

# Model EPS2108

## Operation Manual



# **Larson Davis**

## **EPS2108/EPS2108-2/EPS2108-ICP Environmental Shrouds**

### **Technical Reference Manual**

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# Model EPS2108 Environmental Shroud

The Model EPS2108 family of environmental shrouds provide a complete weather protection system for use with Larson Davis ½ inch preamplifiers and microphones. They are designed to be mounted onto a standard instrument or camera tripod having a 1/4-20 connection stud. The variations between them are to accommodate different microphone preamplifiers as indicated in the table below

Model Number	Preamplifiers
EPS2108	PRM828, PRM900C, PRM902, PRM903
EPS2108-2	PRM831, PRMLxT1, PRMLxT2, PRMLxT1L, PRMLxT2L
EPS2108-ICP	PRM426, 426E01 (ICP powered)

Perfect for longer-term measurements in unpredictable weather, its special windscreen material and configuration protect the microphone from precipitation. The shroud seals the preamplifier in a desiccated chamber, thus preserving performance in high humidity environments. The desiccant volume is many times greater than that of in-line desiccant cartridges, for lasting protection without interference between the microphone and preamplifier. The shroud is intended to work with Larson Davis back-vented microphones. The static air pressure reaches the back of the microphone from an opening to the outside air somewhere below the shroud. This opening needs to be provided in the installation. Moist air must pass by the desiccant, where it is dried, then through the preamplifier to the back of the microphone. A small O-ring is included to seal the connection between the back-vented microphone and preamplifier.

## Innovative Windscreen

The Model EPS2108 special acoustic foam windscreen protects the microphone from rain, sleet, and snow, while the birdspikes deter

winged intruders. Of course, some moisture and airborne pollutants may still reach the microphone, but the outstanding resistance of Larson Davis microphones to acids and other corrosive agents averts any deterioration of performance. The shroud works best mounted in a vertical position with the birdspikes up. In this position rain and birds are effectively repelled.

## Desiccant Shroud

The excellent temperature stability of the Larson Davis microphone preamplifiers allows operation in a wide temperature range **without** an internal heater. The cable to preamplifier connection is protected by the EPS2108-ICP shroud, which houses desiccant cartridges. Under wide ranging conditions, the cartridges can last many weeks. When they lose their vivid blue color and turn pale, the desiccant may be regenerated in a 250° F oven.



**Figure 1 EPS2108 Environmental Shroud**

## Using the Model EPS2108

Some steps must be taken to initially assemble the Model EPS2108, preamplifier and microphone. However, once configured, the shroud can be left in place during calibration or transport. The following sections describe the assembly of the EPS2108 and EPS2108-ICP respectively.

### Model EPS2108 Assembly

1. Remove the top and bottom of the Model EPS2108 by unscrewing them from the clear tube.
  2. If the desiccant cartridges are inside the clear tube, extricate them. Push the cable end up through the clear tube and through the top. *See step 1.*
  3. Replace the bottom by screwing the clear tube into it with the cable in the slot of the bottom. *See step 2.*
  4. Insert the desiccant cartridges in two layers of 5 around the microphone cable and re-
5. place the top by screwing it onto the clear tube. *See step 3.*
  6. Connect preamplifier and cable, then push the preamplifier gently back into the top of the EPS2108. The cable/preamp connection should be fully into the top.
  7. Place the small O-ring on the preamplifier, pushing it beyond the threads until it rests on the preamp shoulder, and thread the microphone onto the preamplifier. *See step 4.*
  8. The windscreen cage assembly can now be slipped onto the preamplifier. Tighten the plastic thumbscrew. *See step 5.*
  9. To calibrate the microphone, pull wind-screen cage off the preamplifier.
  10. To replace the desiccant, perform steps 1, 2 and 4. The desiccant may be reactivated by drying it in a 250° F oven for a few hours until the vivid blue color is restored.

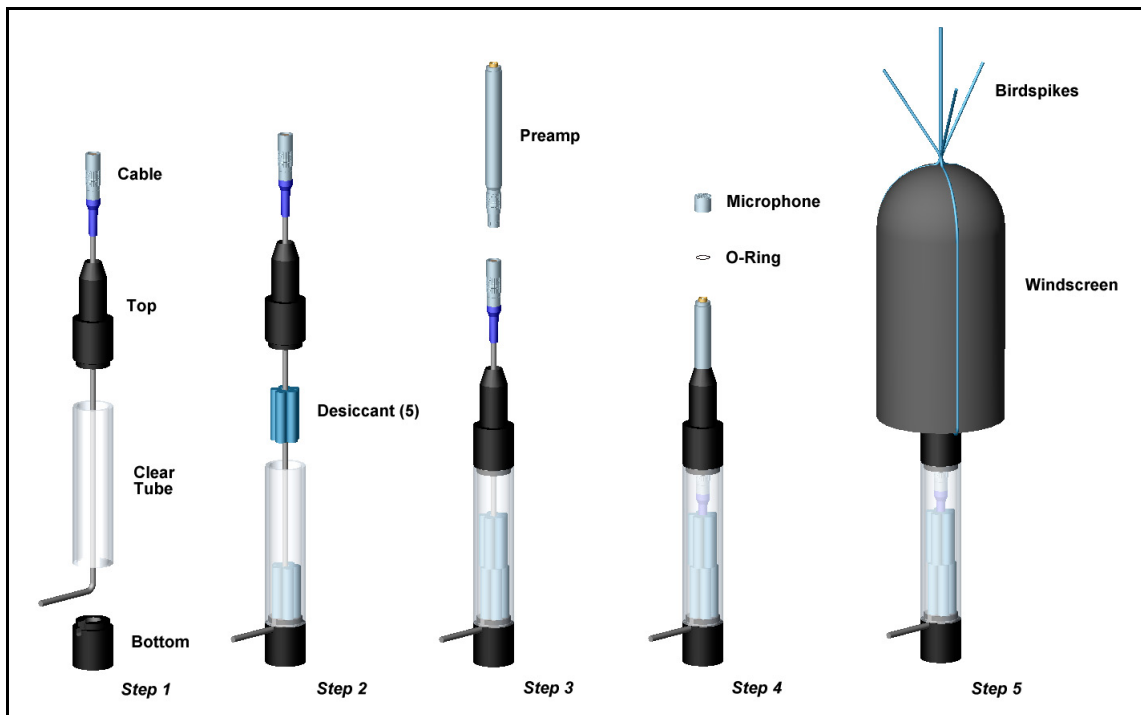


Figure 2 EPS2108 Assembly

## EPS2108-2 Assembly

1. Remove the top and bottom of the Model EPS2108-2 by unscrewing them from the clear tube. If the desiccant cartridges are inside the clear tube, extricate them. Push the cable end up through the clear tube. *See step 1*

Replace the bottom by screwing the clear tube into it with the cable in the slot of the bottom. *See step 2*

2. Insert the desiccant cartridges in two layers of five around the microphone cable and replace the top by screwing it onto the clear tube. *See step 2*

3. Connect the preamplifier and cable, then push the preamplifier gently back into the top of the EPS2108-2. The cable/preamp connection should be fully into the top. *See step 3*

4. Place the small O-ring on the preamplifier, pushing it beyond the threads until it rests on the preamp shoulder, and thread the microphone onto the preamplifier. *See step 4*

5. The windscreen cage assembly can now be slipped onto the preamplifier. Tighten the plastic thumbscrew. *See step 5.*

6. To calibrate the microphone, pull the windscreen cage off the preamplifier.

7. To replace the desiccant, remove the windscreen cage and unscrew the top from the clear tube. The desiccant may be reactivated by drying it in a 250° F oven for a few hours until the vivid blue color is restored.

