominal Impedance	8 ohms x 2
Sensitivity	96dB (1W/1m)
Frequency Response	35Hz-1kHz
Crossover Frequency	125kHz with AC-L1's use
Power Handling Capacity	Continuous pink noise: 300W RMS (Band-limited 40Hz-1kHz), Continuous program: 900W
Input Connector	Neutrik NL 4MPR
Enclosure Material	APITON plywood
Weight	81 kg (178.6lbs.)
Dimensions	829(W) x 629(H) x 602(D)mm [32.6(W) x 24.8(H) x 23.7(D) inches]
Finish	Enclosure: FRP coating in gray, Front grille: Black-painted

DIMENSIONAL DIAGRAM

SR-F1A



SR-L1A



mm (in.)

INPUT CONNECTOR

Input connector is the Neutrik NL4MPR.
Each contact number is connected as per the following table:

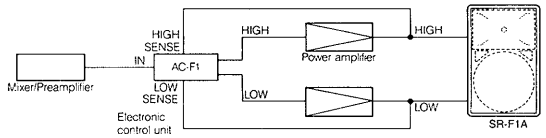
Contact number	SR-F1A	SR-L1A
1 +	LOW +	* LEFT +
1 –	LOW –	LEFT –
2 +	HIGH +	RIGHT +
2 –	HIGH –	RIGHT –

*Woofer direction viewed from the front.

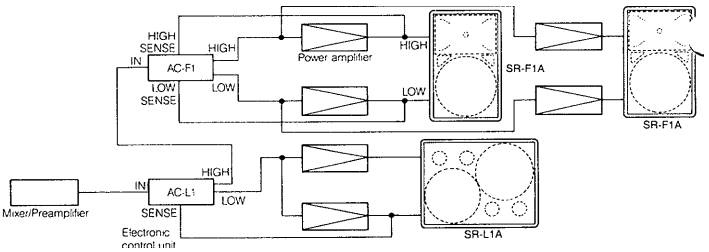
Applicable cable connector is NL4FC.

CONNECTION DIAGRAMS

1. Single system(SR-F1A)



2. Combination system (SR-F1A and SR-L1A)



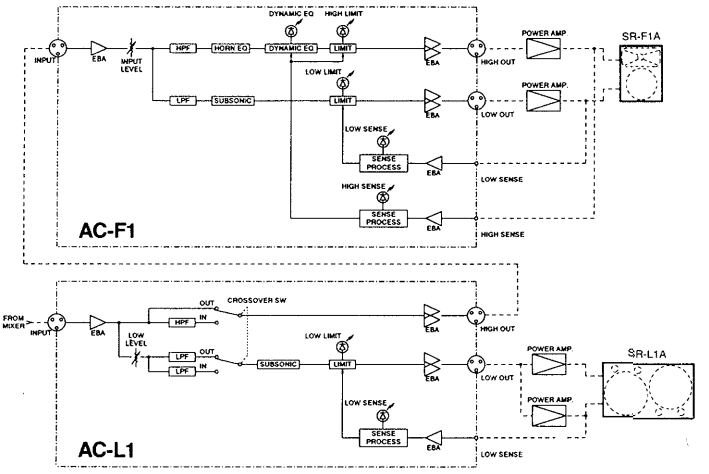
Note:

Refer to "Electronic control unit's operating instructions" on the mode settting of the electronic control unit and the level setting of power amplifier

Sale to use power amplifier 300W (8 ohms) or more output

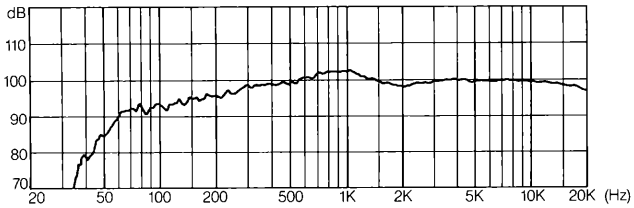
Do not connect two speakers or more in parallel, or BTL connection of power amplifier

