Listed for UL1480 Fifth Edition Fire Protective Signaling and UL2043 suitable for use in a return air plenum space.
CSA C22.2 No. 205-M1983 for Canada

Model No. LUH-15T

15W Unihorn® paging / re-entrant horn with 25/70V transformer

- **Install with or without press-fit grille & trim ring (included)**

For standard or supervised paging or signaling in fire alarm emergency warning systems and general voice communications, the 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 applications.

Features

- 15W re-entrant horn with 25/70V transformer includes self-contained aluminum housing with moisture-seal cover, contoured cast aluminum trim ring, and fine perforation press-fit aluminum grille that fits snugly for a hardware-free appearance. Network Grey powder epoxy finish.
- Mounts into 4 in. deep spaces to provide clear intelligibility with high SPL output over the extended vocal range. Simple two-wire hookup through rear access cable clamp, dual capacitor circuitry and 105dB SPL (1W1M) make this horn ideal for standard or supervised paging/signaling in fire alarm emergency warning systems and general voice communications.
- Transformer is screwdriver-adjustable on front/rear.
- Versatile Installation:
  - — Recessed or surface-mount
  - — 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 or 4 in. deep backbox for 8 in. speaker (order separately).
- Listings:
  - — UL1480, 5th edition fire protective signaling. Meets or exceeds requirements of UL1480 “Low Temperature Test” and “High Temperature Test.” Capable of operating within ambient temperature range of -40˚ to 151˚F (-40˚to 66˚C). CSA C22.2 No. 205-M1983 for Canada.
  - — UL2043, suitability for use in return air plenum space
  - — California State Fire Marshall

Optional (order separately)

- **LUH-VRG (vandal-resistant grille):** 8.02" dia. cast-aluminum grille with secondary stainless steel barrier screen mounts directly to the 9.6" dia. trim ring with spanner screws. Network grey.
- **LUH-BOX (backbox):** 10.5" sq. x 4"D stainless steel surface or recessed backbox for extreme environments.
- **LUH-TP (trim plate):** 11.5" square trim plate covers rough openings in recessed installations.
- **LUH-TBAR (tile bridge):** distributes weight of horn assembly when installed in acoustic tile ceilings. Not pictured.
- **LUH-RIB (rough-in bridge):** mud ring mounts to ceiling structure or wall studs before drywall or plaster to reserve space for LUH horn. Return lip on bridge serves as guide to create the mounting hole.