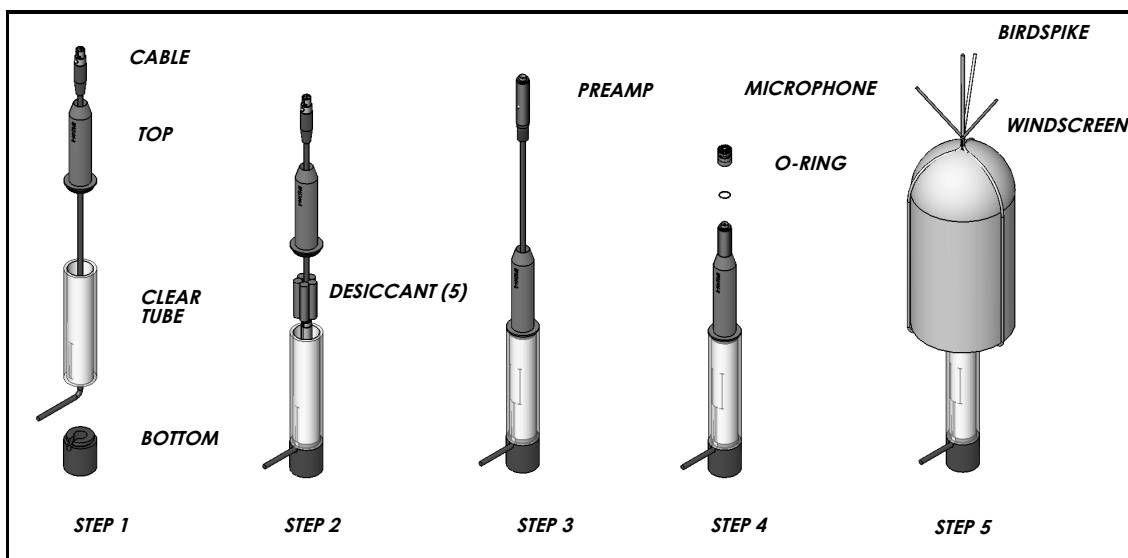


Figure 3 EPS2108-2 Assembly

## EPS2108-ICP Assembly

1. Remove the top of the Model EPS2108-ICP by unscrewing it from the clear tube. If the desiccant cartridges are inside the clear tube, extricate them. Remove the bottom by unscrewing it from the clear tube. Push the cable end up through the clear tube. *See step 1*
2. Replace the clear tube by screwing it onto the bottom. Insert the desiccant cartridges in two layers of 5 around the microphone cable. *See step 2*
3. Connect the preamplifier to the cable. *See step 3*
4. Start the preamplifier up into the top of the EPS2108-ICP. Pull the preamp up until it snaps into the top. *See step 4*
5. Replace the top by screwing the clear tube into the

top. Place the small O-ring on the preamplifier, pushing it beyond the threads until it rests on the pre-amp shoulder, and thread the microphone onto the preamplifier. *See step 5*

6. The windscreen cage assembly can now be slipped onto the preamplifier. Tighten the plastic thumbscrew. *See step 6*

To calibrate the microphone, pull the windscreen cage off the preamplifier.

To replace the desiccant, unscrew the clear tube from the top.

The desiccant may be reactivated by drying it in a 250° F oven for a few hours until the vivid blue color is restored.

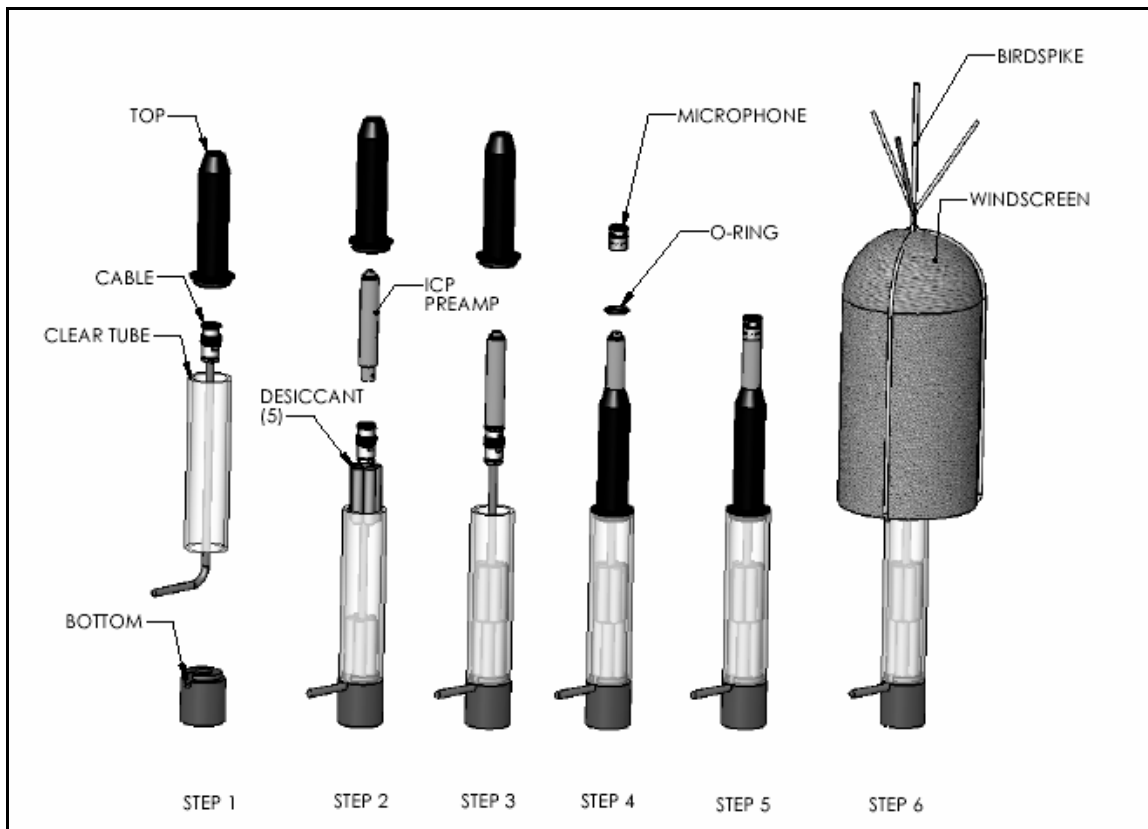


Figure 4 EPS2108-ICP Assembly

## Parts and Accessories

Options	Accessories
WS009	Windscreen with birdspikes for EPS2108, EPS2108-2 and EPS2108-ICP
WS009-F	Replacement foam insert for WS009
DSC003	20 Replacement desiccant cartridges
OR001	3 Replacement O-rings for 1/2 inch preamplifier
TRP001	Instrumentation/camera tripod

**Table 1: Parts and Accessories**

## Specifications

Response	Maintains Type 1 random response with LD random microphones and Type 1 free-field response with LD free-field microphones	
Environmental Protection	From -40° C to 60° C; 0 - 100% R.H. using proper preamplifier and 10 reusable desiccant cartridges	
Electrostatic Actuator	none	
Dimensions	Windscreen/birdspikes	height 31.5 cm (12.4") O.D. 10.2 cm (4.0")
	Total Height	EPS2108: 50.8 cm (20.0") EPS2108-2 47.5 cm (18.7") EPS2108-ICP: 47.5 cm (18.7")
	Desiccant Chamber	height 12.7 cm (5.0") O.D. 1.25" I.D. 1.0"
	Mounting	1/4"- 20 thread (female)
Weight	Windscreen/birdspikes	128 g (4.4 oz.)
	Body	113 g (4.0 oz.)
	Desiccant	20 g (0.8 oz.)
	Total	261 g (9.2 oz.)