BLOCK DIAGRAM



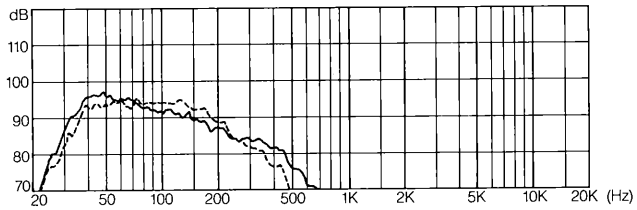
CHARACTERISTIC DIAGRAMS (1/3 Octave Pink Noise)

Frequency Response (1W/1m, at 300Hz)
- SR-F1A (with AC-F1 electronic control unit's use)

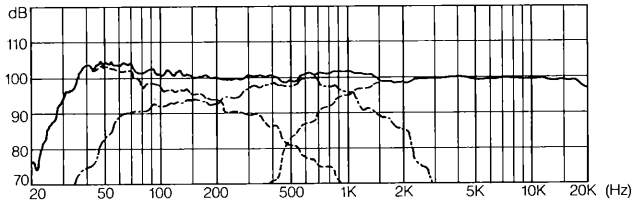


Frequency Response (1W/1m, at 100Hz of crossover IN)
- SR-L1A (with AC-L1 electronic control unit's use)

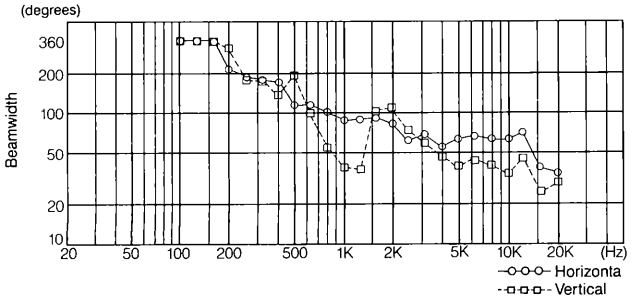
AC-L1 mode —— : Crossover OUT
---- : Crossover IN



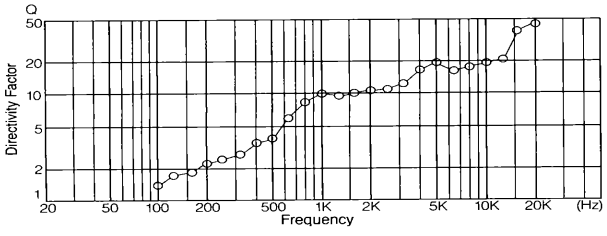
General Frequency Response (1W/1m at 300Hz of the SR-F1A)
- SR-L1A + AC-L1, SR-F1A + AC-F1, AC-L1: Crossover OUT



