



## Quality Features

- Reliable 15W 8" (10oz.) speaker for a value price.
- Dual cone 8-inch driver provides clear and accurate reproduction of music and voice communications.
- Available with a factory-wired transformer for fast installation using color-coded leads.
- Compatible with Lowell's extensive selection of architectural grilles, backboxes, and surface baffles (see page 4).

## Description

Lowell dual cone 8" (10oz) Model 810 is a step up in full range performance from the commercial industry standard 8" (5oz) speaker. Model 810 features a 10oz magnet for higher power handling and greater sensitivity. It also includes a 1" copper voice coil, dual cone design, and plated steel basket. It provides solid performance and good value in almost any basic paging or background music system. For versatile application, the speaker is available with a selection of factory wired transformers and will fit all standard 8" ceiling grilles and backboxes. Lowell Model 810 is often specified for reliable paging and background music performance in commercial, industrial, and institutional applications including offices, public buildings, educational and medical facilities.

The dual cone loudspeaker assembly employs a highly efficient magnetic structure energized by a 10oz ceramic magnet. The use of a hard fibre whizzer cone mechanically coupled to the 1" voice coil provides extended high frequency response with fine clarity, while the molded fibre cone enhances mid and low range frequency performance.

The loudspeaker frame is stamped 20 gauge steel with a zinc plated finish to prevent corrosion. The frame also includes pre-punched holes for transformer mounting. See factory wired speaker/transformer assemblies on page 2.

*Model 810 is manufactured in the United States of America and meets or exceeds all applicable EIA standards. Lowell also manufactures a complete selection of architectural ceiling grilles, acoustic, protective, and special application backboxes and baffles to facilitate speaker installation wherever audio communications are desired.*