**Table 2: Specifications**

**Caution:** Although non-toxic, the desiccant cartridges are not edible. Keep away from children and pets.



# EPS2108 Dimensions

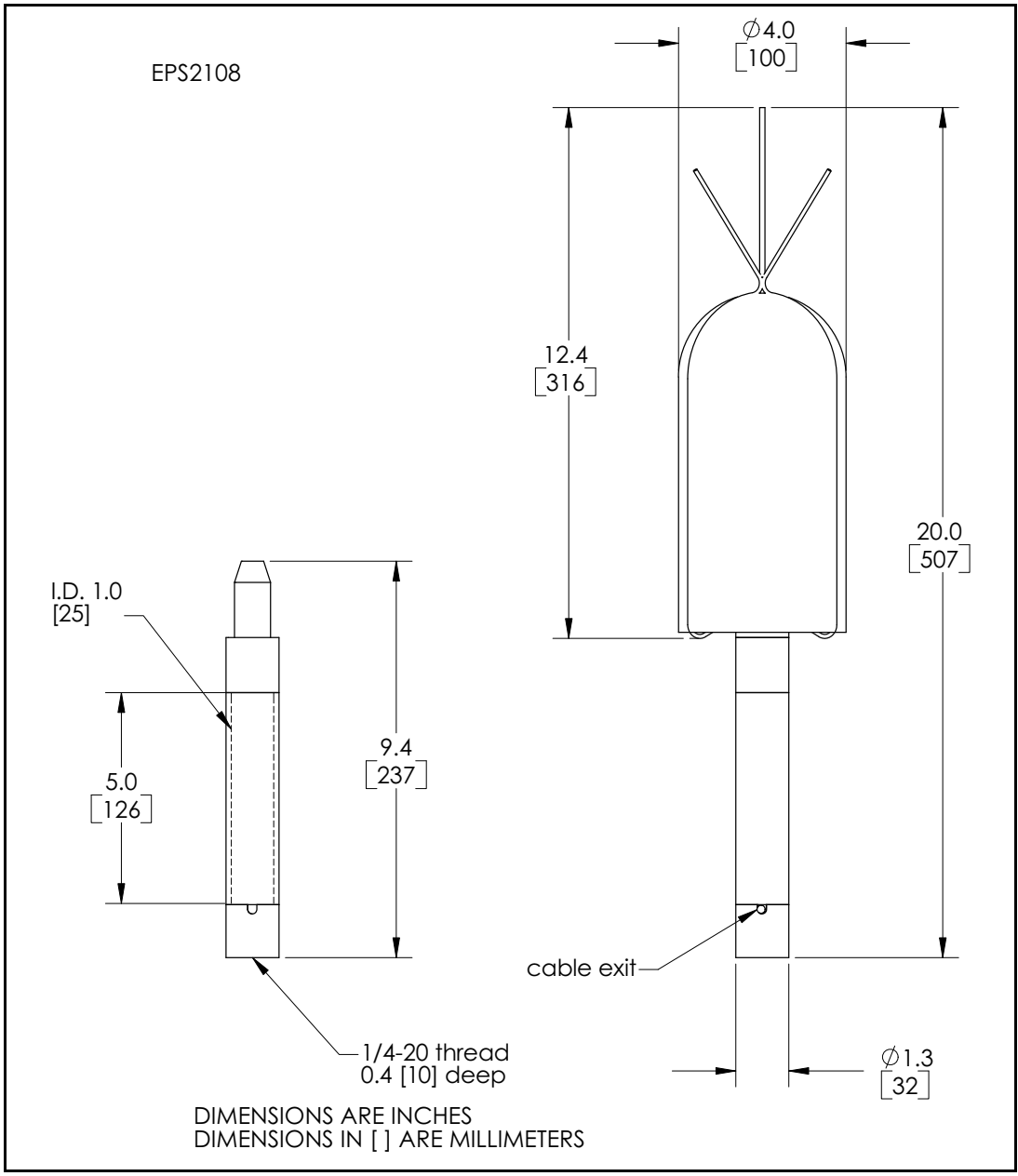


Figure 5 EPS2108 Dimensions

## EPS2108-2 Dimensions

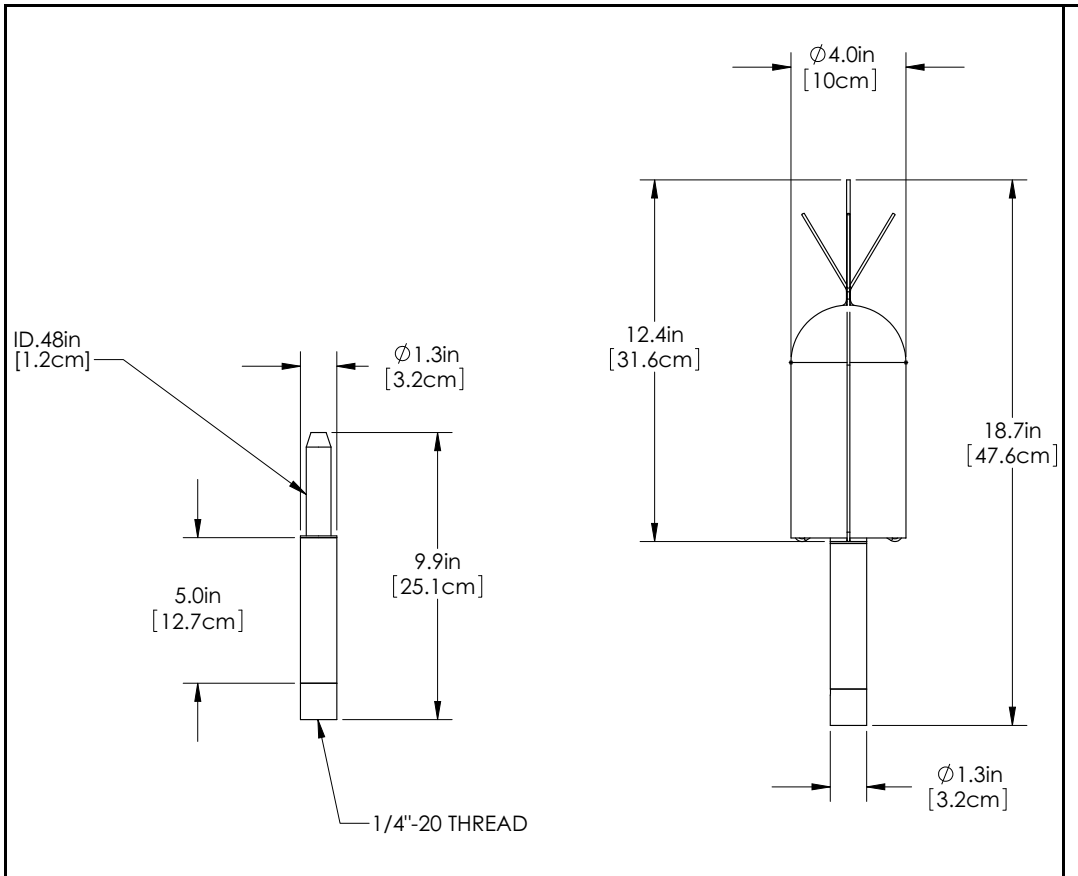


Figure 6 EPS2108-2 Dimensions

## EPS2108-ICP Dimensions

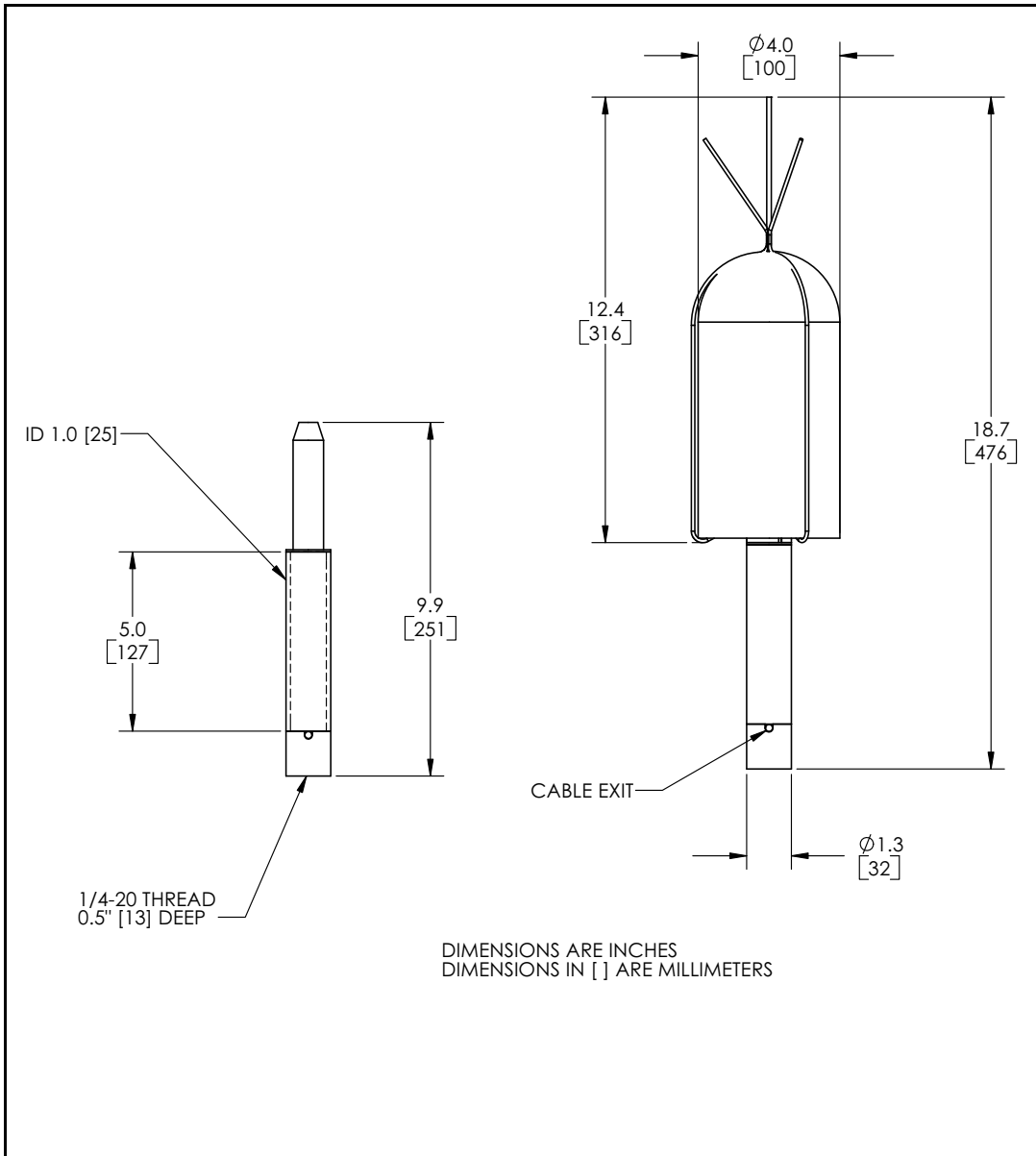


Figure 7 EPS2108-ICP Dimensions

# Directional Response

## Reference Direction

The reference direction for the following directional response data is shown in Figure 8.

