Lowell™
Distributed Audio, Power & Rack Solutions

Unihorn® #LUH-15TI

15W paging/re-entrant horn with transformer, grille, trim ring
for use with 25V school intercom systems

Model #LUH-15TI can be used with or without the (included) press-fit grille and trim ring.

features

- **Description:** Ready-to-install re-entrant horn with weather-resistant housing is engineered for versatile labor-saving installation in brick, concrete block, plaster, drywall, or acoustic tile (indoors or outdoors, recessed or surface-mount). Ideal for general paging or signaling in voice communication systems.
- **Features:**
  - 15W speaker
  - 25/70V transformer (screwdriver-adjustable in front and rear)
  - Self-contained aluminum housing with moisture-seal cover
  - Contoured cast aluminum trim ring
  - Fine perforation press-fit aluminum grille fits snugly for a hardware-free appearance, while helping to protect the front of the horn from nesting birds and insects.
  - Network Grey powder epoxy finish.
  - Provides clear intelligibility with high SPL output over the extended vocal range.
- **Installation:**
  - Recessed or surface-mount (mounts in 4 inch deep spaces)
  - Mounting dogs promote quick installation.
  - Simple two-wire hookup through rear access cable clamp
  - Indoors or outdoors in brick, concrete block, plaster, drywall, or acoustic tile
  - Installs with clamps or screws in new or retrofit areas
  - Installs with or without the (included) press-fit grille and trim ring
  - Also accepts standard screw-mount grille for 8 in. speaker with 4 in. deep backbox (order separately).
- **Third Party Listings:**
  - UL1480A General Signaling (USA)
  - UL2043 suitability for use in return air plenum space
  - CSA C22.2 No. 205-M1983 Listed for electrical safety (Canada)

a&e specifications

The re-entrant horn loudspeaker shall be Lowell Model LUH-15TI. It shall be a self-contained compression driver within an aluminum weather-resistant housing that can be installed into 4 in. deep spaces. Power rating shall be 15 watts continuous. Frequency response shall be 740Hz–7.4kHz (+/–6dB). Sound pressure level shall be 105dB (1W1M) average, 116.8dB SPL (max) 15W/1M calculation based on power rating and measured sensitivity. Dispersion shall be 80 degrees @2000Hz (-6dB). Unit shall include a 70/25V transformer with taps selectable on front and rear of horn. The horn shall ship ready for standard two-wire connection with cable exiting through a rear cable clamp. The housing shall be 7.1" dia. at its widest measure with an 8" dia. flat face. The assembly shall include an aluminum trim ring/grille that is 9.6" dia. with no visible hardware and Network Grey finish. The assembly shall mount using (3) screwdriver activated clamps that are adjustable for depths of 0-1.5" or 1-2.125" or can be mounted using screws (not included).

[Options]

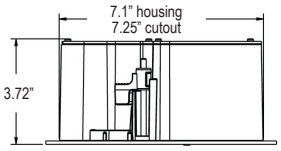
Using _____ (supplied trim ring/grille or optional vandal-resistant grille #LUH-VRG), the horn shall clamp-mount to backbox model _____ (#LUH-BOX, #LUH-BOX-INT).

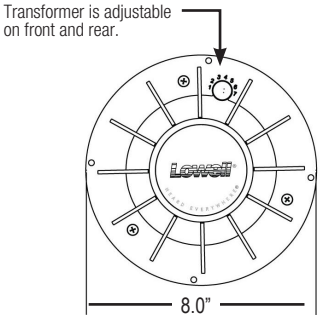
For recessed applications, trim plate #LUH-TP shall also be specified.

For acoustic tile applications, tile-bridge #LUH-TBAR shall be specified.

