Model EPS2106

Environmental Shroud
Technical Reference Manual

Larson Davis

EPS2106/EPS2106-2/EPS2106-ICP Environmental Shrouds

Technical Reference Manual

I2106.01 Rev E

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The EPS2106 Family of Environmental Shrouds

The EPS2106 family of environmental shrouds is a complete weather protection system for use with Larson Davis ½ inch microphones and microphone preamplifiers. They are designed to be mounted onto a threaded 3/4" standard solid wall PVC conduit or similar mating connector. Larson Davis adjustable tripods can also be used with the proper adaptors. The variations between them are to accommodate different microphone preamplifiers as indicated in the table below.

Model Number	Preamplifiers
EPS2106	PRM828, PRM900C, PRM902, PRM903 and PRM905
EPS2106-2	PRM831, PRMLxT1, PRMLxT2, PRMLxT1L and PRMLxT2L
EPS2106-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 EPS2106's 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 EPS2106 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 250º F oven.

Figure 1 EPS2106-2

Using the Environmental Shrouds

Some steps must be taken to initially assemble an environmental shroud, preamplifier and microphone as shown in the diagrams below. However, once configured, the shroud can be left in place during calibration or transport. The following sections describe the assembly of the EPS2106, EPS2106-2 and the EPS2106-ICP, respectively.

EPS2106 Assembly

Remove the top of the EPS2106 by unscrewing it from the clear tube.

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.*

Insert the desiccant cartridges in two layers of 5 around the microphone cable and replace the top by screwing it onto the clear tube. *See step 2.*

Connect preamplifier and cable, then push the preamplifier gently back into the top of the EPS2106. The cable/preamp connection should be fully into the top.

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 preamplier. *See step 3.*

The windscreen cage assembly can now be slipped onto the preamplifier. Tighten the plastic thumbscrew. *See step 4.*

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

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 250º F oven for a few hours until the vivid blue color is restored.

