



Front view of assembly grille (WB8)



Assembly Model WB8-8A50-T870



**ULXCP87 backbox**  
(required - order separately)

## Quality Features

- UL Listed - Standard 1480 - General Signaling speaker/transformer/grille for use with backbox Model ULXCP87.
- Assembly includes 50W driver Model 8A50 with 70V transformer Model TLM870 mounted to grille Model WB8.
- Driver handles 50W input with 90dB avg. sensitivity.
- Premium assembly exhibits smooth musical performance with excellent power handling and low distortion for an enjoyable listener experience in large/mid size venues.

## Description

Lowell's speaker/grille/transformer Model WB8-8A50-T870 is listed under UL Standard 1480 - General Signaling. This UL Listed Model features Lowell's premium coaxial 8-inch driver Model 8A50 with high performance TLM870 transformer mounted to the popular WB8 white ceiling grille. The assembly is UL Listed for use with backbox Model ULXCP87 (required-order separately).

Model WB8-8A50-T870 is engineered for 70V distributed applications that demand very high quality music and paging reproduction in large/mid-size venues. Model 8A50 will provide excellent sound quality in up-scale restaurants, lounges, hotel lobbies, department stores, and boutiques where a positive consumer listening experience is key to customer satisfaction.

Driver Model 8A50 is a coaxial 50W 8-inch assembly that provides improved power handling, lower distortion, and smoother more musical sound than most commercial coaxial drivers. It features a large, 20oz magnet coupled with a 1.4-inch copper voice coil driving a polypropylene cone with half-roll rubber surround for long cone travel and good edge

damping. The post-mounted tweeter is a 1-inch balanced drive dome protected by Ferrofluid and a first order high pass filter. Frequency response is 40Hz-20kHz±6dB with a crossover at 4 kHz. Additionally, the loudspeaker's capacity to deliver a wide angle of sound distribution (110 degrees) over a large area with uniform response and voice clarity ensures complete coverage with minimum units. The loudspeaker frame is stamped 20-gauge steel with a black enamel finish and zinc plated backplate.

The transformer is Model TLM870 with primary taps at 8, 4, 2, 1 watt and frequency response of 50Hz - 15kHz ±1dB. It is securely mounted to the top of the driver.

The driver/transformer is mounted to grille Model WB8 which is an attractive one-piece perforated steel grille finished in durable white powder epoxy paint. The grille is 12.875" Dia and mounts to the backbox using four 8-32 x 1.5" white Phillips-head screws (included).

Backbox Model ULXCP87 is ordered separately and is required to maintain UL Listing. It features a flat grille mounting flange for recessed installation in new drywall construction or tile ceiling applications where plenum space for a large speaker system is limited. The 6.687"D acoustically treated backbox is fabricated of welded, unitized heavy gauge steel, undercoated and lined with 1.5" thick acoustic batting to eliminate acoustic and metallic resonance. It measures 10.063" Dia x 6.687"H. The backbox includes four combination 1/2" - 3/4" conduit knockouts, 8-32 screw retaining U-clips on the flange for grille installation, and Lowell's durable black powder epoxy finish.

For installations in suspended tile ceilings, a tile bridge is recommended to transfer the assembly weight to the ceiling grid. Order Model LBS8 or LBS8R1 order separately (see pg 4).

## Ordering Information

UL Listed Speaker Model	Driver (included)	Grille (included)	Xfmr (included)	Backbox (Required - Order separately)	Tile Bridge (Recommended in tile ceilings)
WB8-8A50-T870	8A50	WB8 (12.875"Dia)	TLM870	ULXCP87 (10.063"Dia x 6.687"H)	LBS8, LBS8R1



