

# OUT650



## Indoor/Outdoor Speakers

### Introduction

Congratulations and thank you for purchasing Knoll indoor outdoor speakers. These speakers were specifically engineered to sound great in the rain, snow, desert heat, saltwater or climate controlled home. When installed correctly, these speakers will give years of enjoyment. To obtain the full potential of your new speakers, please read all instructions before installing the speakers. If you do not have the necessary skills to install the speakers yourself, contact your authorized Knoll dealer for installation options.

### Parts List

Each OUT650 speaker box includes the following:

- (2) Knoll indoor outdoor speakers
- (2) Powder coated aluminum grilles
- (2) Powder coated U brackets
- (4) Color matched threaded knobs
- (8) Clear plastic stick on feet

You'll appreciate Knoll's speakers as they provide top-of-the-line performance and enjoyment value especially when installed by skilled professionals. Custom installers can help design the system you've been looking for by coordinating their efforts with architects, interior designers, and electricians to ensure perfect engineering and performance in your home theater.

In the capable hands of a custom installer, special devices like those supplied by Knoll can make the most sophisticated audio/video systems easy-to-use.

### Speaker Placement

The location of the speakers should be determined by considering your primary listening location and aesthetic values. When mounting outdoors it is always best to place the speakers out of direct rainfall and sunlight when possible. For best results, contact your Authorized Knoll Dealer for advice.

**\* Note: This product may contain lead that some states have determined are harmful. Wash your hands after touching this product.**

### Distributed Audio Placement

**Warning: Never mount the OUT650 speaker with the front facing up as water can directly enter the cabinet through the port openings.**

Locate the speakers above the primary listening area and angle the tweeter(s) toward the listening area. Ideally the speakers are placed about 8-12 feet apart on a wall or under a soffit. If there are "hot spots", consider adding additional speakers for more uniform sound dispersion.

### Surround Speaker Placement

Your Knoll speakers can be used as surround and front speakers in your home theater on the ceiling or wall. The proper placement of surround speakers is very room dependent. If you are unsure about where to locate your surround speakers for best performance, contact your Knoll dealer for advice.

When mounting your surround speakers in the ceiling or wall, locate the speakers 2 to 6 feet behind your listening position. The speakers should be separated anywhere from 6 to 20 feet apart center to center. Adjust the level controls on your receiver or processor so that all the speakers produce the same SPL reading.

### Wire Sizes

We always advise using fire-rated speaker wire when installing wires inside the wall (check with local authorities). As a general rule, the wire cable impedance should never be more than 10 percent of the speaker impedance. For runs less than 50 feet use minimum size 18-gauge wire. For runs 50 to 100 feet use minimum size 16-gauge wire. For longer size runs use 12 or 14 gauge wire.

In general the larger wire size used will result in better sound quality. While using insufficient gauge wire may be acceptable to some people, the resulting sound will be less dynamic than if better, larger cable (smaller gauge numbers) is used.

### Mounting using the U bracket (included)

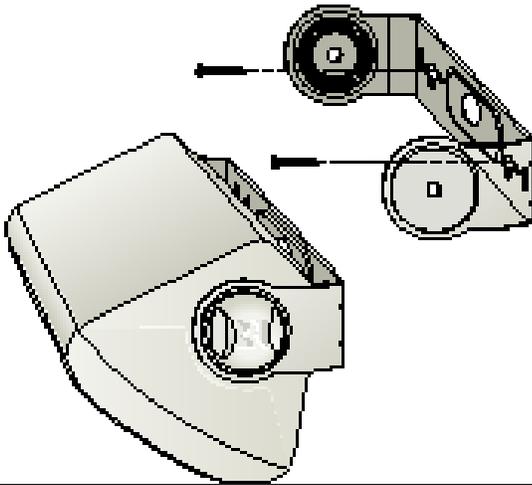
The OUT650 indoor outdoor speakers are shipped with mount brackets that allow vertical or horizontal speaker placement. The brackets should be mounted using a level to assure correct positioning. After screwing the U bracket onto the mount surface, give it a good tug to make sure it can more than support the weight of the OUT650 speakers.