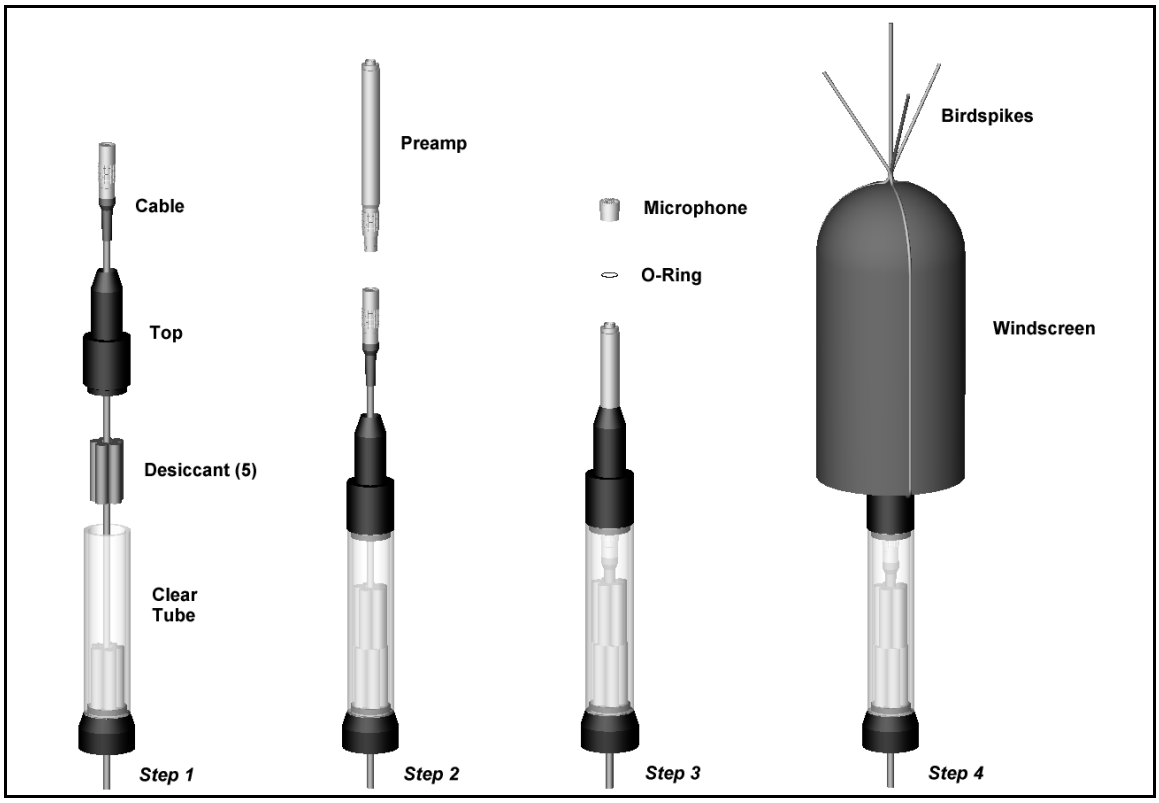

Figure 2 EPS2106 Assembly

EPS2106-2 Assembly

Remove the top of the EPS2106-2 by unscrewing it from the clear tube. 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.*

Insert the desiccant cartridges in two layers of 5 around the microphone cable and replace the top by screwing it onto the clear tube. *See step 2.*

Connect preamplifier and cable, then push the preamplifier gently back into the top of the EPS2106-2. The cable/preamp connection should be fully into the top.

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 preamplier. *See step 3.*

The windscreen cage assembly can now be slipped onto the preamplifier. Tighten the plastic thumbscrew. *See step 4.*

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

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 250º F oven for a few hours until the vivid blue color is restored.