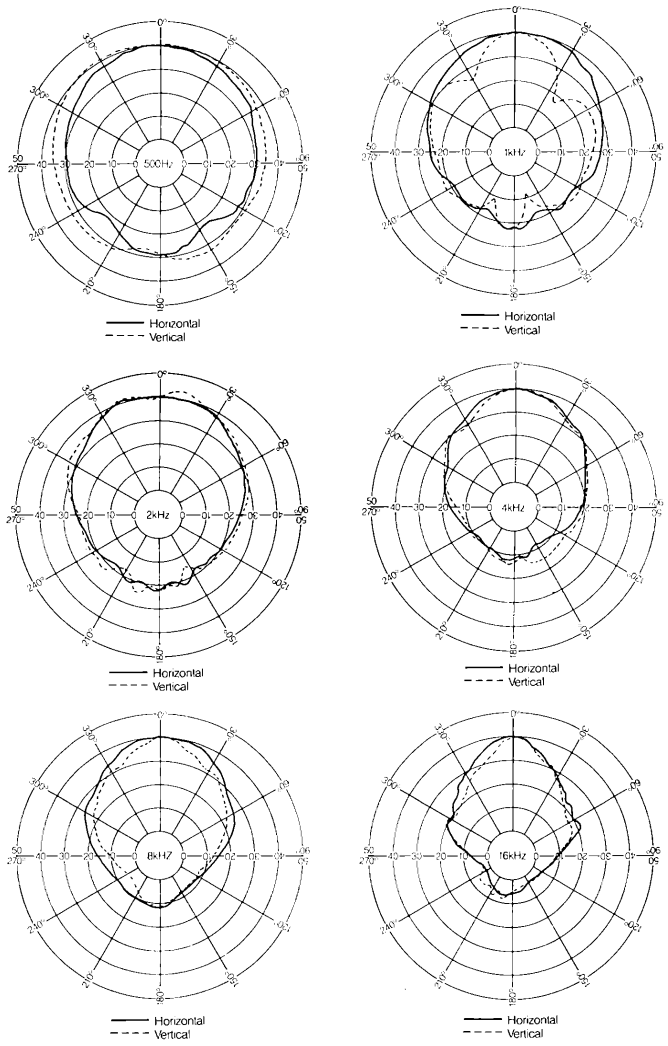
Beamwidth vs. Frequency
- SR-F1A



Directivity Factor vs. Frequency
- SR-F1A



Polar Response (1W/4m: 1/3 Octave Pink Noise)
- SR-F1A



Architects and Engineers Specifications

The two way high/low speaker system shall be a TOA SR-F1A, and the sub-woofer system shall be a TOA SR-L1A, or approved equivalents. The system shall be vented bass-reflex enclosures intended for portable system applications, made of APITON plywood with FRP (fiber reinforced plastic) finish and a punched metal front grille. Input connections shall be via a Neutrik NL4MPR connector.

The SR-F1A shall combine a low-frequency 30cm (12") diameter/98dB sensitivity cone speaker and a compression-driver equipped high-frequency CD horn with 60° horizontal by 40° vertical dispersion and 110dB sensitivity. Its power handling capacity shall be 120W RMS continuous pink noise, band-limited to 50Hz-1kHz (low frequency), and 80W RMS continuous pink noise, band-limited to 1 kHz-20kHz (high frequency). The speaker shall weigh 38kg (83.8lbs.) and have dimensions of 390(W) x 619(H) x 362(D)mm [15.4"x 24.4"x 14.3"].

The sub-woofer system SR-L1A system shall have two 38cm (15") diameter cone speakers and 96dB sensitivity. Frequency response shall be 35Hz-1kHz. Its power handling capacity shall be 300W RMS continuous pink noise, band-limited to 40Hz-1kHz. The speaker system shall weigh 81 kg (176.8lbs.), and have dimensions of 829(W) x 629(H) x 602(D)mm [32.6"x 24.8"x 23.7"].

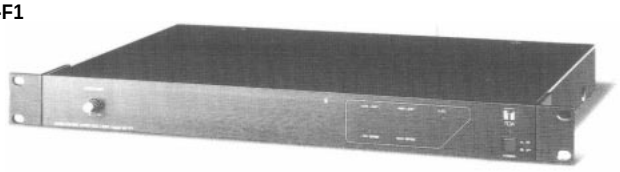
The electronic control unit for the SR-F1A and SR-L1A shall be the AC-F1 and AC-L1 respectively. When the AC-F1 is used, the frequency response of the SR-F1A shall be 70Hz-20kHz, with a crossover frequency of 1kHz. The AC-L1 shall provide the 125Hz crossover frequency for the SR-L1A. Both electronic control units shall provide a crossover network with horn equalization, component time offset correction, phase correction, an active clipping limiter, and a crossover switch used when the SR-F1A is ceiling-mounted.

AC-F1/AC-L1 Electronic Control Units

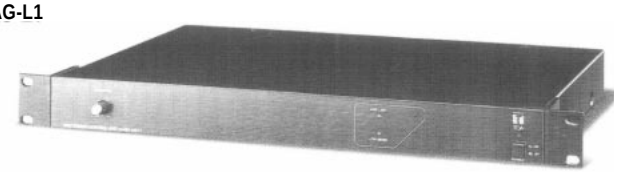
FEATURES

1. Individual limiters that prevent speaker damage due to overdriving or power amplifier clipping.
2. Dynamic equalization reduces the gain of the most ear-sensitive frequencies (3kHz-4kHz) when the sound pressure level is extremely high, for a smoother dynamic sound.
3. Time offset correction.
4. Crossover network at 1kHz.
5. Phase correction throughout crossover region.
6. Horn equalizer compensates for constant directivity horn characteristics.
7. Crossover curve selection switch for speaker ceiling suspension (AC-L1).
8. For exclusive use with SR-F1A (AC-F1) and SR-L1A (AC-L1)
9. Each unit occupies one standard EIA 19" rack space.
10. Electronically-balanced input and output employing XLR connectors. (No. 3: HOT)