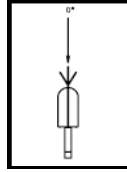


Figure 8 Reference Direction

## EPS2108

### Free-field Microphone 377B02

The directional response data shown in Figure 9 is for an EPS2108 with a 377B02 free-field microphone and a PRM900C microphone preamplifier.

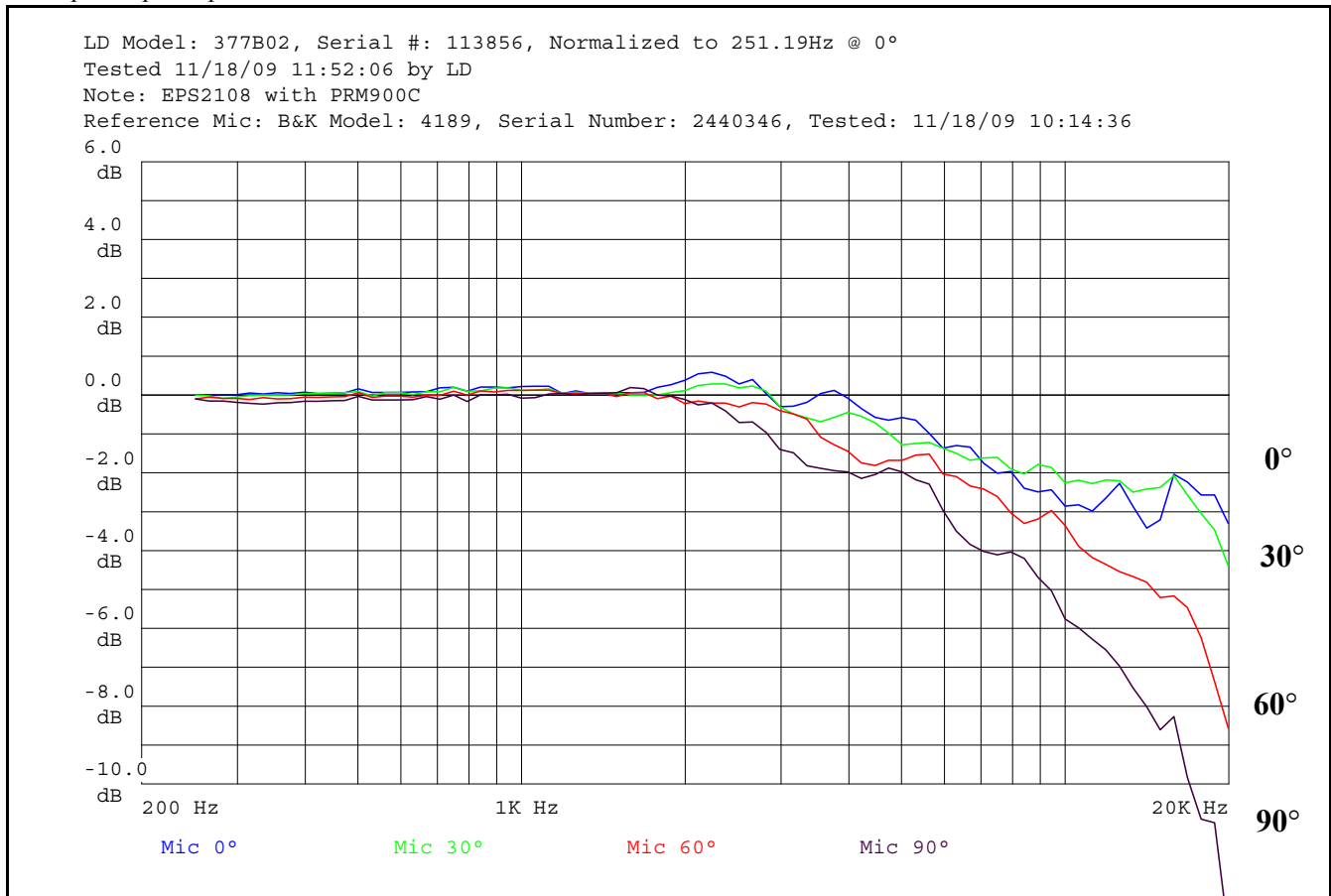


Figure 9 Typical EPS2108 Directional Response with 377B02: 0°, 30°, 60°, 90°



## Random Incidence Microphone 377B20

The directional response data shown in Figure 10 is for an EPS2108 with a 377B20 random incidence microphone and a PRM900C microphone preamplifier.

