

UL1480 HyperSpike LineWave Loudspeaker

HyperSpike® Series

Overview

Designed with the latest technology in line array speaker systems, the EDWARDS HyperSpike® LineWave loudspeaker is optimized to produce clear and authoritative voice commands and powerful tones never before possible within reverberant environments. The beam forming capability of the LineWave loudspeaker allows even coverage across the listening plane while focusing the acoustic pattern away from surfaces that cause unwanted reflections. This technology is essential for achieving optimum levels of speech intelligibility within reverberant spaces. The result is clear and intelligible direct sound that ensures critical messages are heard and understood.

While line arrays have been around 1877, this is the first availability of line wave speakers to Life Safety and Emergency Communication applications.

- The standard output drop for a speaker is 6 dB for every distance doubling. With line wave, the drop will be less and can approach 3 dB for every distance doubling with the larger units in normal ceiling heights like most rooms and hallways. This provides a much more consistent acoustic level throughout the acoustically defined space.

- An added benefit of the first point is that line source requires lower output power to achieve the same dB level at typical target audience distances and throughout the coverage area.

- In vertical orientation, there is less output to the top and bottom which will improve intelligibility due to limited reflections from the floor and ceiling.

- Multiple drivers allow for less driver displacement over single drivers to achieve the same acoustic output. This reduces the distortion from the drivers and prevents the "overdriven" sound that some loudspeakers produce at maximum output.

Standard Features

- Industry Leading Voice Intelligibility for Reverberant Spaces
- 123dB Max SPL @ 1 Meter
- Rated for Indoor or Outdoor Applications
- Universal Mounting Interface
- 25V, 70V, & 100V or 4/8/16Ω Configurable
- Durable Environmental Resistant Construction
- Available in Black, Red, White, Gray
- STI: Excellent Intelligibility Up To 0.93 STI
- SJOOW service cable provided (see description on page 4)
- Agency listings UL1480, ULC-S541 and CSFM
- UL 1480 listing requires the supervised use of the appropriate constant voltage transformer. The direct drive application of the LineWave loudspeakers cannot be supervised and will not meet the UL1480 requirements.

