

Front view of assembly grille (WB4)



Assembly Model WB4-4A30-T870


**ULDX104 backbox**  
 (required - order separately)

### Quality Features

- UL Listed - Standard 1480 - General Signaling speaker/transformer/grille for use with backbox Model ULDX104.
- Assembly includes 30W driver Model 4A30 with 70V transformer Model TLM870 mounted to grille Model WB4.
- Premium 30W coaxial 4" (EIA 5") driver exhibits smooth musical sound with wide dispersion (150°) and a small architectural footprint.

### Description

Lowell's speaker/grille/transformer Model WB4-4A30-T870 is listed under UL Standard 1480 - General Signaling. This UL Listed Model features Lowell's premium coaxial 4-inch driver Model 4A30 with high performance TLM870 transformer mounted to the popular WB4 white ceiling grille. The assembly is UL Listed for use with backbox Model ULDX104 (required-order separately).

Coaxial 4" driver Model 4A30 (30W) is one of Lowell's "A-Series" of loudspeakers. The A-Series represents a deliberate move up in sound quality and performance over standard commercial coaxial drivers. It is engineered to meet the demand for very high quality paging and background music reproduction. Model 4A30 provides smooth audio quality with 150° dispersion for use in upscale hotel lobbies, department stores, airports and transportation venues where clear, intelligible communication with accurate reproduction are key factors in creating a positive listening experience.

The 4A30 achieves excellent voice and music reproduction over a large coverage area. The 4" driver features a 10oz. magnet coupled with a 1-inch copper voice coil driving a

polypropylene cone with half-roll rubber surround for long cone travel and good edge damping. The post-mounted liquid-cooled tweeter is a 1-inch diameter balanced drive dome with a first order high-pass filter. Frequency response is 80Hz-20kHz±6dB with a crossover at 5kHz. Additionally, the loudspeaker's capacity to deliver a wide angle of sound distribution at 2kHz with uniform response and clear audibility ensures complete coverage with minimum units. The loudspeaker frame is stamped 20-gauge steel with a black enamel paint 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 WB4 which is an attractive one-piece punched steel grille finished in durable white powder epoxy paint. The grille is 7.25" Dia and mounts to the backbox using four 8-32 x 1.5" white Phillips-head screws (included).

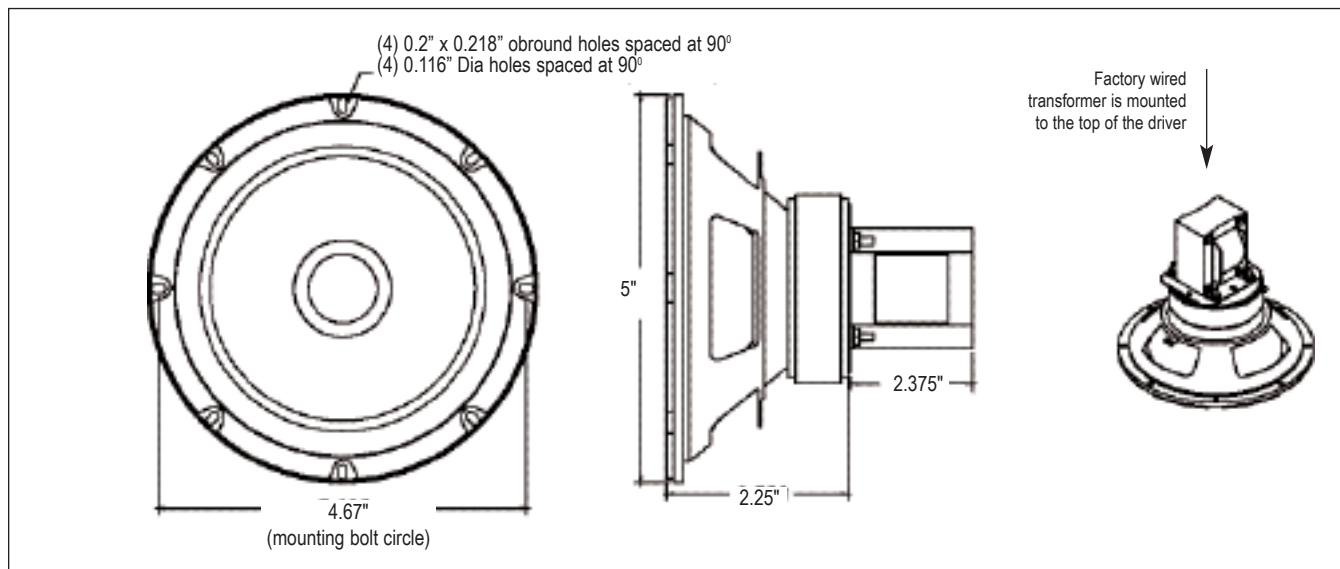
Backbox Model ULDX104 is ordered separately and is required to maintain UL Listing. The backbox measures 10"Dia. x 6.75"D with an additional 3/8"D formed flange for attaching the screw mount grille. Model ULDX104 is fabricated of welded 22 gauge steel and undercoated to eliminate acoustic and metallic resonance. Additionally, it is lined with 1.5" thick batted lining with a density rating of 1.5 pounds to neutralize undesirable resonance in the high frequency range. For conduit access, the backbox is furnished with four combination 1/2 - 3/4" knockouts. For installation convenience, four flexible mounting straps are positioned at 90 degree intervals.