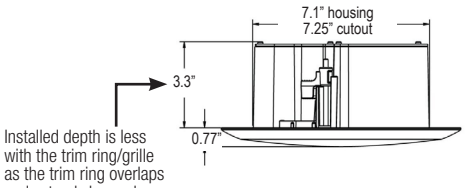
assembly

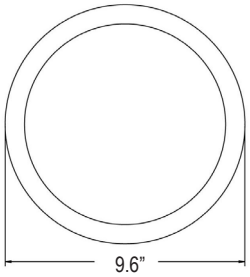
Assembly Without Trim Ring or Grille





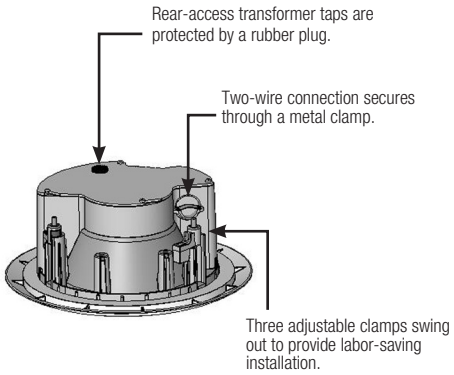
Assembly with Trim Ring and Grille





NOTE: screw holes will accept optional 8" vandal-resistant grille instead of the press-fit aluminum grille supplied.

Rear Connection

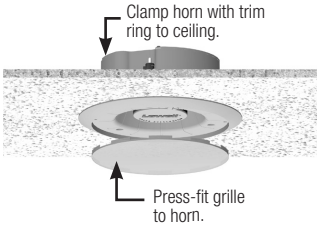


Installation methods & accessories

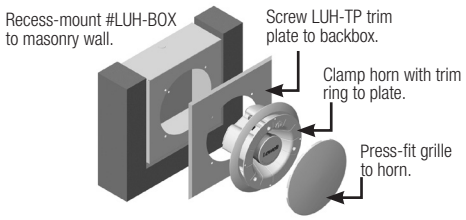
Installation Method	*Grille*	*Backbox / Trim Plate*	*T-bridge*
Open Installation	Press-fit aluminum grille* or no grille	N/A	N/A
Drywall	Press-fit aluminum grille	No backbox	N/A (existing drywall) LUH-RIB***
Lay-in Tile Ceiling	Press-fit aluminum grille	No backbox	#LUH-TBAR**
Masonry	Press-fit aluminum grille	#LUH-BOX (recessed) + #LUH-TP trim plate	N/A
Surface-mount	Press-fit aluminum grille	#LUH-BOX (surface)	N/A

**Tighten dog ears to hold trim ring in place.*
***T-bridge recommended for acoustic tile ceilings.*
****LUH-RIB to rough-in before drywall is installed (N/A in exisiting drywall).*

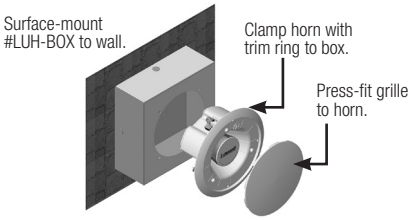
Lay-in Tile Ceiling or Drywall: horn with trim ring clamps to ceiling (tile bridge is recommended for acoustic tile). Grille press-fits to horn assembly. No visible screws.



Masonry: 10.5" square x 4"D stainless steel backbox mounts into masonry wall. Trim plate #LUH-TP screws to backbox. Horn with trim ring clamps to trim plate (trim ring covers screws). Grille press-fits to horn assembly.



Surface-mount: 10.5" square x 4"D stainless steel backbox surface-mounts to wall. Horn with trim ring clamps to box (ring covers unused screw holes). Grille press-fits to horn assembly.

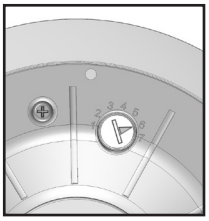


Horn Model #LUH-15TI will also accept optional vandal-resistant grille (No. LUH-VRG) or any standard 8" speaker grille; however, these options have not been evaluated by UL. Grille #LUH-VRG installs with spanner-head screws and screwdriver. Standard grilles screw-mount to the horn and fit various backboxes (see individual product spec sheets for more information).

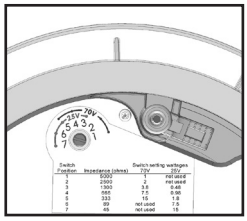
Installation Method	*Grille*	*Backbox / Trim Plate*	*T-bridge*
Open Installation	#LUH-VRG vandal-resistant grille*	N/A	N/A
Drywall	#LUH-VRG vandal-resistant grille	No backbox	N/A (existing drywall) LUH-RIB***
Lay-in Tile Ceiling	#LUH-VRG vandal-resistant grille	No backbox	LUH-TBAR**
Masonry	#LUH-VRG vandal-resistant grille	LUH-BOX (recessed) + LUH-TP trim plate	N/A
Surface-mount	#LUH-VRG vandal-resistant grille	LUH-BOX (surface)	N/A

**Tighten dog ears to hold trim ring in place.*
***T-bridge recommended for acoustic tile ceilings.*
****LUH-RIB to rough-in before drywall is installed (N/A in exisiting drywall).*

transformer settings



Adjustment from front.