Sound Output Ratings

Note: Edwards equipment only supports 25 and 70V. ¹

Note: Only 25, 70 or 100 V are UL 1480 listed for fire

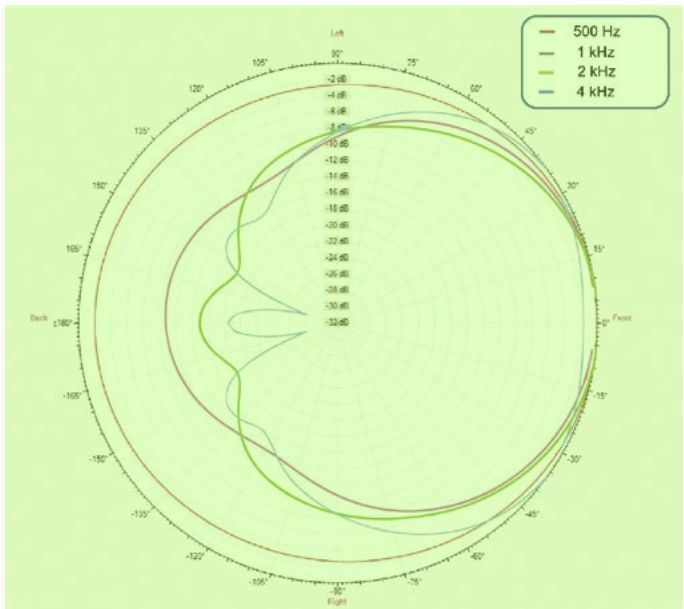
Model	Input Voltage (V)	Tap Color	Power Draw (W)	SPL (Max @ 1m)	*dB SPL Reverb (@ 10ft)	*dB SPL Anechoic (@ 3m)
LineWave: 90243A-801-L Transformer: 72575B-801-L	25	Blue	0.5	86	72.4	78.2
	25	Orange	1.3	91	77.1	82.2
	25	Red	1.6	92	78.2	83.8
	25	Brown	2.7	94	79.9	85.3
	70	Blue	3.0	95	80.8	86.3
	70	Orange	8.3	100	84.9	90.7
	70	Red	10.7	101	85.9	91.9
	70	Brown	15.3	103	87.2	92.7
	100	Blue	5.7	98	83.5	89.1
	100	Orange	15.3	103	87.1	92.9
	100	Red	19.5	104	88.0	93.8
LineWave: 90243A-802-L Transformer: 72575B-801-L	25	Blue	0.8	92	75.8	81.9
	25	Orange	2.2	97	80.5	86.6
	25	Red	2.8	98	81.6	87.8
	25	Brown	4.1	100	83.2	89.4
	70	Blue	5.3	101	84.4	91.2
	70	Orange	14.9	106	88.6	94.6
	70	Red	19.3	107	89.5	95.6
	70	Brown	27.4	109	90.7	96.9
	100	Blue	10.3	104	87.1	92.9
	100	Orange	27.8	109	90.9	96.9
LineWave: 90243A-803-L Transformer: 72542B-801-L	25	Blue	1.7	101	79.9	87.8
	25	White	3.3	103	82.9	91.0
	25	Orange	6.6	105	85.9	94.3
	25	Yellow	12.7	108	88.5	96.6
	70	Blue	12.4	110	88.5	96.6
	70	White	23.9	112	91.2	99.5
	70	Orange	46.2	114	93.8	102.0
	70	Yellow	81.6	117	95.8	104.0
	100	Blue	23.8	113	91.2	99.0
	100	White	44.6	115	93.6	101.0
	100	Orange	83.3	117	96.0	104.0
LineWave: 90243A-804-L Transformer: 72542B-802-L	25	Blue	3.2	106	83.3	92.1
	25	White	6.3	109	86.3	95.1
	25	Orange	12.9	111	89.3	97.4
	25	Yellow	24.3	114	91.7	100.0
	70	Blue	24.3	115	91.8	101.0
	70	White	46.6	118	94.4	103.0
	70	Orange	90.6	120	96.8	105.0
	70	Yellow	159.3	123	98.4	106.0
	100	Blue	47.8	118	94.5	103.0
	100	White	89.1	121	96.8	105.0
	100	Orange	165.8	123	98.7	107.0