To facilitate suspended ceiling installation and to distribute the combined speaker and backbox weight to the ceiling grid, the backbox may be used with tile bridge Model LBS4-DX (order separately-see page 4).

### Ordering Information

UL Listed Speaker Model	Driver (included)	Grille (included)	Xfmr (included)	Backbox (Required - Order separately)	Tile Bridge (Recommended in tile ceilings)
<b>WB4-4A30-T870</b>	4A30	WB4 (7.25"Dia)	TLM870	<b>ULDX104</b> (10"Dia x 6.75"H)	<b>LBS4DX</b>

## UL Listed 4", 30W Speaker /Grille / Transformer Assembly

**PERFORMANCE**

Power Handling	30 watts (EIA 426B)
Sensitivity	94dB SPL (peak), 89dB SPL (avg) measured 2.83V @ 1m
Impedance	8 ohms (nominal)
Frequency Response	40Hz-20kHz (nominal), 80Hz-20kHz ( $\pm 6$ dB)
Crossover Frequency	5000Hz, 1st order high-pass filter
Dispersion Angle	150° @ 2000Hz octave (-6dB)

**PHYSICAL - WOOFER**

Cone Material	Polypropylene with rubber half-roll (up) surround
Magnet Weight, Material	10oz. (283g), ferrite ceramic
Voice Coil Diameter, Material	1 inch (25mm), copper wire over aluminum former
Terminals	Quick connect type - two 0.187" spade lugs (push terminals)

**PHYSICAL - TWEETER**

Diameter	1.75 inch (44.5mm) housing with 1 inch (26mm) Dia. balanced-drive dome
Magnet Weight, Material	0.06oz. (1.8g), neodymium magnet
Voice Coil Diameter, Material	0.5 inch (14mm), liquid cooled copper wire

**MECHANICAL**

Basket	20 gauge stamped steel with black enamel paint
Outside Diameter	5.03 inch (128mm)
Mounting Bolt Circle	4.67 inch (116mm) with 4 obround holes spaced at 90°, 4 round holes spaced at 90°.
Cutout Diameter	4.125 inch (105mm)
Mounting Depth, Net Weight	2.25 inch (57mm), 1.75 lbs. (0.79kg)

**Loudspeaker / Transformer Assembly**

Assembly Model	Mounted Xfmr	Assembly Depth*	Assembly Weight	Xfmr Power Rating	Xfmr Primary (Pri)	Xfmr Taps (Pri)	Xfmr Response	Xfmr Insertion Loss
4A30-T870	TLM870	4.5"	2.9 lb.	8W	70V	1, 2, 4, 8W	50Hz - 15kHz $\pm 1$ dB	0.8dB

\*Minimum depth required for the speaker transformer assembly to be rear mounted into an enclosure.