**810** (formerly 8C10W)

15-Watt 8" Dual Cone Driver 10oz. Magnet

**AUDIO**

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

**8"**  
Speakers & Accessories

**6"**  
Speakers & Accessories

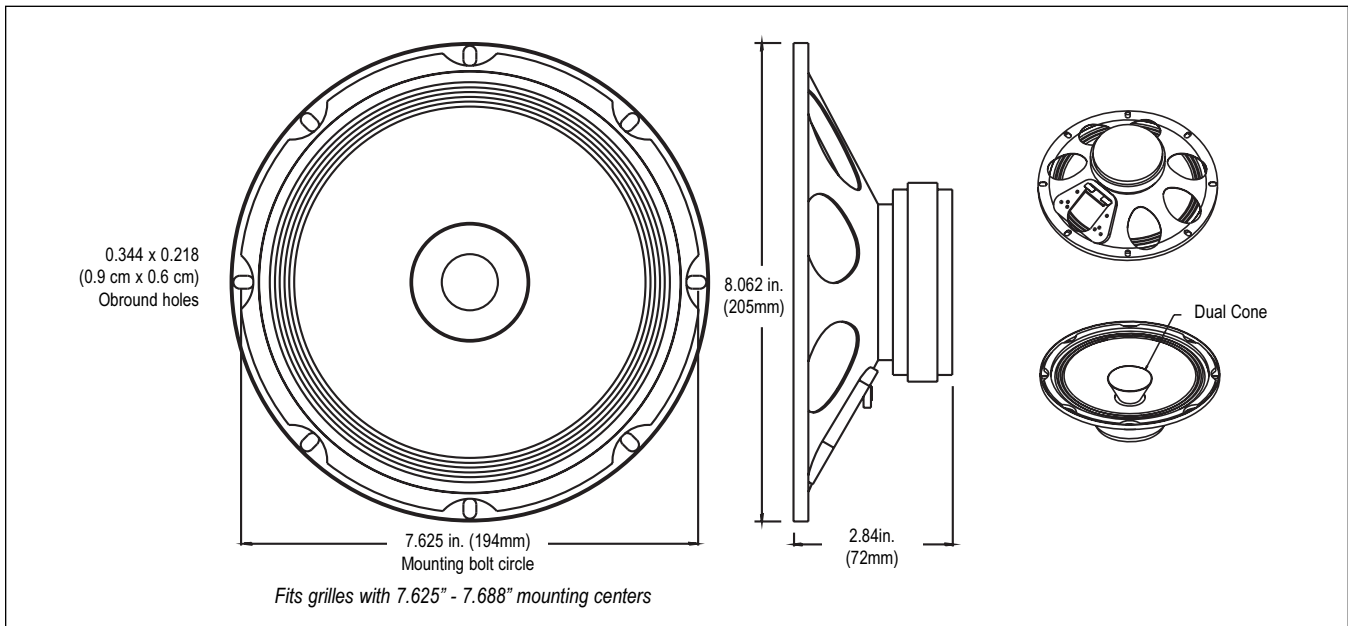
**4"**  
Speakers & Accessories

**Horn**  
Speakers & Accessories

**Masking**  
Speakers & Generators

**Control**  
Accessories & Electronics

**Drivers**



**Specifications: Lowell Model 810 Dual Cone Driver**

**PERFORMANCE**

Power Handling	15 watts RMS (nominal) measured per EIA Standard RS-426A
Sensitivity	100dB SPL (peak), 95dB SPL (avg) measured 2.83V @ 1m
Impedance	8 ohms (nominal), 8.8 ohms @260Hz (minimum)
Frequency Response	45Hz-18kHz (nominal), 45Hz-13kHz (±6dB)
Dispersion Angle	120° @ 2000Hz octave (-6dB)

**PHYSICAL - WOOFER**

Magnet Weight, Material	10oz. (264g), strontium ferrite ceramic
Voice Coil Diameter, Material	1 inch (26mm), copper wire
Cone Material	Dual cone paper with self edge surround
Terminals	Quick disconnect type - spade lugs

**MECHANICAL**

Basket	20 gauge stamped steel with zinc plating
Outside Diameter	8.062 inch (205mm)
Mounting Bolt Circle	7.625 inch (194mm) with 8 obround holes equally spaced at 45 degrees.
Cutout Diameter	7.15 inch (182mm)
Mounting Depth	2.84 inch (72mm)
Net Weight	2.0 lbs. (0.91kg)

**THIELE-SMALL PARAMETERS**

Pe.....15W	Qts.....1.05	BL.....5.0Tm	Sd.....33.6 in <sup>2</sup> , 214cm <sup>2</sup>
Fs.....88Hz	Qes.....1.25	Efficiency, η.....1.5%	Mms.....7.6g
Xmax.....0.05 in., 1.4mm	Qms.....6.4	Vas.....29 liters, 1770 cu.in.	Cms.....0.44mm/N
Re.....7.6Ω			

**810 Factory-Wired Loudspeaker / Transformer Assemblies**

Assembly Model	Mounted Xfmr	Assembly Depth*	Assembly Weight	Xfmr Power Rating	Xfmr Primary Voltage	Xfmr Primary Taps	Xfmr Response	Xfmr Insertion Loss
810-T25	TLM25	2.84"	2.4 lb	4 Watts	25V	.25, .5, 1, 2, 4W	100Hz - 10kHz ±1dB	1dB
810-T70	TLM70	2.84"	2.4 lb	4 Watts	70V	.25, .5, 1, 2, 4W	100Hz - 10kHz ±1dB	1dB
810-T72	TLM72	2.84"	2.4 lb	4 Watts	25/70V	.5, 1, 2, 4W	100Hz - 10kHz ±1dB	1dB
810-T470	TLM470	2.84"	2.6 lb	4 Watts	70V	.5, 1, 2, 4W	60Hz - 15kHz ±1dB	0.8dB
810-T825	TLM825	2.84"	2.9 lb	8 Watts	25V	1, 2, 4, 8W	50Hz - 15kHz ±1dB	0.8dB
810-T870	TLM870	2.84"	2.9 lb	8 Watts	70V	1, 2, 4, 8W	50Hz - 15kHz ±1dB	0.8dB