*UL Standard SPL Measurement ³

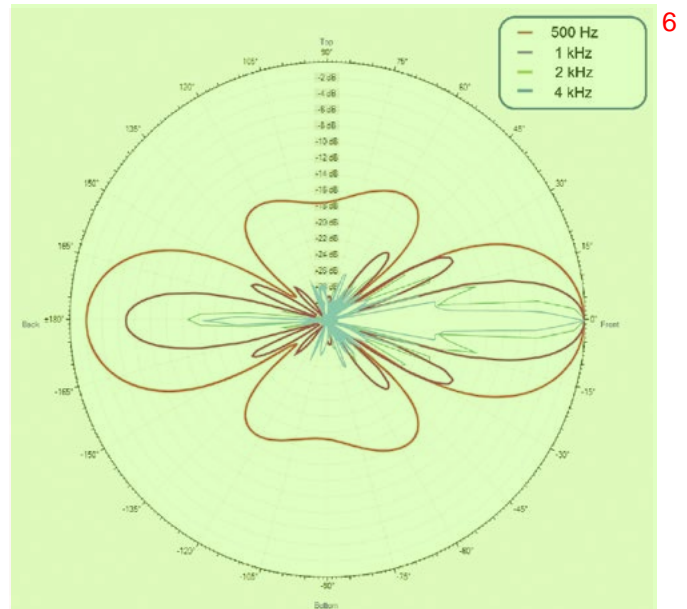
Sound Dispersion Patterns 1

Polar Plots and Beam Width 2

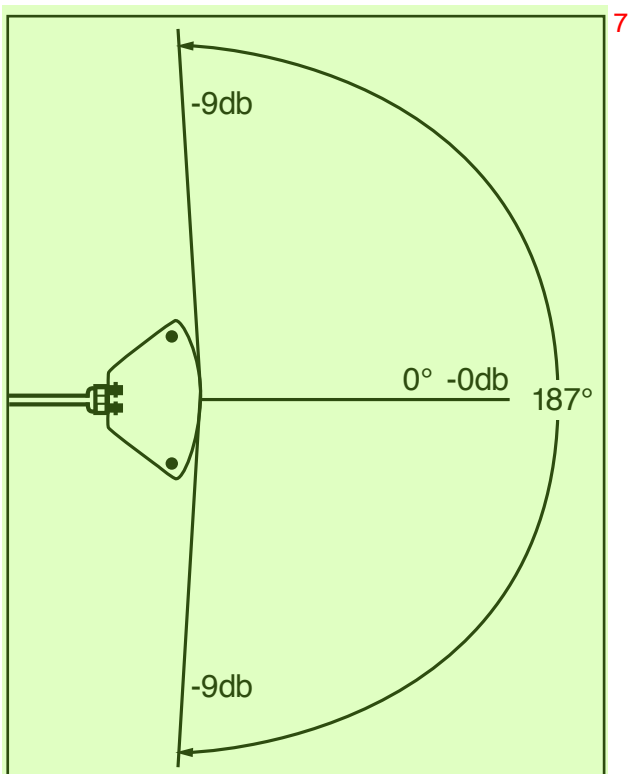
90243A-804 Horizontal Polars 4



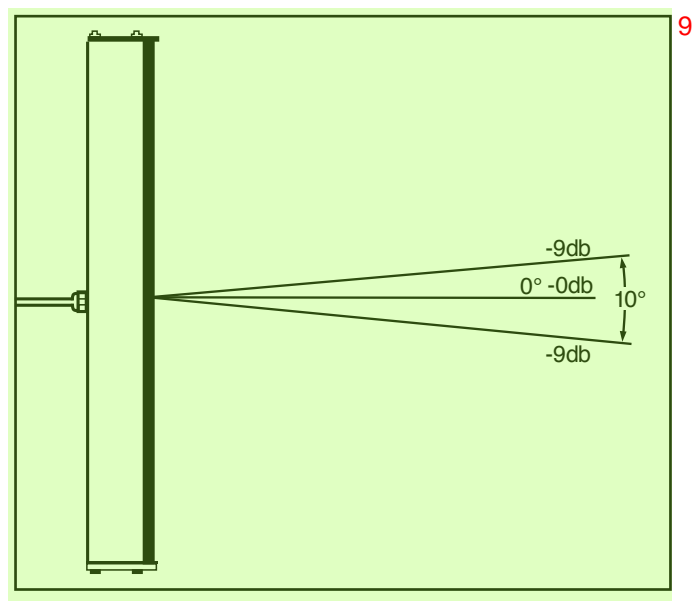
90243A-804 Vertical Polars 5



90243A-804 Horizontal Beam Width 8

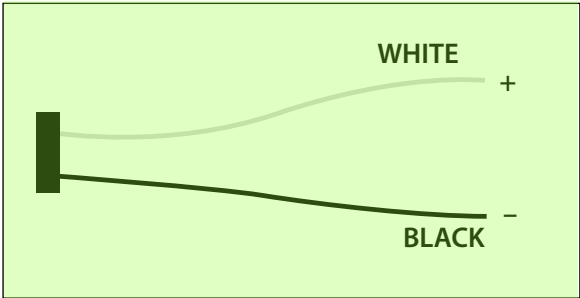


90243A-804 Vertical Beam Width 10



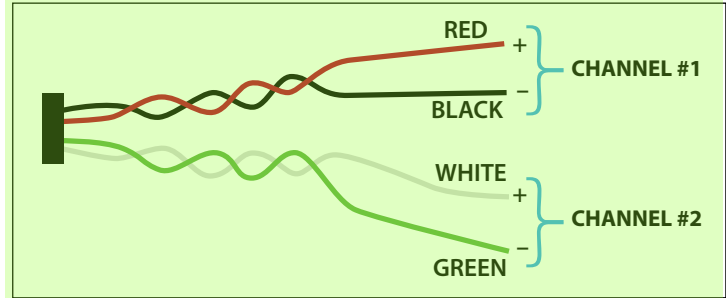
Wiring Reference 1

90243A-801-L, 90243A-802-L and 90243A-803-L 3



LineWave models 90243A-801-L, 90243-802-L, and 90243A-803-L (16Ω, 8Ω, and 4Ω respectively) provide a six foot SJOOW-18/2 cable for amplifier interconnection. 4

90243A-804-L 6



LineWave model 90243A-804-L provides a six foot SJOOW-18/4 cable wired as two 4Ω channels for amplifier interconnection 7