**WB8-8A50-T870**

UL Listed 8", 50W Speaker /Grille / Transformer Assembly

**A  
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**12"/10"**  
Speakers & Accessories

**8"**  
Speakers & Accessories

**6"**  
Speakers & Accessories

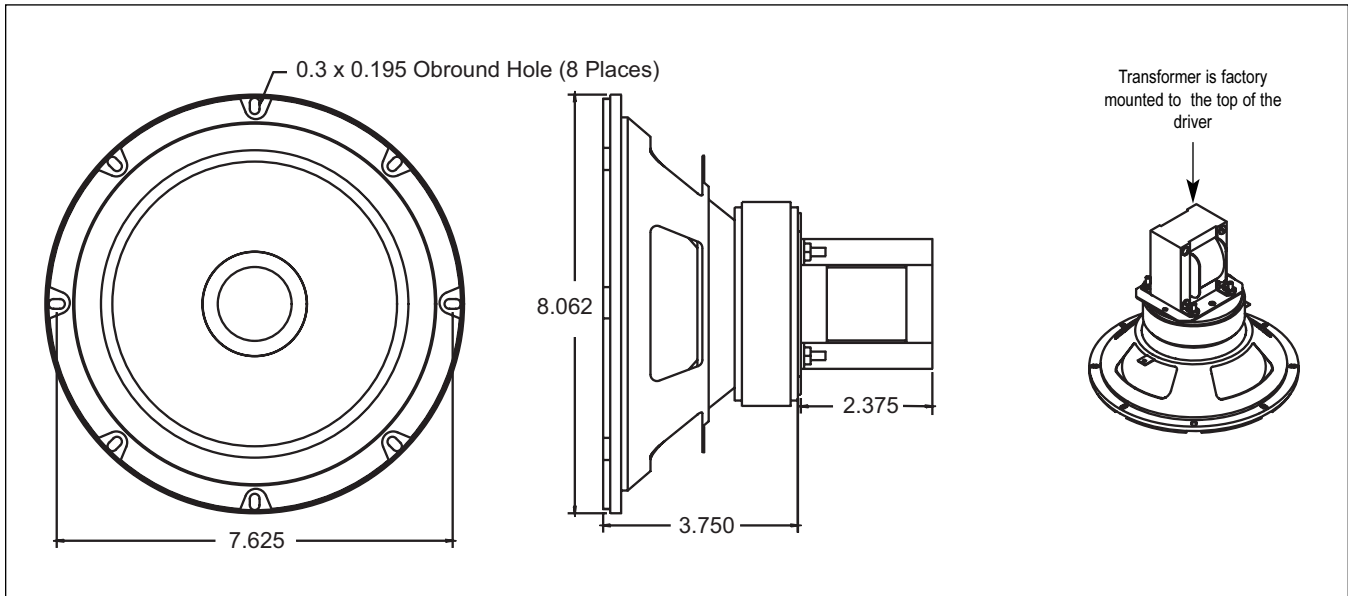
**4"**  
Speakers & Accessories

**Horn**  
Speakers & Accessories

**Masking**  
Speakers & Generators

**Control**  
Accessories & Electronics

**Systems**



**Specifications: Lowell Model 8A50 Coaxial Driver**

**PERFORMANCE**

Power Handling	50 watts RMS (nominal) measured per EIA Standard RS-426A (70W in a 1/2 cu.ft. backbox)
Sensitivity	95dB SPL (peak), 90dB SPL (avg) measured 2.83V @ 1m
Impedance	8 ohms (nominal), 8 ohms @180Hz (minimum)
Frequency Response	40Hz-20kHz (nominal), 40Hz-20kHz (±6dB)
Crossover Frequency	4000Hz, 1st order high-pass filter
Dispersion Angle	110° @ 2000Hz octave (-6dB)

**PHYSICAL - WOOFER**

Cone Material	Polypropylene with rubber half-roll (up) surround
Magnet Weight, Material	20oz. (567g), strontium ferrite ceramic
Voice Coil Diameter, Material	1.4 inch (36mm), copper wire over aluminum former
Terminals	Quick disconnect type - spade lugs

**PHYSICAL - TWEETER**

Diameter	2.05 inch (52mm) housing with 1 inch (26mm) Dia. balanced-drive dome
Magnet Weight, Material	2oz. (57g), ceramic
Voice Coil Diameter, Material	0.53 inch (13.5mm), copper wire and ferrofluid

**MECHANICAL**

Basket	20 gauge stamped steel with black enamel finish
Outside Diameter	8.08 inch (205mm)
Mounting Bolt Circle	7.7 inch (195mm) with 8 obround holes equally spaced at 45 degrees.
Cutout Diameter	7.2 inch (182mm)
Mounting Depth-Driver	3.85 inch (94mm)
Mounting Depth-Driver/xfmr	6.25 inch (159mm)
Net Weight-Driver	3.5 lbs. (1.6kg)
Net Weight-Driver/xfmr/grille	4.6 lbs. (2.09kg)