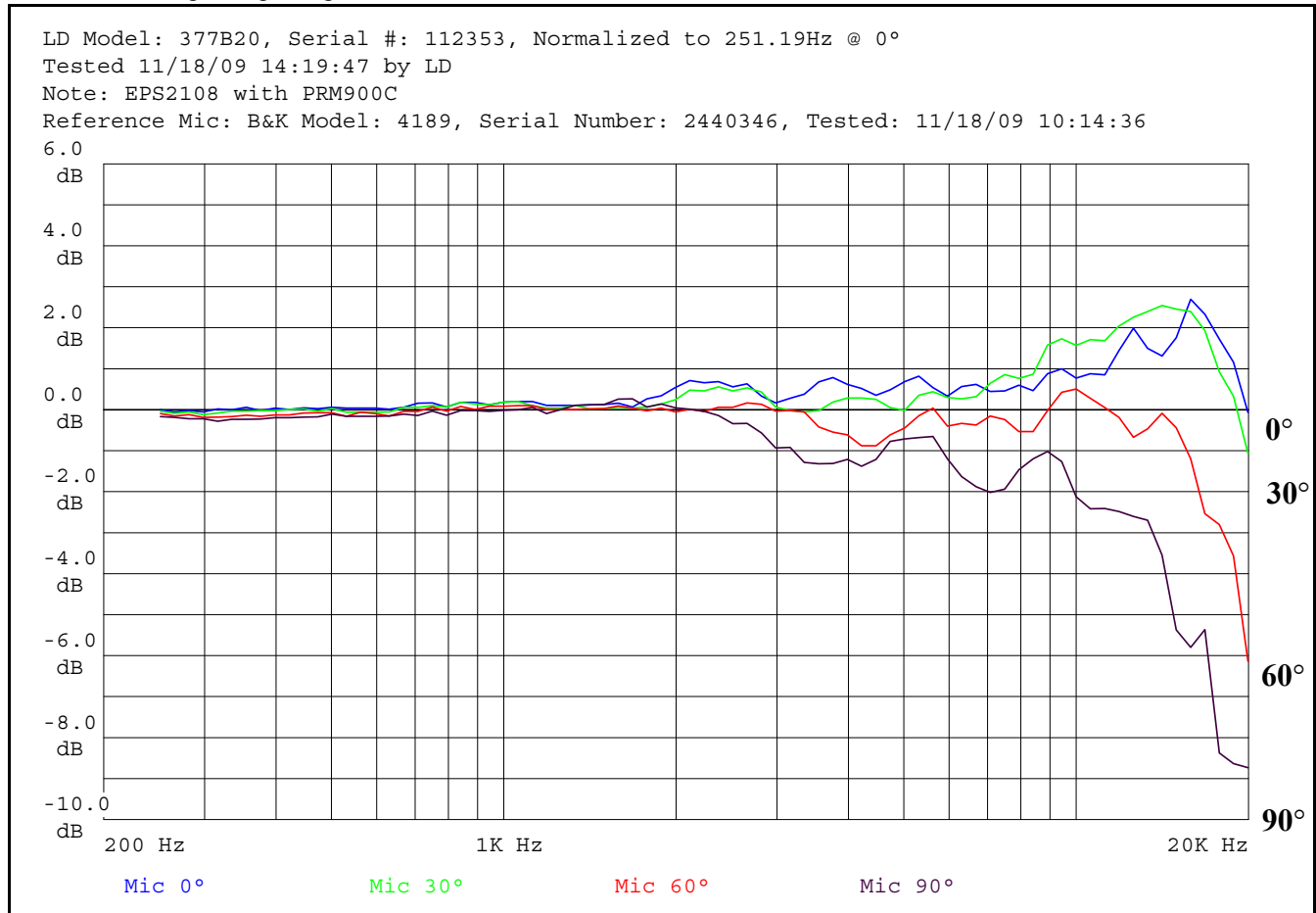


Figure 10 Typical EPS2108 Directional Response with 377B20: 0°, 30°, 60°, 90°



LD Model: 377B20, Serial #: 112353, Normalized to 251.19Hz @ 0°  
Tested 11/18/09 14:19:47 by LD  
Note: EPS2108 with PRM900C  
Reference Mic: B&K Model: 4189, Serial Number: 2440346, Tested: 11/18/09 10:14:36

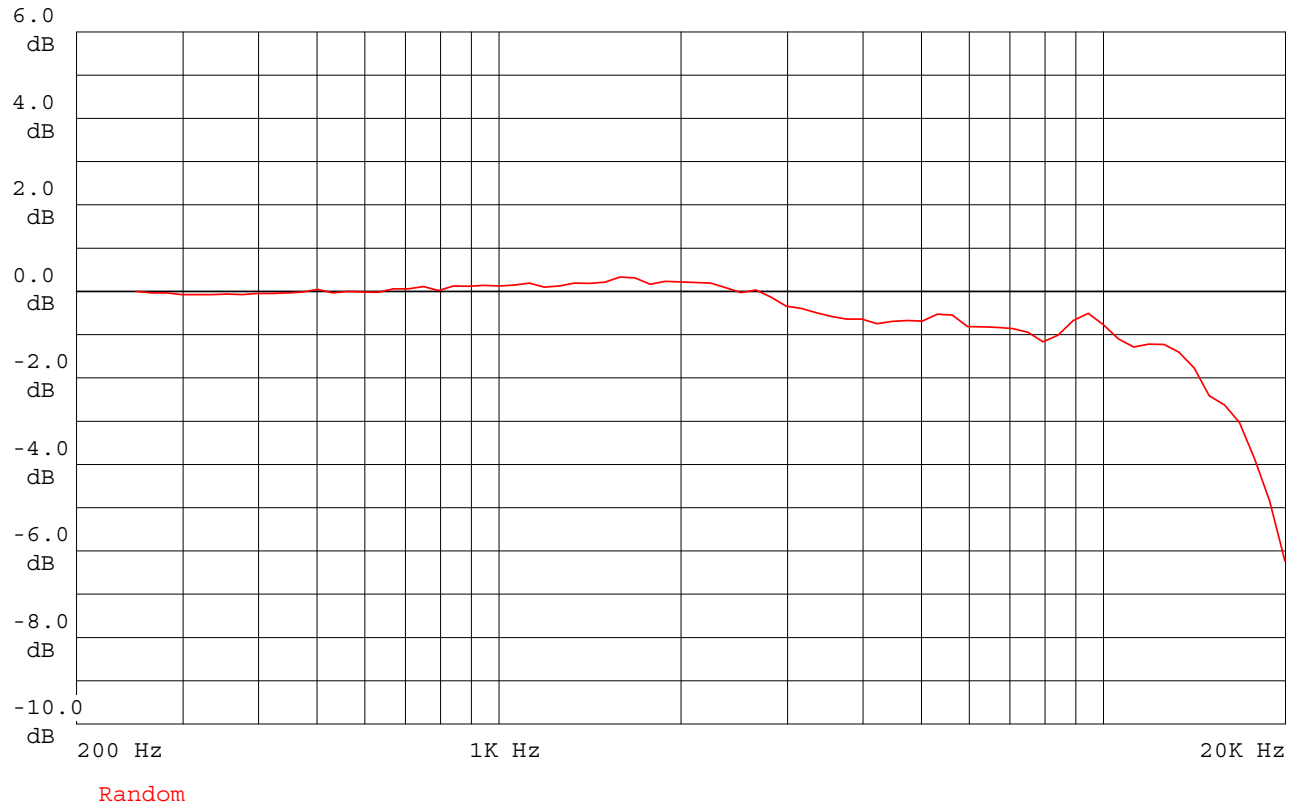


Figure 11 Typical EPS2108 Random Response with 377B20



# EPS2108-2

## Free-field Microphone 377B02

The directional response data shown in Figure 12 is for an EPS2108-2 with a 377B02 free-field microphone and a PRM831 microphone preamplifier.