SJOOW stands for: 8

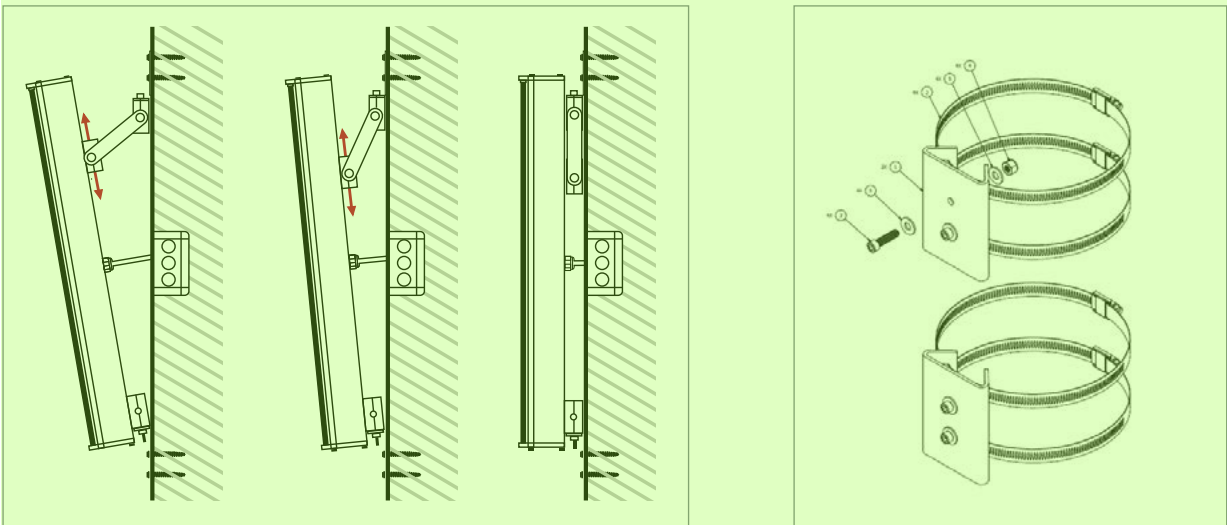
SJ = hard service cable rated for 300V 9
OO = Oil Resistant both inside insulation and outside jacket.
W = CSA designation for weather/water resistance.

18/4 or 18/2 is the wire gauge and number of conductors. 10

SJOOW cable is a thermoset cable, it entails a very heavy-duty rubber jacket around the copper wires inside. Thermoset means that it does not get soft or melt at high temperatures. 11

Mounting Reference 12

All LineWave models include hardware to facilitate Wall Mounting. If it is desired to mount a LineWave to a pole, HyperSpike Pole Mount 72581B-801 is available. All mounts allow for Pan and Tilt angle adjustment after installation. 13