**THIELE-SMALL PARAMETERS**

Pe .....50W	Qts .....0.68	BL .....7.5Tm	Sd .....33.2 in <sup>2</sup> , 214cm <sup>2</sup>
Fs .....52Hz	Qes .....0.87	Efficiency, η .....0.47%	Mms .....20.6g
Xmax .....0.21 in., 6mm	Qms .....3.1	Vas .....29.2 liters, 1782 cu.in	Cms .....0.45mm/N
Re .....7.2Ω			

**Transformer Specifications**

Mounted Xfmr	Xfmr Power Rating	Xfmr Primary (Pri)	Xfmr Taps (Pri)	Xfmr Response	Xfmr Insertion Loss
TLM870	8W	70V	1, 2, 4, 8W	50Hz - 15kHz ±1dB	0.8dB



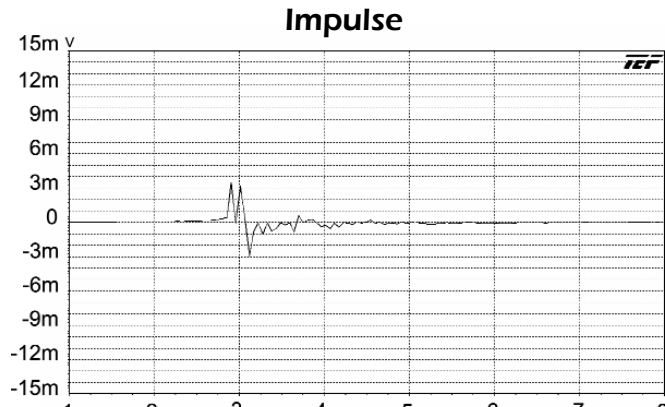
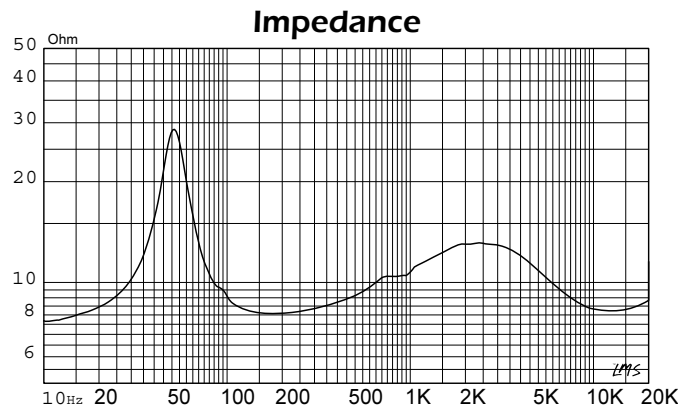
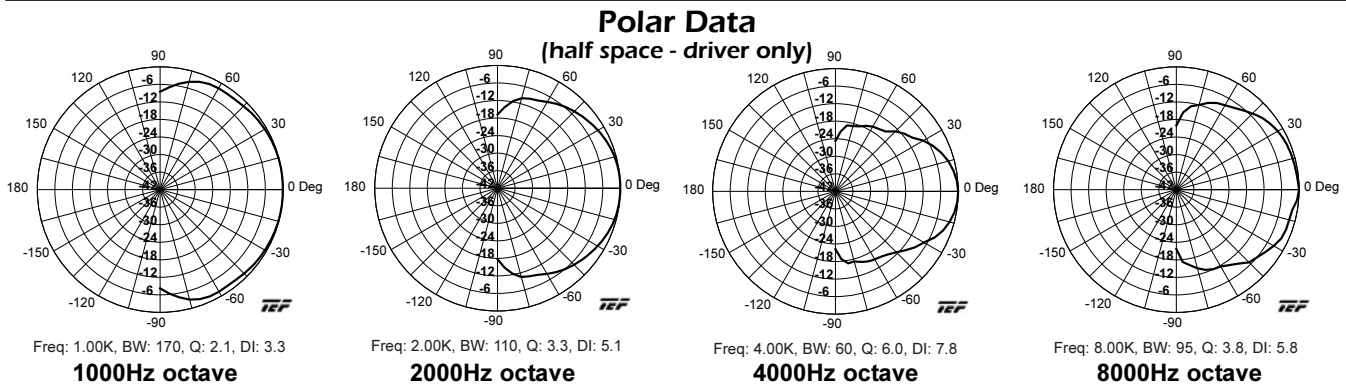
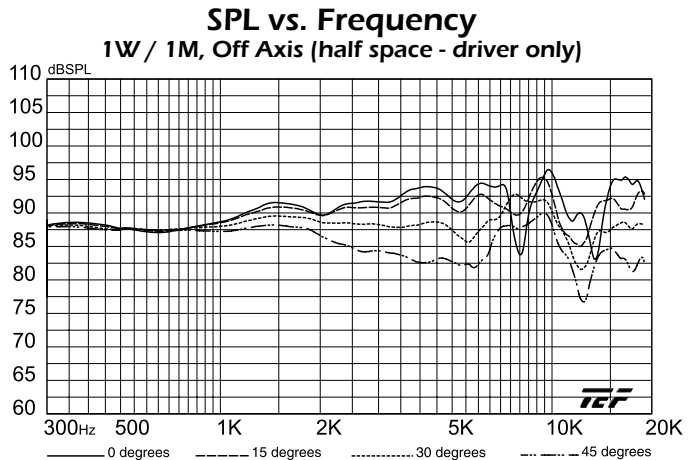
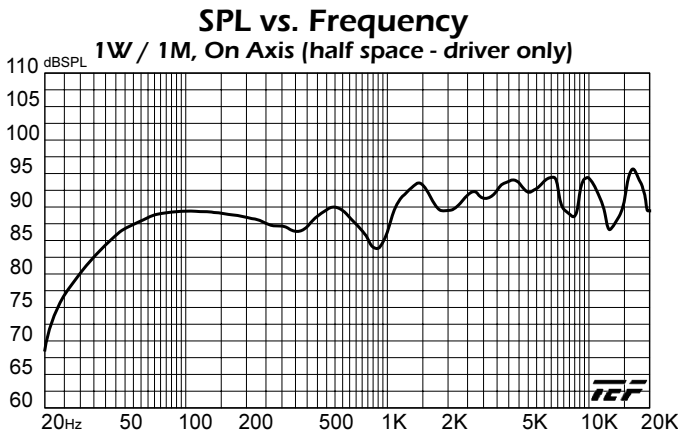
# WB8-8A50-T870