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



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**Scope of Lowell Model 810 performance and power tests**

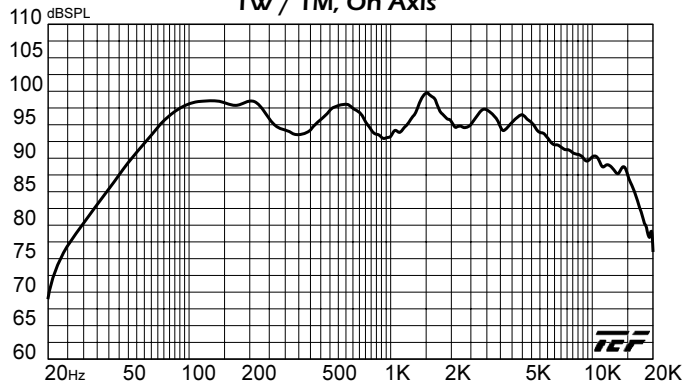
Lowell loudspeakers are thoroughly tested to provide specifiers and contractors with solid data that accurately reflects the performance of production drivers. Performance tests are conducted on randomly selected final production assemblies. Testing equipment includes the GoldLine TEF-20 analyzer and a LinearX LMS measurement system. The power handling capability is based on EIA Standard RS-426A.

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 ( $F_s$ ) 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

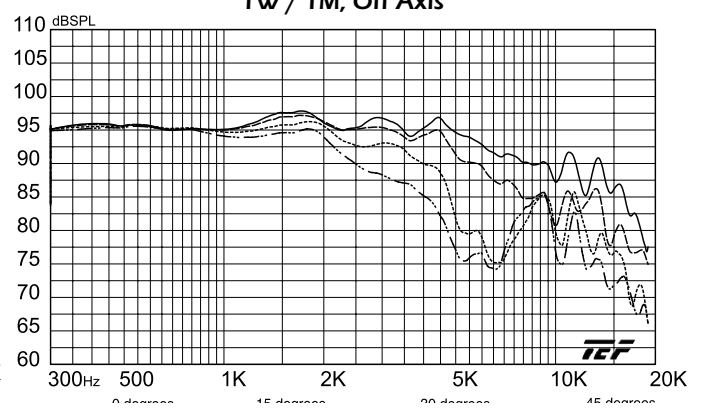
that is no more than 6dB down from the on-axis value averaged over the 2000 Hz octave band. Since speech intelligibility is very dependent upon the 2000 Hz octave, this specification is quite useful in designing paging systems that provide even coverage and intelligibility. Thiele-Small Parameters were 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.

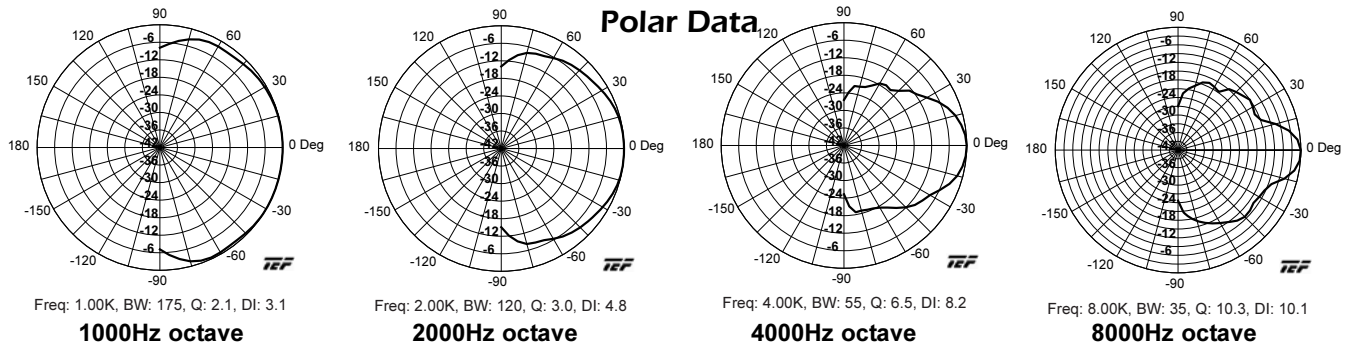
**SPL vs. Frequency**  
1W / 1M, On Axis