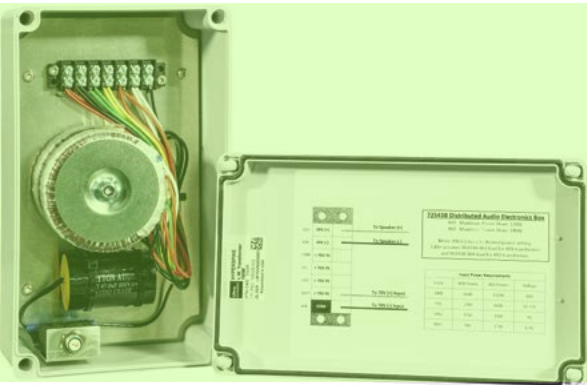
Specifications 1

Architect and Engineer Specifications: 2

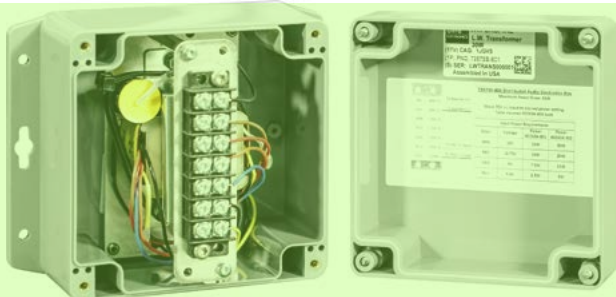
Voice paging and tone signaling loudspeaker shall be EDWARDS Part Numbers _____. 3
Unit shall be UL 1480 Listed, weather resistant and constructed of powder coated aluminum and steel.
The loudspeaker shall be able to operate within any ambient temperature environment ranging from -20°C to 60°C (-4°F to 140°F). The speaker shall have a sensitivity of _____ when measured at 1m (AVG 250-15,000Hz), and a horizontal beam width of 187° (AVG 1kHz to 4kHz). The transducer coils shall have a nominal 8 ohm impedance. When applicable, a minimum of four transformer power settings shall be selectable for each speaker, and it shall operate on 25V, 70V, or 100V distributed audio systems. Transformers shall contain an in-line capacitor to allow DC supervision of wiring. Frequency response shall be 250Hz-15kHz. Dimensions shall be _____"H x 4.9"W x 2.9"D (____cm x 12.47cm x 7.37cm).

Transformer Specifications 4

System	72575B-801-L	72542B-801-L	72542B-802-L
Type	Optional Transformer		
Operation Mode	25 / 70 /100 Watt Tap Settings		
Line Wave Compatibility	90243A-801-L 90243A-802-L	90243A-803-L	90243A-804-L
Maximum Power Draw	30W	85W	170W
Maximum Supervisory Voltage:	32V DC		
Enclosure Material	Plastic		
Ingress Protection	Indoor/Outdoor		
Product Dimensions HxWxD (in)	5.9 x 5.9 x 3.9 (15.0cm x 15.0cm x 10cm)	9.8 x 5.9 x 3.9 (24.9cm x 15.0cm x 10cm)	9.8 x 5.9 x 3.9 (24.9cm x 15.0cm x 10cm)
Net Weight	3lbs (1.36kg)	4.5lbs (2.04kg)	6.5lbs (2.95kg)