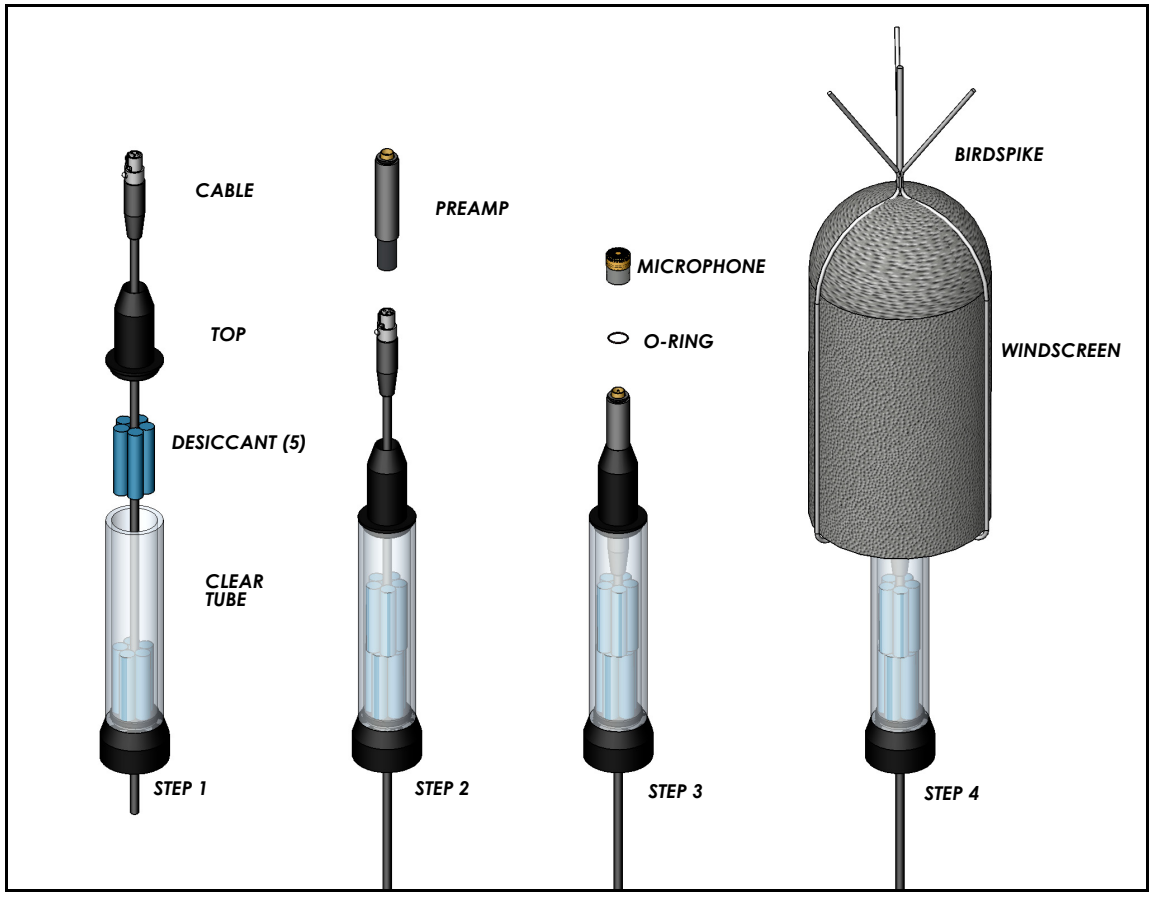

Figure 3 EPS2106-2 Assembly

EPS2106-ICP Assembly

Remove the top of the EPS2106-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.

Remove the blue sleeve from the bottom. Push the cable end up through the bottom. Spring the blue sleeve open enough to put it around the cable with the large end toward the bottom piece of the EPS2106-ICP. *See step 1*

Replace the blue sleeve into the bottom by squeezing its top. Push the cable end up through the clear tube. Replace the clear tube by screwing it onto the bottom. *See step 2*

Insert the desiccant cartridges in two layers of 5 around the microphone cable. Connect the preamplifier to the cable. *See step 3*

Start the preamplifier up into the top of the EPS2106-ICP. Pull the preamp up until it snaps into the top. *See step 4*

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 preamp shoulder, and thread the microphone onto the preamplifier. *See step 5*

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 250º F oven for a few hours until the vivid blue color is restored.