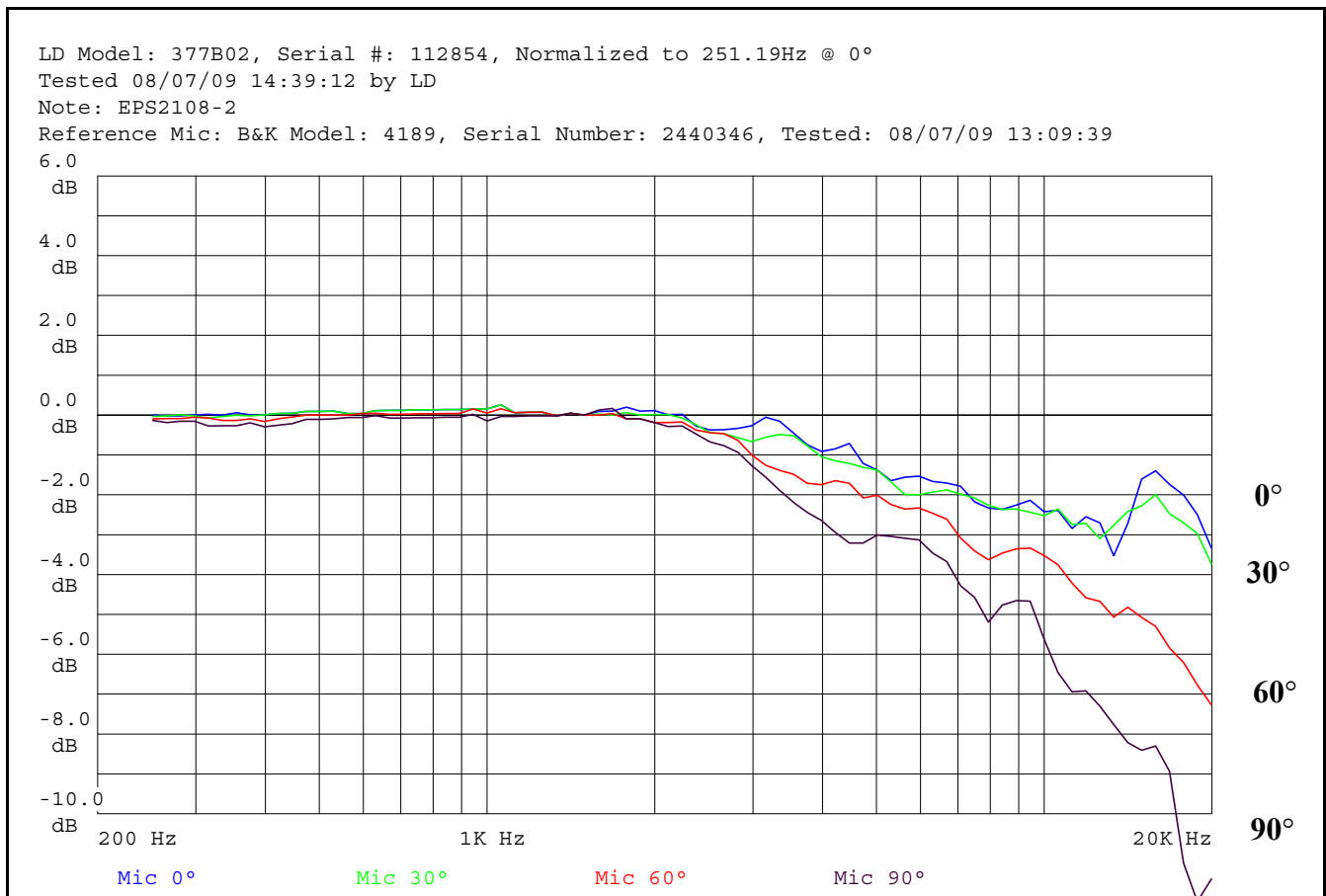


Figure 12 Typical EPS2108-2 Directional Response with 377B02: 0°, 30°, 60°, 90°



## Random Incidence Microphone 377B20

The directional response data shown in Figure 13 is for an EPS2108-2 with a 377B20 random incidence microphone and a PRM831 microphone preamplifier.