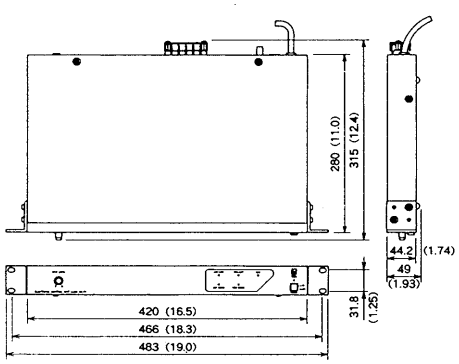
AC-F1



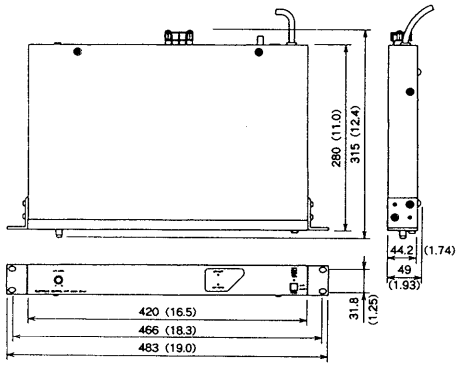
AG-L1



DIMENSIONAL DIAGRAMS



DIMENSIONAL DIAGRAMS



mm

SPECIFICATIONS

Model No.	AC-F1
Input	Electronically balanced (Cannon XLR-3-31 or equivalent)
Input Impedance	20k ohms (Balanced), 10k ohms (Unbalanced)
Rated input Level	+ 4dB* (Pin No.3: HOT, No.2: COLD and No.1: GND)
Max. Input Level	+ 26dB*
Sense Input	Electronically balanced (4P screw terminal)
Sense Input Impedance	10k ohms
output	Electronically balanced (Cannon XLR-3-32 or equivalent)
Output Impedance	600 ohms (Balanced)
Rated Output Level	+ 4dB*
Max. Output Level	+ 26dB* (Balanced), + 20dB* (Unbalanced)
Crossover Frequency	1kHz
Distortion	Less than 0.05% (+ 4dB* 1 kHz)
Hum & Noise	Less than - 90dB* (20Hz ~ 20kHz)
indicators	-Power green LED -Sense input. green LED (LOW SENSE, HIGH SENSE) -Limit: red LED (LOW LIMIT, HIGH LIMIT) -Dynamic Equalizer green LED (D.EQ)
Front Panel Operation	Input Level control, Power switch
Power Requirement	AC Mains, 50Hz/60Hz
Power Consumption	12W 120V version. 16W 220V--240V version
Weight	3.7kg (8.16lbs.)

SPECIFICATIONS

Model No.	AC-L1
Input	Electronically balanced (Cannon XLR-3-31 or equivalent)
Input Impedance	20k ohms (Balanced), 10k ohms (Unbalanced)
Rated Input Level	+ 4dB* (Pin No.3: HOT No.2: COLD and No.1: GND)
Max. Input Level	+ 26dB*
Sense Input	Electronically balanced (2P screw terminal)
Sense Input Impedance	10k ohms
output	Electronically balanced (Cannon XLR-3-32 or equivalent)
Output Impedance	600 ohms (Balanced)
Rated Output Level	+ 4dB*
Max. Output Level	+ 26dB* (Balanced), + 20dB* (Unbalanced)
Crossover Frequency	125Hz
Distortion	Less than 0.05% (+ 4dB* 1kHz)
Hum & Noise	Less than - 90dB* (20Hz ~ 2OkHz)
Indicators	-Power. green LED -Sense input: green LED (LOW SENSE) -Limit: red LED (LOW LIMIT)
Front Panel Operation	Low level control, Power switch
Rear Panel Operation	Crossover select switch
Power Requirement	AC Mains. 50Hz/60Hz
Power Consumption	10W 120V version, 12W 220V-240V version
Weight	3.7kg (8.16lbs.)

*OdB=0.775Vrms

TOA

TOA Corporation

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