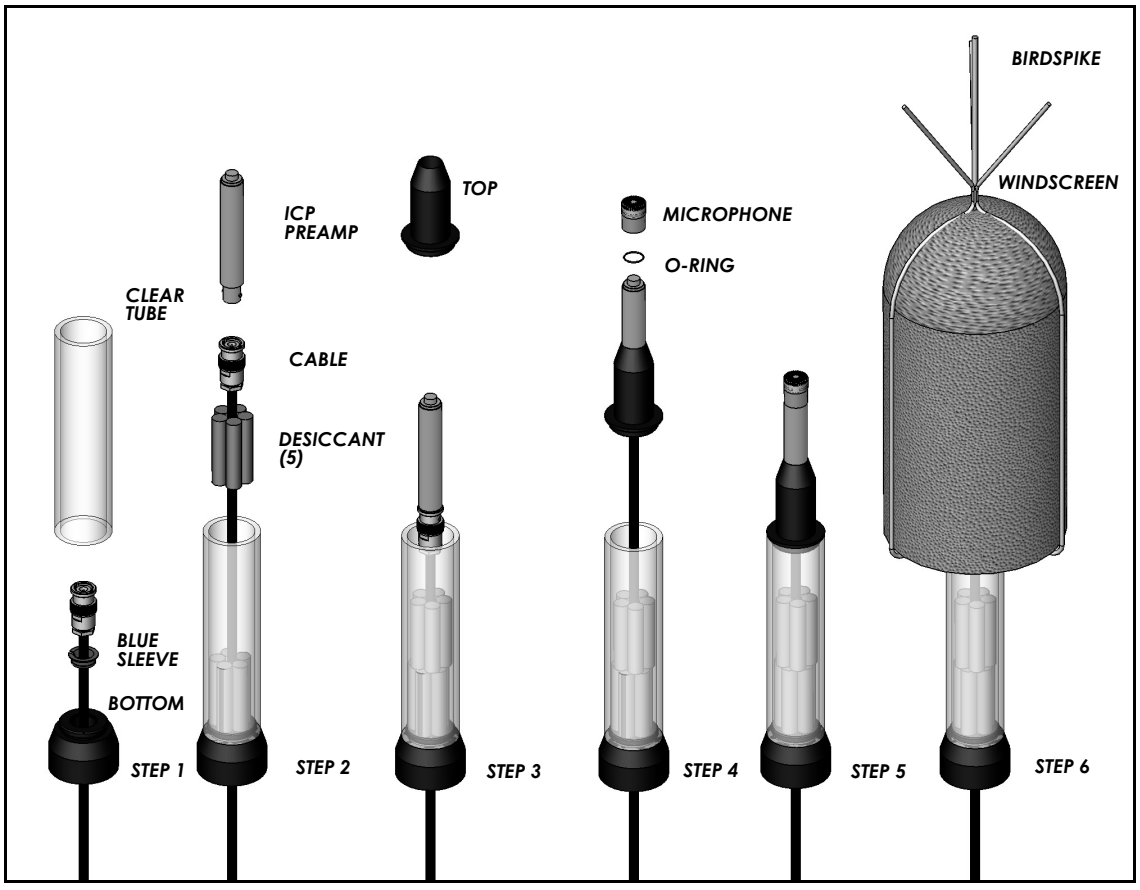

Figure 4 EPS2106-ICP Assembly

Parts and Accessories

Options	Accessories
WS009	Windscreen with birdspikes for EPS2106, EPS2106-2 and EPS2106-ICP
WS009-F	Replacement foam insert for WS009
DSC003	20 Replacement desiccant cartridges
OR001	3 Replacement O-rings for 1/2 inch preamplifier
TRP003	Tripod, maximum height 8 feet, for use with portable noise monitoring systems
ADP034	EPS2106-2 to TRP003 adaptor

Table 1: Parts and Accessories

Specifications

Response	Maintains Type 1 random response with Larson Davis random incidence microphones and Type 1 free-field response with Larson Davis free-field microphones	
Environmental Protection	From -40º C to 60º C; 0 - 100% R.H. using proper preamplifier and 10 reusable desiccant cartridges	
Electrostatic Actuator	none	
Dimensions	Windscreen/birdspikes	height 28.8 cm (12.4”) O.D. 10.2 cm (4.0”)
	Total Height	EPS2106: 50.0 cm (19.8”) EPS2106-2: 44.0 cm (18.4”) EPS2106-ICP: 44.0 cm (18.4”)
	Desiccant Chamber	height 12.7 cm (5.0”) O.D. 1.25” I.D. 1.0”
	Mounting	3/4” standard solid wall PVC conduit thread (female)
Weight	Windscreen/birdspikes	159 g (5.6 oz.)
	Body	113 g (4.0 oz.)
	Desiccant	23 g (0.8 oz.)
	Total	295 g (10.4 oz.)