LUH-VRG

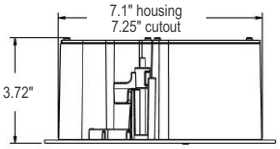

LUH-TP

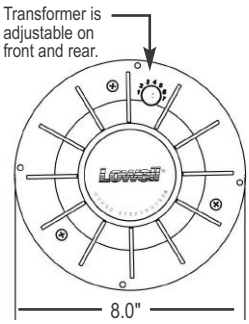

LUH-BOX


LUH-RIB

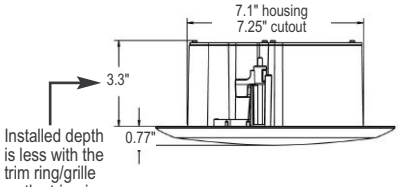
Horn Assembly

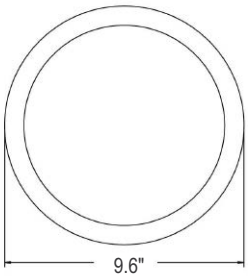
Assembly
Without Trim Ring or Grille





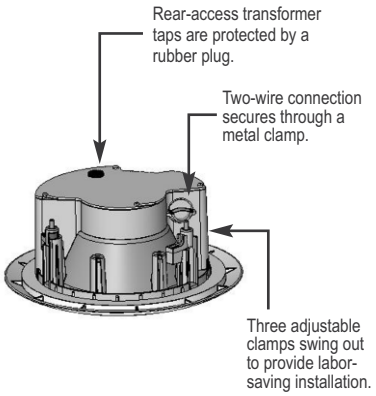
Assembly
with Trim Ring and Grille





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

Rear
Connection

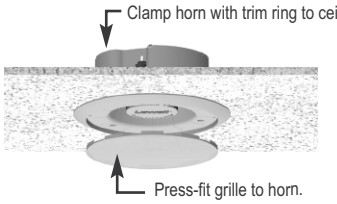


UL Approved Installation — Methods & Accessories

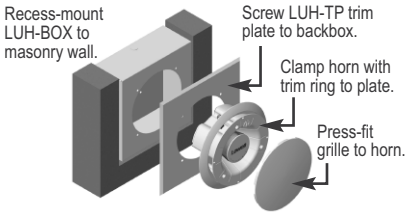
Installation Method	*Grille*	*Backbox / Trim Plate*	*T-bridge*
Open Installation	Press-fit aluminum grille* OR no grille	N/A	N/A
Drywall	Press-fit aluminum grille	No backbox	N/A (existing drywall) LUH-RIB***
Lay-in Tile Ceiling	Press-fit aluminum grille	No backbox	LUH-TBAR**
Masonry	Press-fit aluminum 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).*

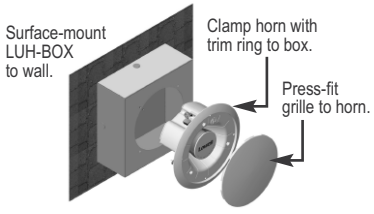
Lay-in Tile Ceiling or Drywall: horn with trim ring clamps to ceiling (tile bridge is recommended for acoustic tile). Grille press-fits to horn assembly. No visible screws.



Masonry: 10.5" square x 4"D stainless steel backbox mounts into masonry wall. LUH-TP trim plate 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.



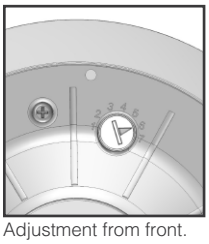
Other Installations and accessories not evaluated or approved by UL

Horn Model LUH-15T 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. The LUH-VRG grille 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).

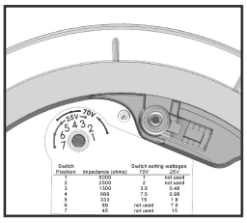
Installation Method	*Grille*	*Backbox / Trim Plate*	*T-bridge*
Open Installation	LUH-VRG vandal-resistant grille*	N/A	N/A
Drywall	LUH-VRG vandal-resistant grille	No backbox	N/A (existing drywall) LUH-RIB***
Lay-in Tile Ceiling	LUH-VRG vandal-resistant grille	No backbox	LUH-TBAR**
Masonry	LUH-VRG vandal-resistant 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.



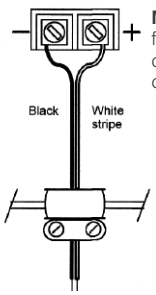
Adjustment from rear (under rubber plug).

Switch Position	*Impedance*	*Watts@ 70V*	*SPL@10ft. 70V*	*Watts@ 25V*	*SPL @10-ft 25V*
1	5000	0.9	94dB*	NOT USED	---
2	2500	1.8	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*

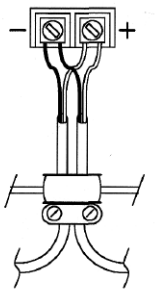
* 3dB increment rating with a sweep sine-wave signal source 0 flat weight SPL meter.

** **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

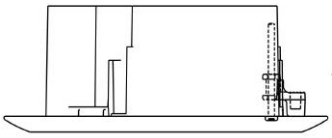


Model LUH-15T ships ready for hookup with a 2-conductor cable exiting through a rear cable clamp.

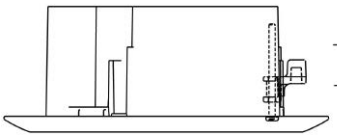


For supervised system applications, the LUH-15T is equipped with an internal series connected 250V DC blocking capacitor (10 uf NP) with maximum supervisory voltage of 100VDC. Connections for supervised systems typically utilize an "in/out" wiring scheme to maintain supervision on all wiring external to the loudspeaker connections. *Requires removal of rear cover to access loudspeaker terminals.*

Mounting Clamps (screwdriver-adjustable)



CLAMPS (as shipped): The out-of-box position of clamps 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).