72542B-801-L 7
72542B-802-L



72575B-801-L 9

Technical Specifications

System	90243A-801-L	90243A-802-L	90243A-803-L	90243A-804-L
Type	Full Range, Column Loudspeaker			
Operation Mode	16/8/4Ω Loudspeaker with Optional Line Matching Transformer			
Number of Speakers in Array	2	4	8	16
Maximum Power Draw: 16Ω, 8Ω, and 4Ω Models	20W	40W	80W	160W
Max SPL @ 1m, 18V Direct Drive	105dB	111dB	117dB	123dB
Peak SPL @ 1m	113dB	119dB	125dB	131dB
Usable Range @ 80dB, A-Weighted	17m (56ft)	35m (115ft)	70m (230ft)	141m (463ft)
*Reverb SPL @ 10 ft, 18V Direct Drive	87.8	91.7	94.3	95.7
*Anechoic SPL @ 3m, 18V Direct Drive	93.4	98.0	103.0	104.0
Input Sensitivity (2.83Vrms/1m)	85dB	91dB	97dB	103dB
Nominal Impedance	16Ω	8Ω	4Ω	4Ω, 2 Channel
Vertical Coverage -9dB (Avg. 1kHz-4kHz)	99°	45°	21°	10°
Frequency Response (+/- 6dB)	250Hz-15kHz			
Required Input Signal Processing	High Pass at 200Hz – Direct Drive Models Only			
Horizontal Coverage -9dB (Avg. 1kHz-4kHz)	187°			
Maximum Input Voltage: 16Ω, 8Ω, and 4Ω Models	18V RMS, 36V Peak			
Color	Black, Red, White, Silk Grey			
Enclosure Material	Aluminum			
Grille Material	Steel			
Input Connection	SJOOW Cable, 6ft. Provided			
Ingress Protection	Indoor and Outdoor Applications			
Product Dimensions, HxWxD (in)	6.6 x 4.9 x 2.9 (16.76cm x 12.47cm x 7.37cm)	12.3 x 4.9 x 2.9 (31.24cm x 12.47cm x 7.37cm)	23.7 x 4.9 x 2.9 (60.20cm x 12.47cm x 7.37cm)	46.5 x 4.9 x 2.9 (118.11cm x 12.47cm x 7.37cm)
Net Weight (lbs)	2.6 (1.18kg)	4.3 (1.95kg)	7.5 (3.4 kg)	14.7 (6.67kg)
Operating Temperature Range	-20°C - 60°C (-4°F - 140°F)			
Agency Listings	UL1480, ULC-S541 and CSFM			

*UL Standard SPL Measurement

Ordering Information

Part Number	Description
UL Listed Distributed Audio Speakers	
90243A-801-01-L	HyperSpike UL LineWave line array loudspeaker 2 Black
90243A-802-01-L	HyperSpike UL LineWave line array loudspeaker 4 Black
90243A-803-01-L	HyperSpike UL LineWave line array loudspeaker 8 Black
90243A-804-01-L	HyperSpike UL LineWave line array loudspeaker 16 Black
90243A-801-05-L	HyperSpike UL LineWave line array loudspeaker 2 Red
90243A-802-05-L	HyperSpike UL LineWave line array loudspeaker 4 Red
90243A-803-05-L	HyperSpike UL LineWave line array loudspeaker 8 Red
90243A-804-05-L	HyperSpike UL LineWave line array loudspeaker 16 Red
90243A-801-06-L	HyperSpike UL LineWave line array loudspeaker 2 White
90243A-802-06-L	HyperSpike UL LineWave line array loudspeaker 4 White
90243A-803-06-L	HyperSpike UL LineWave line array loudspeaker 8 White
90243A-804-06-L	HyperSpike UL LineWave line array loudspeaker 16 White
90243A-801-07-L	HyperSpike UL LineWave line array loudspeaker 2 Gray
90243A-802-07-L	HyperSpike UL LineWave line array loudspeaker 4 Gray
90243A-803-07-L	HyperSpike UL LineWave line array loudspeaker 8 Gray
90243A-804-07-L	HyperSpike UL LineWave line array loudspeaker 16 Gray
72575B-801-L	UL LineWave 25V/70V/100V Transformer 2/4 speaker
72542B-801-L	UL LineWave 25V/70V/100V Transformer 8 speaker
72542B-802-L	UL LineWave 25V/70V/100V Transformer 16 speaker
Mounting Hardware	
72581B-801	LineWave line array speaker pole mount kit
90243A-401	LineWave Speaker Demo Kit. The kit comes with TWO (2) 8X LineWave speakers that fold up to make a 16X unit, ONE (1) 4X and ONE (1) 2X unit. It also comes with the necessary cables to connect the speaker to the amplifier, charging cable for the amplifier and adapter kit to mount the speaker onto a tripod (tripod NOT included). The amplifier is a battery powered unit that is very mobile and compact.