Table 2: Specifications

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

Dimensions

EPS2106 Dimensions

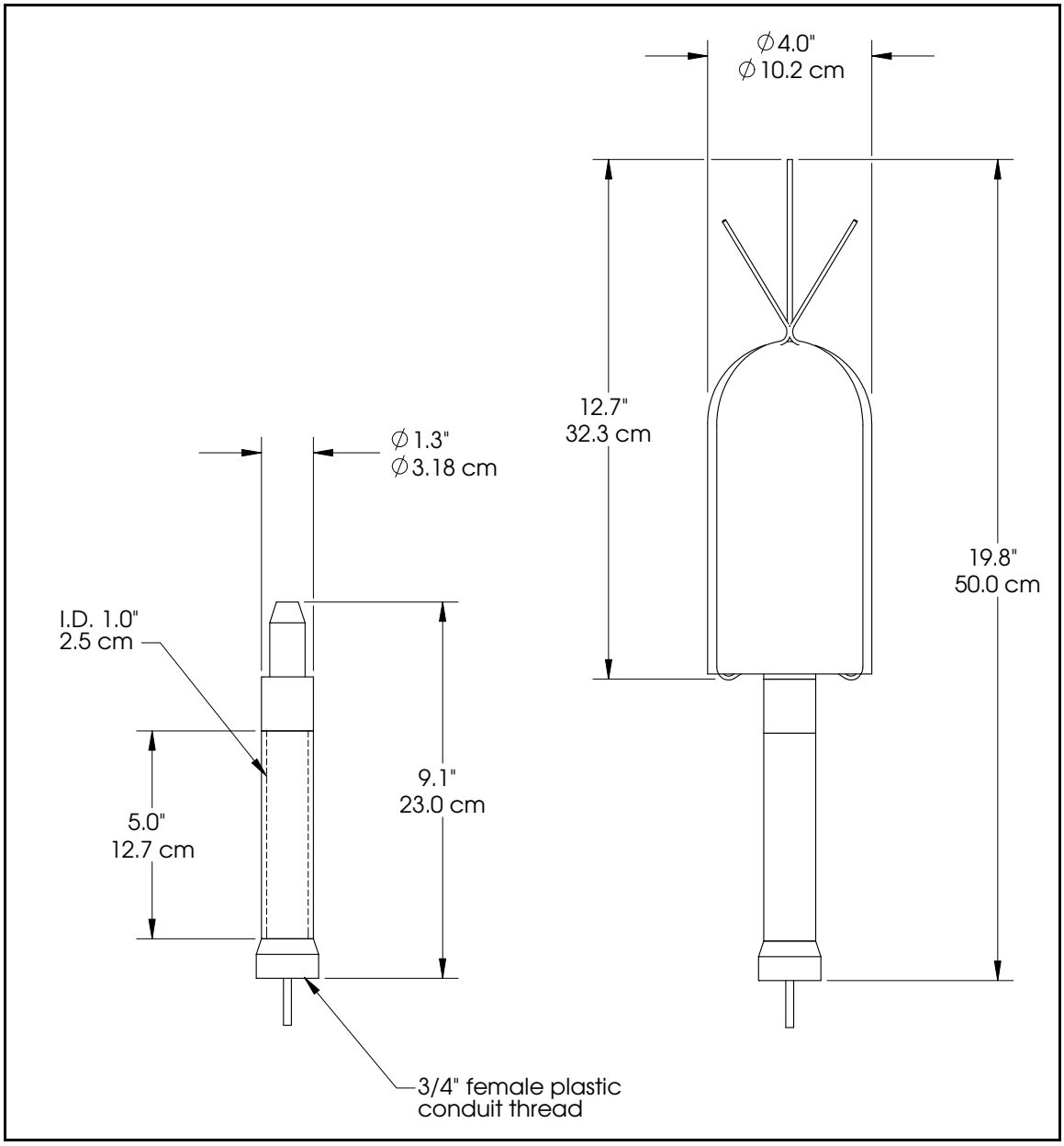

Figure 5 EPS2106 Dimensions

EPS2106-2 Dimensions

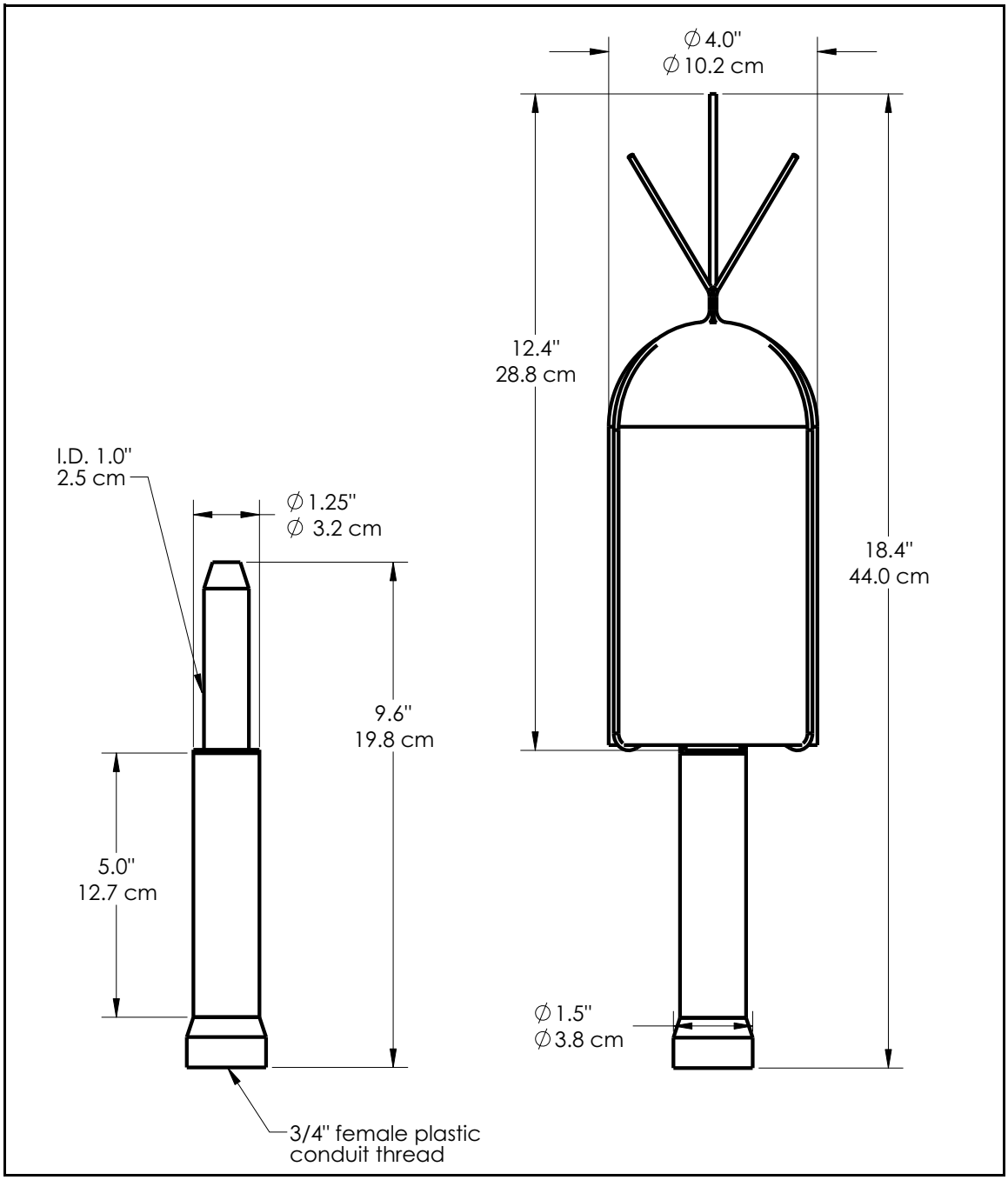