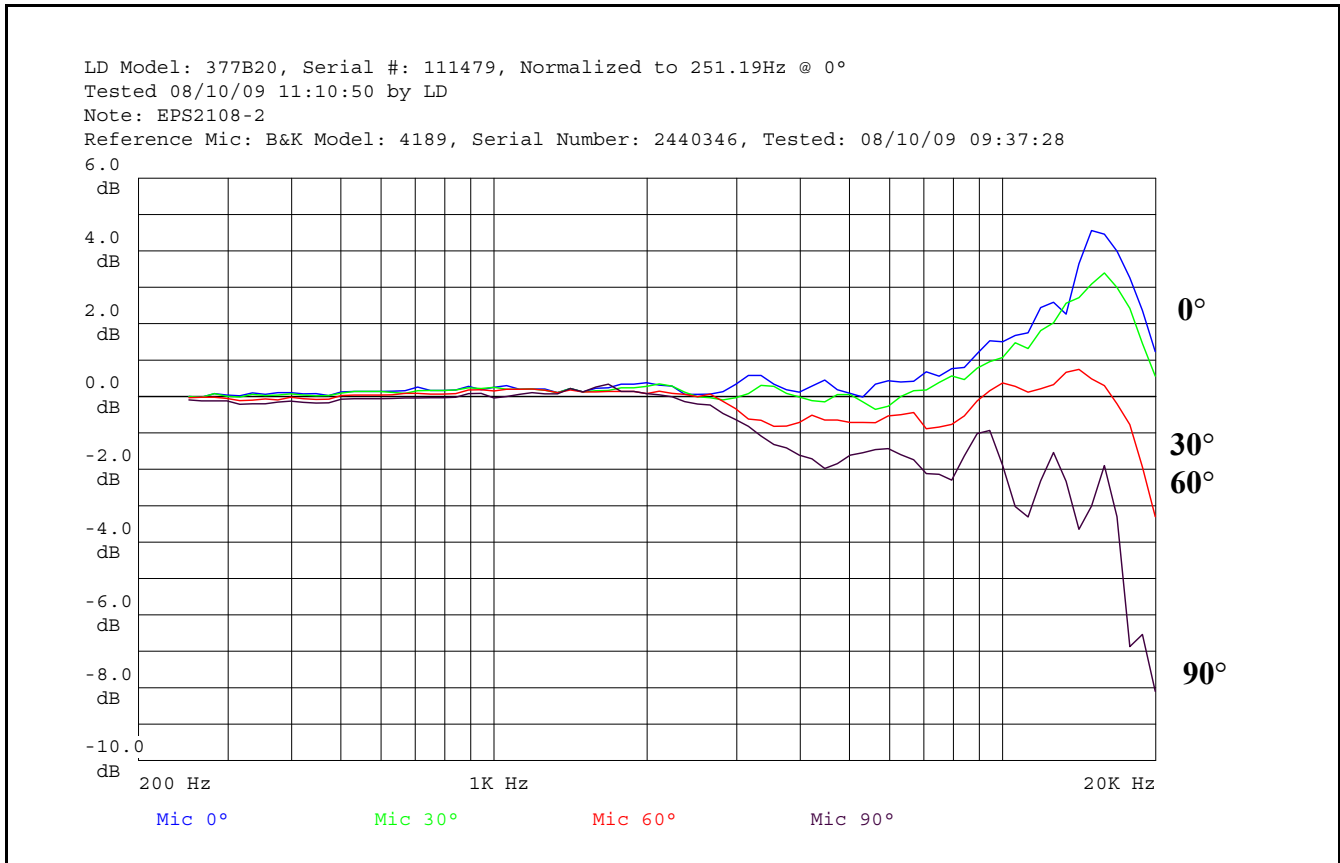
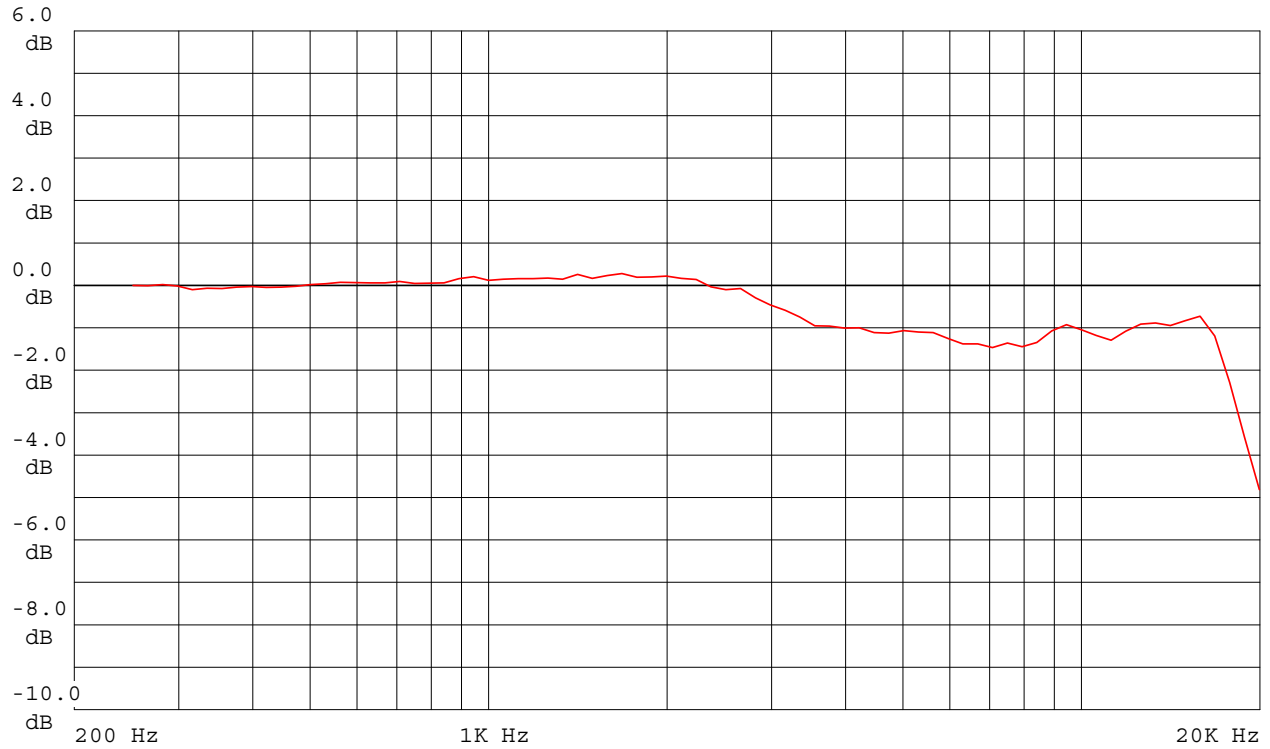


Figure 13 Typical EPS2108-2 Directional Response with 377B20: 0°, 30°, 60°, 90°



LD Model: 377B20, Serial #: 111479, Normalized to 251.19Hz @ 0°  
Tested 08/10/09 11:10:50 by LD  
Note: EPS2108-2  
Reference Mic: B&K Model: 4189, Serial Number: 2440346, Tested: 08/10/09 09:37:28



**Figure 14 Typical EPS2108-2 Random Response with 377B20**

# EPS2108-ICP

## Free-field Microphone 377B02

The directional response data shown in Figure 15 is for an EPS2108-ICP with a 377B02 free-field microphone and a PRM831 microphone preamplifier.

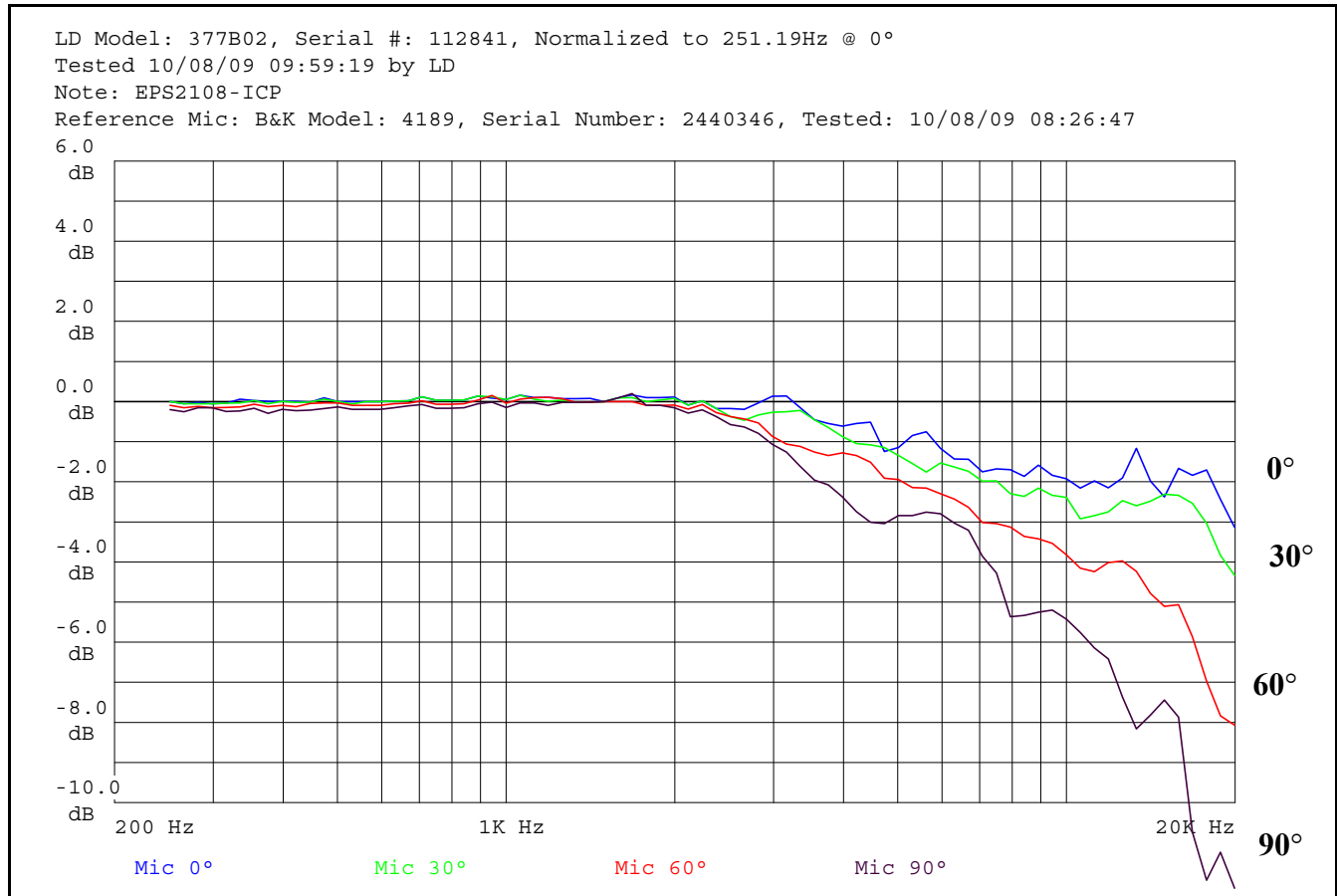


Figure 15 Typical EPS2108-ICP Directional Response with 377B02: 0°, 30°, 60°, 90°



## Random Incidence Microphone 377B20

The directional response data shown in Figure 16 is for an EPS2108-ICP with a 377B20 random incidence microphone and a PRM831 microphone preamplifier.