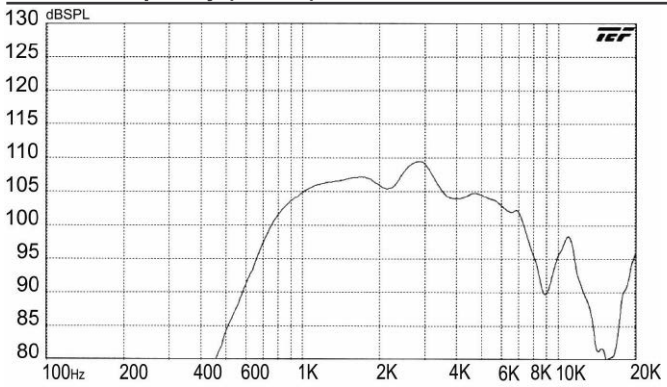
Physical

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)

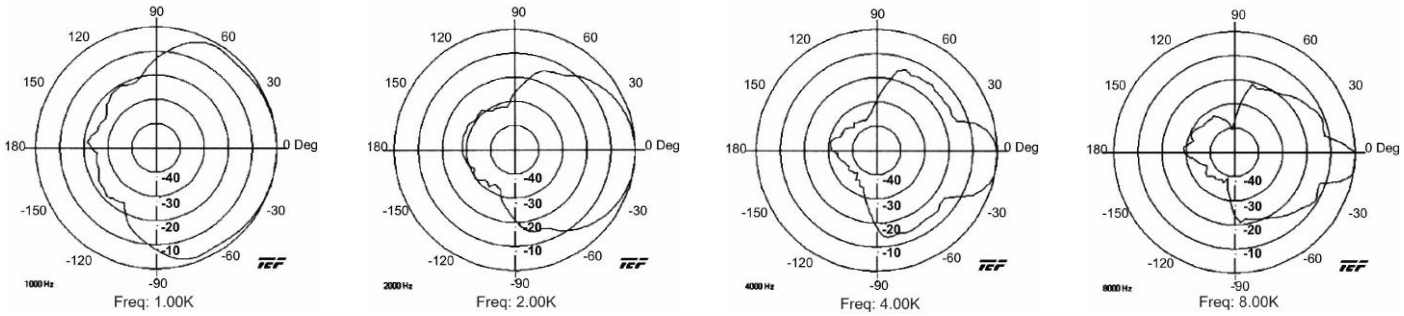
Performance

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 @ .9, 1.8, 3.8, 7.5, 15W (adjustable front and rear. Rear features a rubber plug)
Capacitor	DC blocking series connected (10 uf NP)
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



A & E Specifications

The re-entrant horn loudspeaker shall be AVLELEC Model LUH-15T. 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 re-sponse shall be 740Hz–7.4kHz (+/–6dB). Sound pressure level shall be 105dB (1W1M) average, 116.8dB SPL (max) 15W/1M cal-culation based on power rating and measured sensitivity. Dispersion shall be 80 degrees conical @2000Hz (-6dB). Unit shall include a 70/25V transformer with taps selectable on front and rear of horn. Horn shall include a connected DC blocking capacitor (10 uf NP) for supervised system applications and will 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 neutral 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).

Optional Accessories:

- Using the supplied trim ring/grille, the horn shall clamp mount to recess/surface backbox Model LUH-BOX.
- Using vandal-resistant grille Model LUH-VRG, the horn shall clamp mount to recess/surface backbox Model LUH-BOX.
- For recessed applications trim plate Model LUH-TP shall also be specified.
- For acoustic tile applications tile bridge Model LUH-TBAR shall be specified.

Scope of Performance & Power Tests

AVLELEC drivers and loudspeaker systems are tested to provide specifiers and contractors with data that reflects the performance of production products. Testing equip-ment 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 Angle s: 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.