Some places require a completely separate secondary safety support to the speaker. A low cost secondary

support could be a fishing leader attached to the U bracket and wall.

Connect the speaker wires to the gold binding posts. Polarity is very important as wrong polarity will give lousy sound quality and especially poor bass.

Secure the speaker to the U bracket with the threaded knobs. Aim the speakers to the correct angle, then hand-tighten the knobs.



NEVER use pliers or power tools to tighten the knobs.

## Speaker Specifications

### OUT650

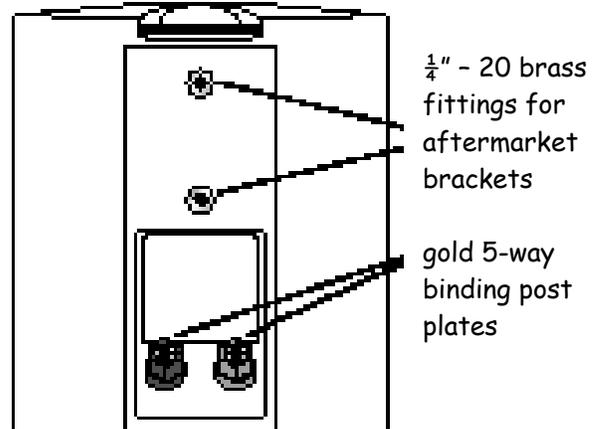
Speaker Design:	Indoor/outdoor bass reflex ABS plastic speaker system, weather resistant design.
Tweeter:	1"(25mm) silk dome, with neodymium magnet and wave guide.
Woofer:	6-1/2"(165mm) kevlar cone with butyl rubber surround.
Frequency Response:	50Hz to 20kHz $\pm$ 3dB
Impedance:	8 $\Omega$
Power Handling:	5 to 120 watts
Efficiency:	90dB @ 1W/m
Grills:	Powder coated aluminum
Dimensions:	12" H, 8 1/2" W, 7 3/4" D
Weight (each):	7.95 lbs (3.6 kg)

## Speaker Warranty

Knoll Systems warrants its speakers sold in the USA and Canada by authorized Knoll dealers to be free of defects in materials and workmanship. This warranty extends for five full years from the date of purchase by the original consumer. Any products returned to Knoll Systems and found to be defective by Knoll Systems within the warranty period will be repaired or replaced at Knoll Systems option, at no charge. Knoll Systems will not be responsible for the actual cost of installation or removal of the product, nor for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights. You may have additional legal rights that vary from state-to-state.

## Mounting using aftermarket brackets

More precise aiming of the OUT650 can be accomplished by using ball joint and other aftermarket mount systems. Dual 1/4"- 20 brass inserts are fitted into the OUT650 for aftermarket brackets.



## Technical Assistance and Service

The Technical Assistance Department at Knoll is available at 604 272-4555 to answer any questions concerning the operation and installation of your speakers, between the hours of 9 a.m. and 5 p.m. Pacific time, Monday through Friday, except holidays.

In the event that your unit should need repair or service you may return the unit to your authorized dealer or use the following guidelines:

- 1) Be prepared to state the model number and or serial number, date of purchase and dealers name and address when calling.
- 2) Contact Knoll directly at 604 272-4555 for a return authorization number (*YOU MUST HAVE PRIOR AUTHORIZATION TO RETURN YOUR UNIT*).
- 4) The original packaging must be used. If the original packaging is not available, replacements can be obtained from Knoll for a small fee or you can use other packaging so long as product damage from shipping will not occur.
- 5) Ship the product via United Parcel Service, Federal Express.
- 6) **Print the return authorization number on the outside of the box.**
- 7) Ship to:

Attn: Technical Assistance Department  
Knoll Systems  
145 Tye Drive  
Point Roberts WA 98281

Or  
Knoll Systems  
11791 Machrina Way, #110  
Richmond BC Canada V7A 4V3

8) **FREIGHT COLLECT SHIPMENTS WILL BE REFUSED!** You are **responsible** for the freight charges when returning product. If the unit is found to have a warranty problem we will pay the return freight charges.