## UL Listed 8", 50W Speaker /Grille / Transformer Assembly

### Scope of Lowell Model 8A50 performance tests

Lowell loudspeakers are thoroughly tested to provide specifiers and contractors with solid data that accurately reflects the performance of production drivers. Performance tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer and a LinearX LMS measurement system. Frequency Response data is provided in two ways: Nominal - which is the generally usable response range and Limited Bandwidth - (defined by  $\pm$  \_\_dB) which is useful in predictive engineering calculations. Resonance frequency (Fs) is also provided in Thiele-Small parameters as the recommended limit from which to drive a speaker. Sensitivity (SPL) is presented two ways: Peak - used by many manufacturers (and presented here for comparison purposes) is a rating based on a narrow portion of the frequency response curve, and Average - which is a computer calculation of the octave-weighted average over the entire engineering bandwidth as shown in the frequency response ( $\pm$  \_\_dB). Dispersion Angle is defined as the angle of coverage that is no more than 6dB down

from the on-axis value averaged over the 2000 Hz octave band. Since speech intelligibility is very dependent upon the 2000 Hz octave, this specification is quite useful in designing paging systems that provide even coverage and intelligibility. Thiele-Small Parameters were measured with the LMS system using the delta mass method. These parameters are useful in determining the appropriate type and size of enclosure for a specific driver. In addition to the standard frequency response (on axis), impedance, and polar curves, off-axis frequency response and impulse curves are presented. Off-axis Response is another way of looking at the polar response of a speaker. It is especially useful in displaying the relative change in the sound of a speaker as one increasingly moves off-axis. Each curve is the average of response over a 15° range. Therefore, the 0° curve is the average of -5°, 0°, and +5°. The 15° curve is the average of -10°, -15°, -20°, +10°, +15°, and +20°. The final graph is an Impulse Curve which displays how well the electro-magnetic motor and the mechanical suspension work together to control the motion of the cone.





## WB8-8A50-T870

### UL Listed 8", 50W Speaker /Grille / Transformer Assembly

#### A & E Specifications

The UL Listed Standard 1480 General Signaling speaker shall be Lowell's 50W Model WB8-8A50-T870 with 8-inch driver Model 8A50 with attached 70V 8W transformer Model TLM870 mounted to ceiling grille Model WB8.