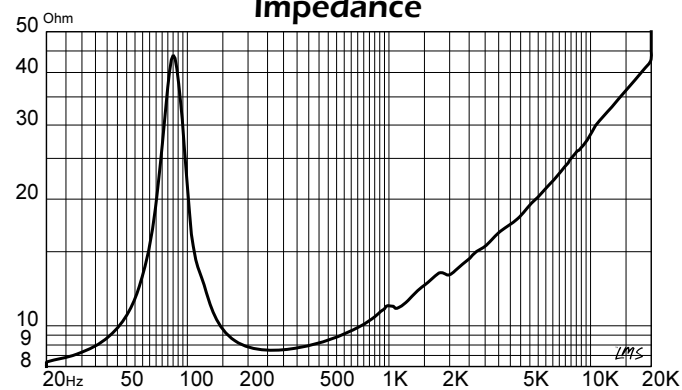
**SPL vs. Frequency**  
1W / 1M, Off Axis



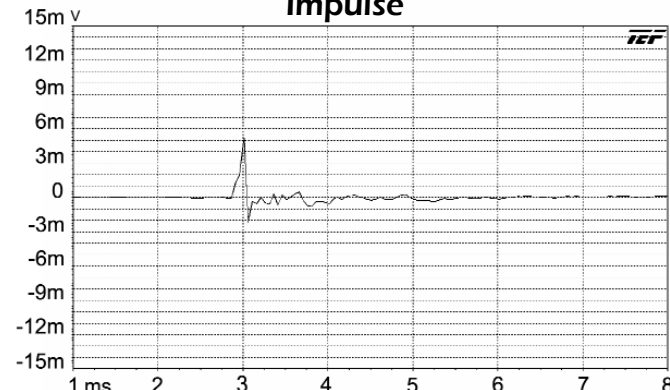
**Polar Data**



**Impedance**



**Impulse**





**810** (formerly 8C10W)

## 15-Watt 8" Dual Cone Driver 10oz. Magnet

### A & E Specifications

The dual cone 8 inch loudspeaker shall be Lowell Model 810 (formerly Model 8C10W). Loudspeaker shall be furnished and installed at each designated location on the architectural plans and/or as specified herein. The loudspeaker shall be of the permanent magnet type having a seamless molded fibre cone with a hard fibre whizzer cone mechanically coupled to the voice coil for extended high frequency response. The loudspeaker shall be capable of producing a uniform audible frequency response over the range of 45Hz-18kHz nominal, 45Hz-13kHz±6dB with a dispersion angle of 120 degrees @ 2000Hz-6dB. The average sensitivity shall measure 95dB (SPL at 1W/1M). Rated power handling capacity shall be 15 watts RMS. The voice coil shall have a diameter of 1 inch and shall operate in a magnetic field derived from a strontium ferrite (ceramic) magnet having a nominal weight of 10oz. The voice coil impedance shall be 8 ohms. The loudspeaker shall have a round, structurally reinforced stamped 20 gauge steel frame to maintain precise mechanical alignment and shall provide facilities for mounting a trans-

former. The loudspeaker shall have an overall diameter of 8.062 inches with eight obround holes equally spaced at 45 degrees on a 7.625 inch diameter mounting bolt circle. The overall depth shall not exceed 2.84 inches (not including transformer). All external metal parts shall be zinc plated to resist rust and corrosion. The loudspeaker specified herein shall be Model 810 as supplied by Lowell Manufacturing Company, Pacific, Missouri, 63069 U.S.A.