Figure 6 EPS2106-2 Dimensions

EPS2106-ICP Dimensions

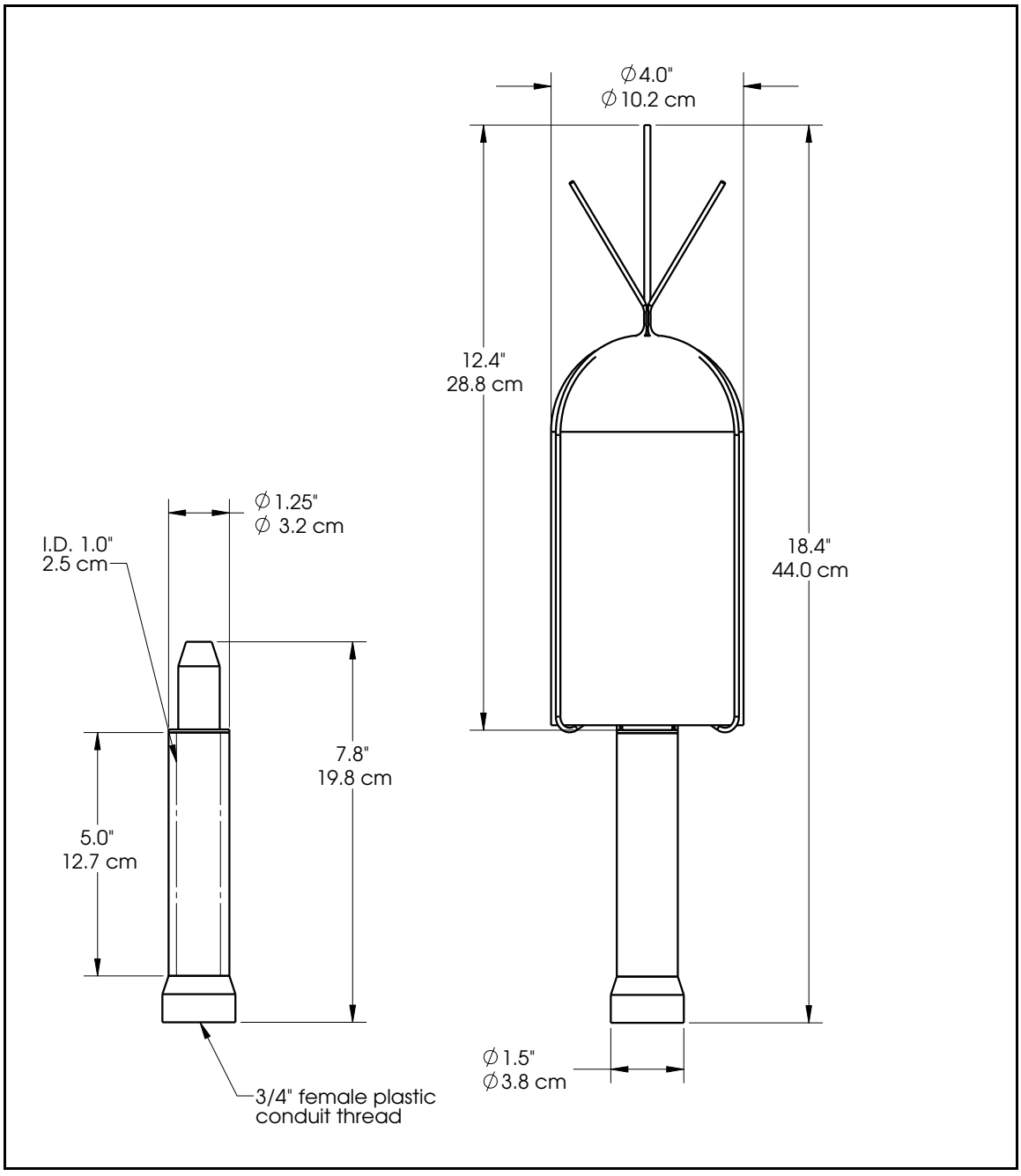

Figure 7 EPS2106-ICP Dimensions

Directional Response

Reference Direction

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

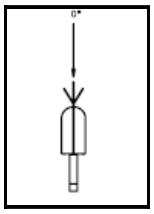

Figure 8 Reference Direction

EPS2106

Free-field Microphone 377B02

The directional response data shown in Figure 9 is for an EPS2106 with a 377B02 free-field microphone and a PRM900C microphone preamplifier.