The driver shall be of the coaxial type having electrically independent high and low frequency transducers. The low frequency section shall have an 8 inch diameter polypropylene cone and the high frequency section shall have a tweeter with a 1" balanced-drive dome. A built-in electrical crossover network shall be employed to accomplish the proper frequency division between the two drivers. The crossover frequency shall be at 4000Hz with a 1st order high-pass filter. It shall be capable of producing a uniform audible frequency response over the range of 40Hz-20kHz±6dB with a dispersion angle of 110 degrees @ 2000Hz-6dB. The average sensitivity shall measure 90dB (SPL at 1W/1M). Rated power handling shall be 50 watts RMS. The low frequency voice coil shall have a diameter of 1.4 inch and shall operate in a magnetic field derived from a ferrite (ceramic) magnet having a nominal weight of 3.5lbs. The high frequency voice coil shall have a diameter of 0.57 inches and operate in a magnetic field derived from a ferrite (ceramic) magnet having a nominal weight of 2oz. The

voice coil impedance shall be 8 ohms. The frame shall be structurally reinforced stamped 20-gauge steel with an overall diameter of 8.08 inches with eight obround holes equally spaced at 45 degrees on a 7.7 inch diameter mounting bolt circle. All external metal parts shall be finished in black enamel coating or zinc plating to resist rust and corrosion.

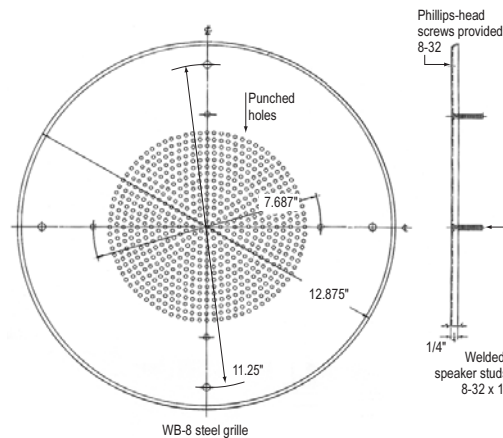
The transformer shall be Model TLM870 with primary taps at 8, 4, 2 and 1 watt and frequency response of 50Hz - 15kHz ±1dB. It shall be factory mounted to the top of Model 8A50 driver.

The driver/transformer shall be mounted to a one-piece perforated steel grille Model WB8. The grille shall be finished in white powder epoxy paint. It shall measure 12.875" Dia and mount using four 8-32 x 1.5" white screws (included).

UL required backbox Model ULXCP87 (order separately) shall be 6.687"D unitized heavy gauge steel, undercoated and lined with 1.5" thick acoustic batting to eliminate acoustic and metallic resonance. It shall measure 10.063"Dia x 6.687"H with a flat grille mounting flange. It shall include four combination 1/2" - 3/4" conduit knockouts, 8-32 screw retaining U-clips on the flange and be finished in black powder epoxy paint.



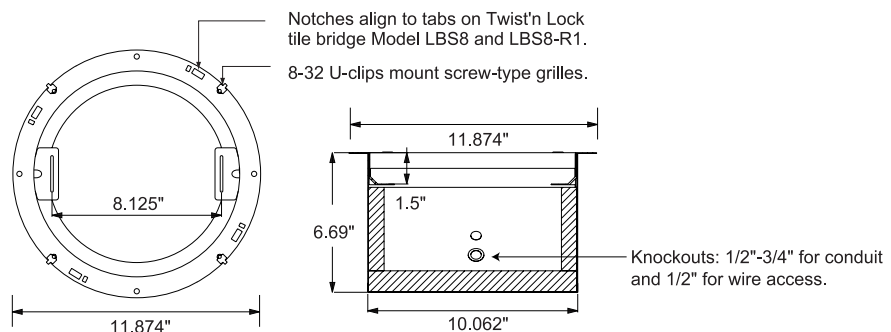
Assembly grille Model WB8 (included)



Dimensions for assembly grille Model WB8 (included)



UL Required Backbox Model ULXCP87 (order separately)



Dimensions for backbox Model ULXCP87 (Required, order separately)



LBS8

LBS8-R1

#### Accessory T-Bridge Details

**LBS8** 23.75"L with 8.5"SQ opening for screw or Twist n' Lock grille mounting

**LBS8-R1** 23.75"L with 10.75"Dia. opening for screw or Twist n' Lock grille mounting