#### For 25 or 70.7 volt distributed systems:

The Model 810 dual cone loudspeaker shall be equipped with Lowell Model \_\_\_\_\_ transformer, factory mounted and wired. The transformer's primary voltage shall be \_\_\_\_\_ (25V, 70.7V, 25/70V) and shall provide selectable power taps of \_\_\_\_\_ watts. The transformer frequency response shall be from \_\_\_\_\_ to \_\_\_\_\_ Hz ± \_\_\_\_\_ dB, with a maximum insertion loss of \_\_\_\_\_ dB. The loudspeaker and transformer assembly specified herein shall be referred to as the Lowell Model 810-\_\_\_\_ (T25, T70, T72, T470, T825, T870).

### Companion Backboxes and Grilles (partial selection)

To meet performance, installation, and aesthetic requirements, 810 drivers may be matched with a variety of backboxes and attractive architectural grilles. Backbox models with batting include 1-1/2" thick acoustic fiberglass. Please note, a much larger selection of backboxes and grilles is available from Lowell; refer to the current Lowell catalog or website for complete information.



CP810  
CP87 / CP84

#### Recessed Backboxes for Screw-Mount Grilles - Partial selection on right

CP84	CRS 11.938Dia x 4.063D, Ext. lip for sheetrock
CP87	CRS 11.938Dia x 6.687D, Ext. lip for sheetrock + batting
CP810	CRS 11.938Dia x 10.063D, Ext. lip for sheetrock + batting



8XD4 / 8PSBX

#### Recessed Backboxes for Screw-Mount Grilles - Partial selection on right

8XD4	CRS 10Dia x 4D, stacks for warehousing
8PSBX	Plastic 10Dia x 4D, stacks for warehousing



IX810

IX810	CRS 10.063Dia x 10.063D Direct mnt 8in spkr-no load on grille+ batting
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XCP810  
XCP87 / XCP84

#### Recessed Backboxes for Screw or Torsion Grilles - Partial selection on right

XCP84	CRS 10.063Dia x 4.063D, flat flange for tile ceiling
XCP87	CRS 10.063Dia x 6.687D, flat flange for tile ceiling + batting
XCP810	CRS 10.063Dia x 10.063D, flat flange for tile ceiling + batting



P68X

#### Recessed Backboxes for Screw-Mount Grilles - Partial selection on right

P68X	CRS 10Sq x 4D
P68X-6	CRS 10Sq x 6D



CB84

#### Surface Backbox for Screw-Mount Grilles

CB84	CRS 12.25Sq x 4D, white finish
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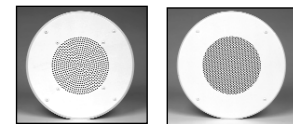


CB84-SG

#### Surface Backbox for SG-8 Grille

CB84-SG	CRS 12.25Sq x 4D, white finish
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#### Screw-Mount grilles



A8-AW

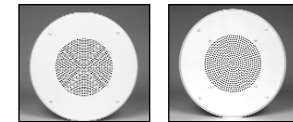
CS-8H



LO8-P

OM8-P

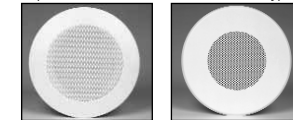
RS8-A



WB-8

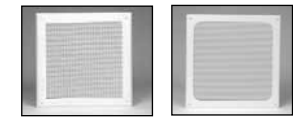
WB-8H

#### Torsion-Mount, visibly hardware free grilles below (mount XCP and IX backboxes only)



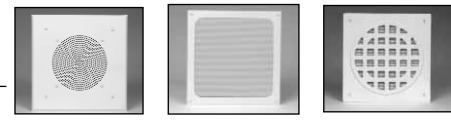
CN-8M

CS-8W



FW-8

JG-8X



IC-105

JG-8X

SQLK-8L



SG-8