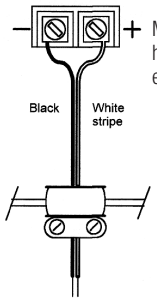
Adjustment from rear (under rubber plug).

Switch Position	*Impedance*	*Watts@ 70V*	*SPL@10ft. 70V*	*Watts@ 25V*	*SPL @10-ft 25V*
1	5000	1.0	94dB*	NOT USED	---
2	2500	1.9	97dB*	NOT USED	---
3	1300	3.8	100dB*	0.48	91dB*
4	666	7.5	103dB*	0.94	94dB*
5	333	15	106dB*	1.8	97dB*
6	89	DO NOT USE**	---	7.5	102dB*
7	45	DO NOT USE**	---	15	105dB*

* 3dB increment rating with a sweep sine-wave signal source 0 flat weight SPL meter.

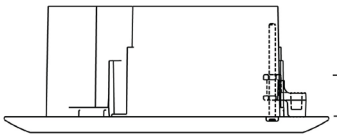
** **Note switch positions 6 and 7 ARE NOT USED on 70V applications.** They exceed capacity of the driver and transformer and could damage or destroy the driver and/or amplifier.

connections

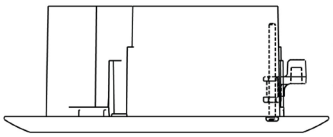


Mode #LUH-15TI ships ready for hookup with a 2-conductor cable exiting through a rear cable clamp.

reversible mounting clamps (screwdriver-adjustable)



CLAMPS (as shipped): The out-of-box clamp position will accept depths of 0–1.5" (approx).



CLAMPS (reversed): The clamp position can be reversed by installer to accept depths of 1"–2.125" (approx).

physical

Outside Size (horn housing) ..... 7.1" (180mm) Dia. housing with 8" (203mm) Dia. face x 3.72" (94mm)D

Outside Size (horn with trim ring/grille) ..... 7.1" (180mm) Dia. housing with 9.6" (244mm) Dia. trim ring/grille x 3.3" (84mm) D x .772" (19mm) Projection

Housing Material ..... Cast aluminum with gasketed rear cover

Trim Ring / Grille Material ..... Cast aluminum / perforated aluminum

Mounting Bolt Circle ..... 7.625" (194mm) with 4 holes spaced to mount an E.I.A. 8" speaker grille.

Cutout Diameter ..... 7.25" (184mm)

Net Weight ..... 6 lbs (2.72kg)

performance

Power Handling, Nominal ..... 15 watts RMS (nominal) measured per EIA Standard RS 426-B

Sensitivity ..... 105dB SPL (avg) 1W/1M, 116.8dB SPL (max) 15W1M calculation based on power rating and measured sensitivity.

Frequency Response ..... 600Hz-12kHz (nominal), 740Hz-7.4kHz (±6dB)

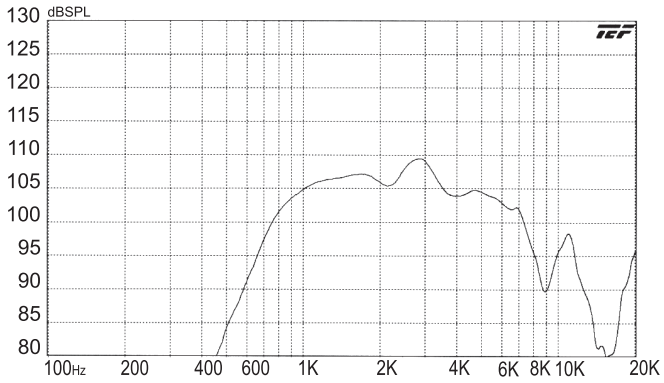
Conical Dispersion Angle ..... 80° @2000Hz octave (-6dB). *Important: See Conical vs. Linear Dispersion Angles, pg. 4.*