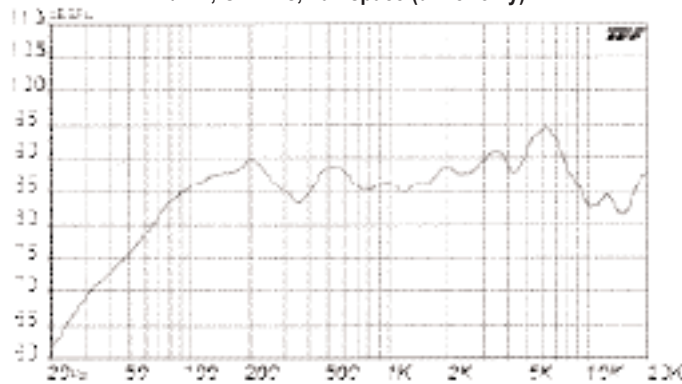
### Scope of Lowell Model 4A30 performance and power tests

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. The power handling capability is based on EIA Standard RS-426B.

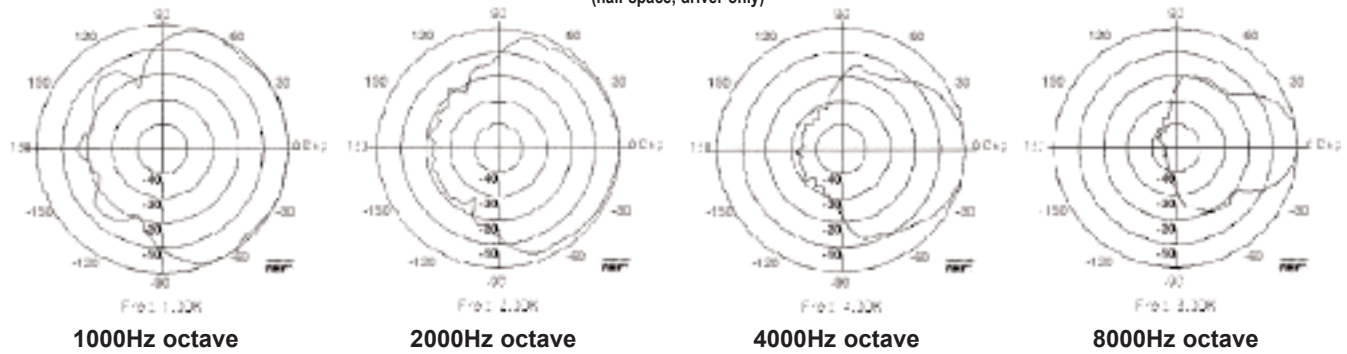
Frequency Response data is provided in two ways: *Nominal* - which is the generally usable response range and *Limited Bandwidth* - (defined by  $\pm$ \_\_dB) which is useful in predictive engineering calculations. Resonance frequency (Fs) is also provided in Thiele-Small parameters as the recommended 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.

**SPL vs. Frequency**  
1W / 1M, On Axis, half space (driver only)



**Polar Data**  
(half space, driver only)



UL Listed 4", 30W Speaker /Grille / Transformer Assembly

**A & E Specifications**

The UL Listed Standard 1480 General Signaling speaker assembly shall be Lowell's 30W Model WB4-4A30-T870 with 4-inch driver Model 4A30 and attached 70V 8W transformer Model TLM870 mounted to ceiling grille Model WB4.