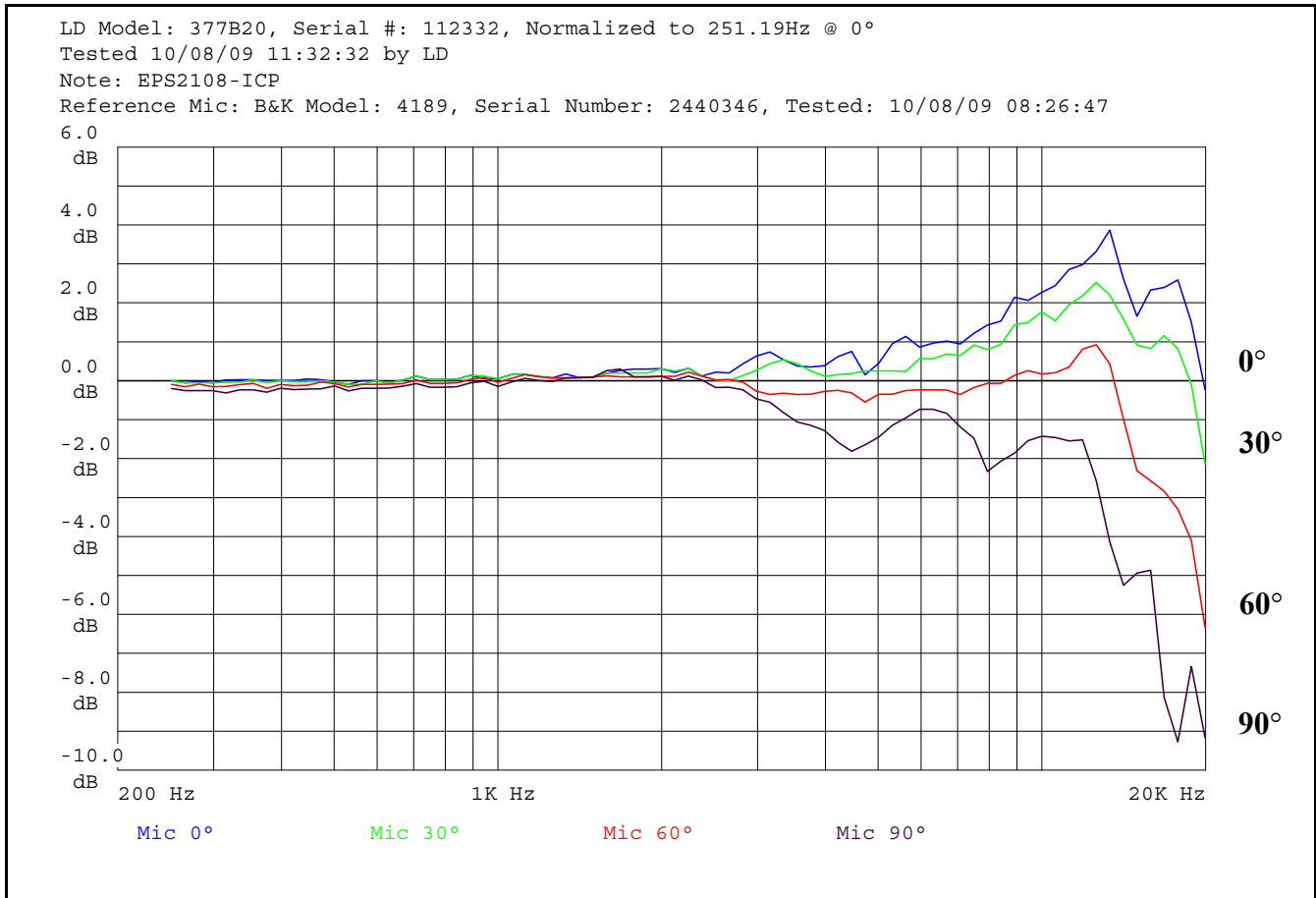


Figure 16 Typical EPS2108-ICP Directional Response with 377B20: 0°, 30°, 60°, 90°





LD Model: 377B20, Serial #: 112332, Normalized to 251.19Hz @ 0°  
Tested 10/08/09 11:32:32 by LD  
Note: EPS2108-ICP  
Reference Mic: B&K Model: 4189, Serial Number: 2440346, Tested: 10/08/09 08:26:47

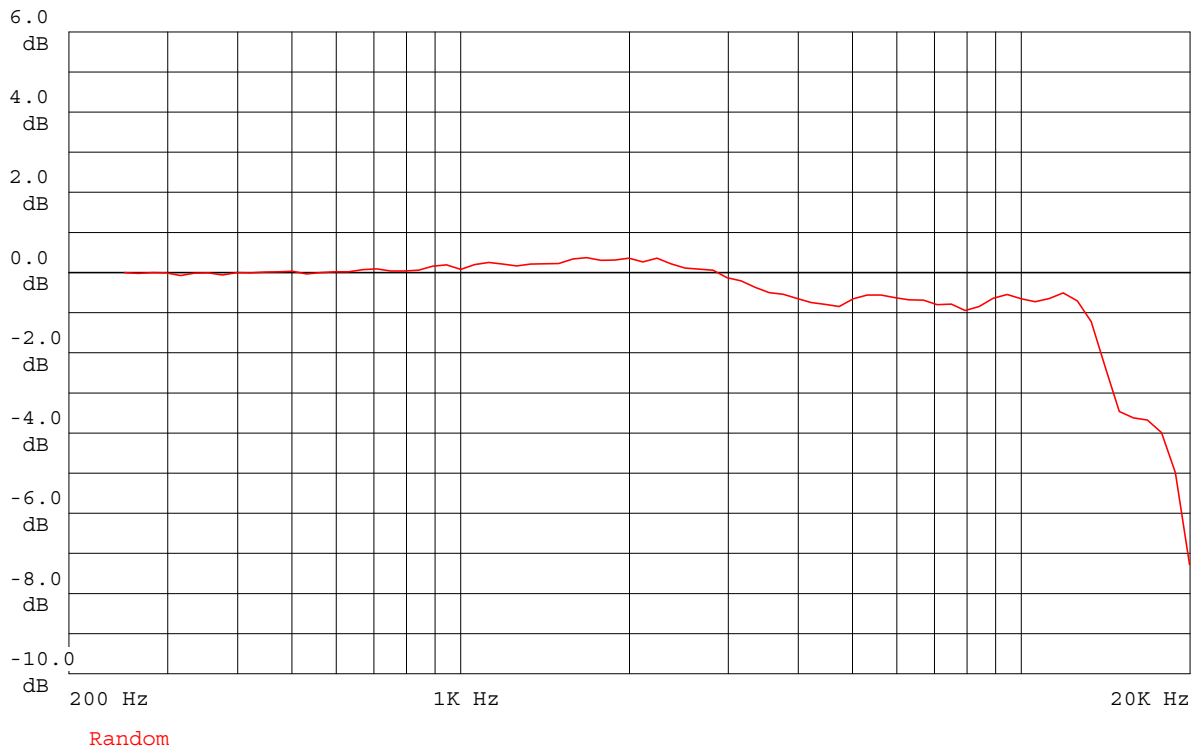


Figure 17 Typical EPS2108-ICP Random Response with 377B20