Impedance ..... 5000, 2500, 1300, 666, 333, 89, 45 ohms

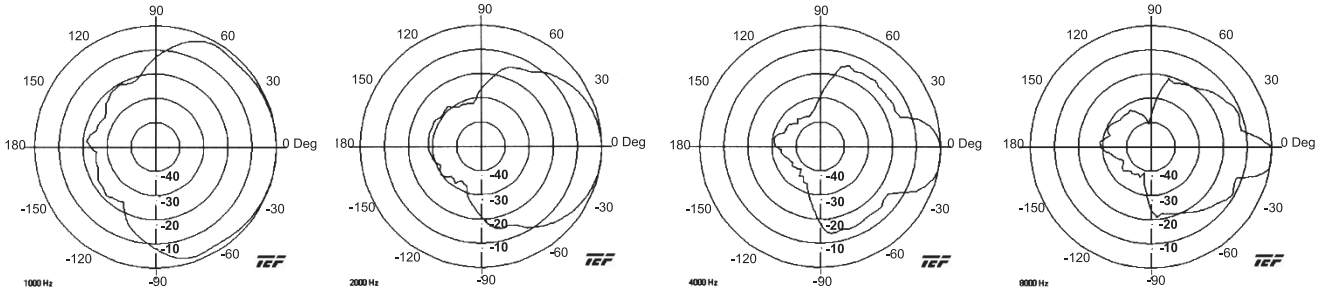
Transformer Taps ..... 25V @ .48, .94, 1.8, 7.5, 15W; 70V @ 1.0, 1.9, 3.8, 7.5, 15W (adjustable front and rear. Rear features a rubber plug)

Speaker Spacing ..... To determine speaker spacing, see the technical paper "Distributed System Speaker Spacing for the Integrator" available for free download at LowellMfg.com. An online spacing calculator is also available.

spl vs frequency (1W/1M)



polar data



1000Hz octave **2000Hz octave** **4000Hz octave** **8000Hz octave**

scope of performance & power tests

Lowell drivers and loudspeaker systems are tested to provide specifiers and contractors with data that reflects the performance of production products. Testing equipment includes the GoldLine TEF-20 analyzer (for performance measurements) and the LinearX LMS measurement system (for Thiele-Small Parameters).

Power rating is tested based on EIA Standard RS-426B.

Frequency response data is provided which is the measured frequency response range (defined by +6dB) which is useful in predictive engineering calculations.

Sensitivity (SPL) data is presented in two ways: Log Average SPL is a computer calculated log average of the SPL measured at 1 meter with 1 watt input over the stated frequency response range. Maximum SPL is calculated based on the measured log average SPL and the power rating of the speaker.

Thiele-Small Parameters for raw drivers are measured using the LinearX LMS measurement system. These parameters are useful in determining the optimum type and size of enclosure for a specific driver.

Impedance data is presented in three ways: Nominal Impedance is the generally accepted impedance for use in making comparisons with competitive products; the Impedance Curve is a graphical representation of the impedance that is measured in the lab and gives the impedance of the device over the audio frequency range; Minimum Impedance is the lowest impedance measurement at a frequency within the specified frequency response range of the speaker.

Polar data is presented for the averaged one octave band surrounding the center frequencies of 1000Hz, 2000Hz, 4000Hz, and 8000Hz. Radial polar response curves show the relative change in sound pressure level as one moves from directly on-axis to an increasingly off-axis listening position. Since coaxial speaker drivers are symmetrical in the vertical and horizontal directions, only one set of polar plots will be presented for coaxial drivers and speaker systems incorporating coaxial drivers.

Dispersion Angles: For more information on dispersion angles visit lowellmfg.com to download the white paper "Distributed System Speaker Spacing for the Integrator" or try the online Speaker Spacer app for quick calculations.

- Conical Dispersion is the angle of coverage where the SPL at an equal distance from the speaker is no more than 6dB down from the on-axis value over the 2000Hz octave band. Conical Dispersion can be used to compare two speakers, if the conical dispersion is provided for each.
- Linear Dispersion is the angle of coverage where the SPL at the average listening height (where listeners' ears would be) is no more than 6dB down from the on-axis value over the 2000Hz octave band. Linear Dispersion is used to determine the proper speaker spacing in distributed speaker systems.