The driver shall be of the coaxial type having high and low frequency transducers. The low frequency section shall have a 4 inch diameter polypropylene cone and the high frequency section shall have a tweeter with a 1" Dia. 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 5kHz with a 1st order high-pass filter. It shall be capable of producing a uniform audible frequency response over the range of 80Hz-20kHz±6dB with a dispersion angle of 150 degrees @ 2000Hz-6dB. The average sensitivity shall measure 89dB (SPL at 1W/1M). Rated power handling shall be 30 watts (EIA 426B). The low frequency voice coil shall have a diameter of 1 inch and shall operate in a magnetic field derived from a ferrite (ceramic) magnet having a nominal weight of 10oz. The high frequency voice coil shall have a diameter of 0.53 inches and operate in a magnetic field derived from a Neodymium magnet having a nominal weight of 0.06oz. The voice coil impedance shall be 8 ohms. The frame shall be struc-

turally reinforced stamped 20-gauge steel with an overall diameter of 5 inches with four round and four obround holes equally spaced on a 4.67 inch diameter mounting bolt circle. All external metal parts shall be finished in black enamel paint or zinc plating to resist rust and corrosion.

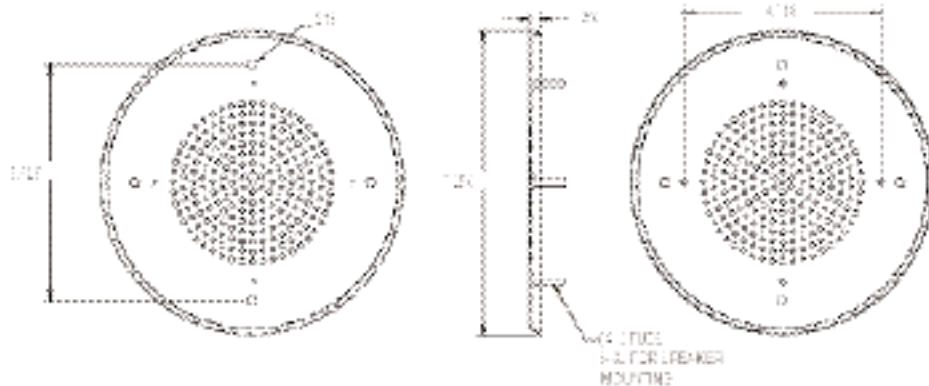
The transformer shall be Model TLM870 with primary taps at 8, 4, 2 and 1 watt and frequency response of 50Hz - 15kHz ±1dB. It shall be factory mounted to the top of Model 4A30 driver.

The driver/transformer shall be mounted to a one-piece punched steel grille Model WB4. The grille shall be finished in white powder epoxy paint. It shall measure 7.25" Dia and mount using four 8-32 x 1.5" white screws (included).

UL required backbox Model ULDX104 (order separately) shall be unitized heavy gauge steel, undercoated and lined with 1.5" thick acoustic batting to eliminate acoustic and metallic resonance. It shall measure 10"Dia x 6.687"H with an additional 3/8"D formed flange. It shall include four combination 1/2" - 3/4" conduit knockouts, flexible mounting straps, 8-32 screw retaining U-clips on the flange and be finished in black powder epoxy paint.



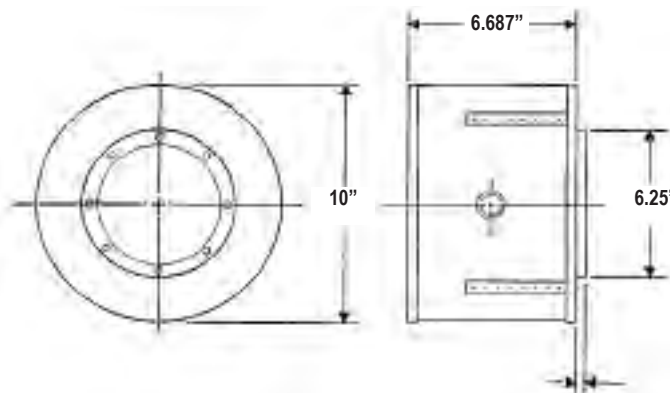
Assembly grille Model WB4 (included)



Dimensions for assembly grille Model WB4 (included). Note: The driver/transformer is factory mounted to the grille.



UL Required Backbox Model ULDX104 (order separately)



Dimensions for backbox Model ULDX104 (Required, order separately)



LBS4-DX

**Accessory T-Bridge Details**

LBS4-DX 23.75"L T-bridge mts 4in sys with round DX backbox