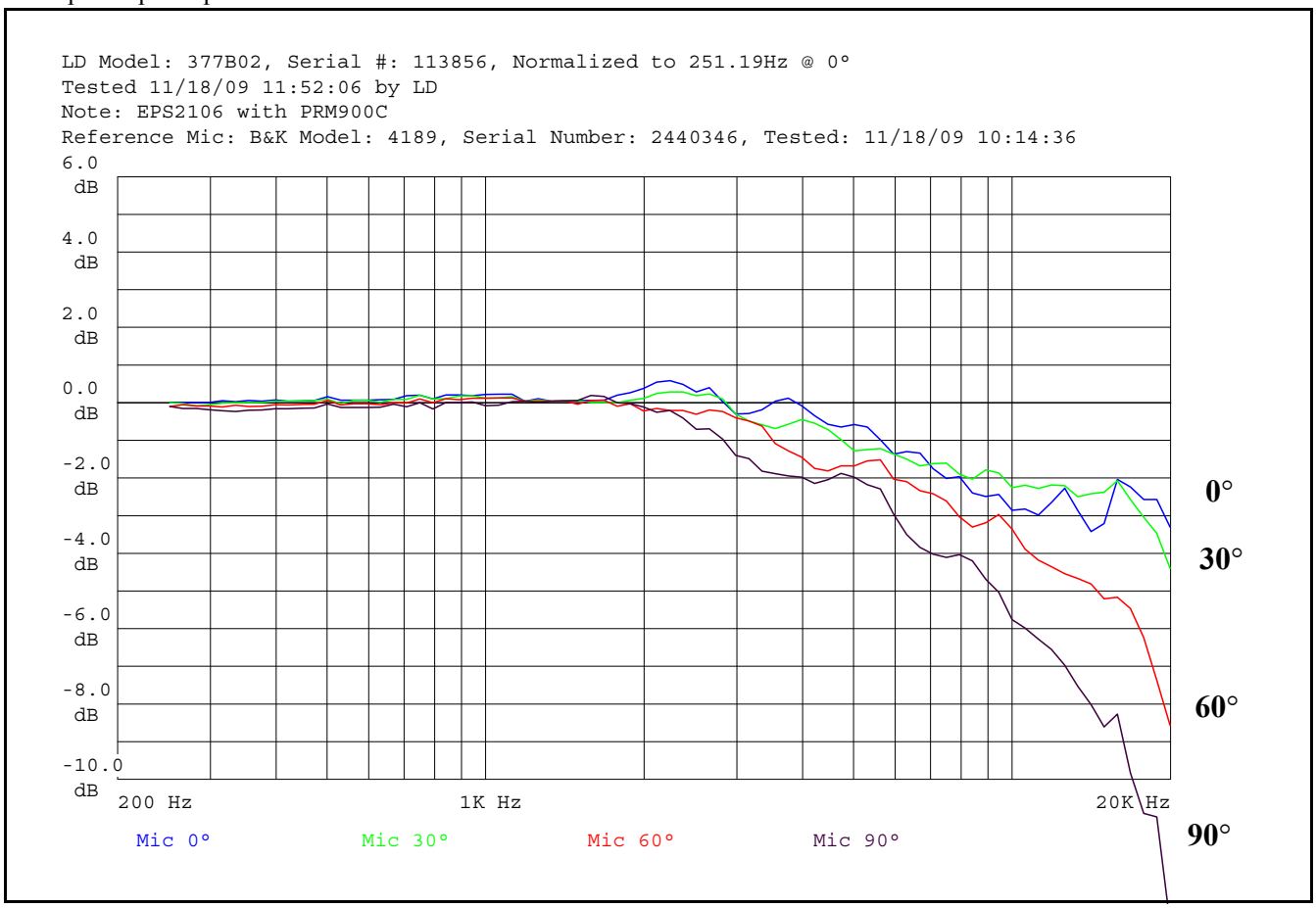

Figure 9 Typical EPS2106 Directional Response with 377B02: 0°, 30°, 60°, 90

The directional response data shown in Table 3 is for an EPS2106 with a 377B02 free-field microphone and a PRM900C microphone preamplifier.

Directional Response of typical 377B02 Microphone with EPS2106 (dB)														
Frequency		Angle (degrees)												
(Hz)	Random	0	15	30	45	60	75	90	105	120	135	150	165	180
251.2	0.11	0.00	0.00	0.00	-0.07	-0.10	-0.10	-0.10	-0.13	-0.17	-0.20	-0.20	-0.23	-0.20
266.1	0.10	0.01	-0.02	-0.02	-0.06	-0.06	-0.09	-0.16	-0.16	-0.19	-0.19	-0.26	-0.26	-0.22
281.8	0.09	0.01	0.01	-0.09	-0.06	-0.09	-0.09	-0.16	-0.19	-0.19	-0.19	-0.22	-0.19	-0.22
298.5	0.07	0.01	0.01	-0.06	-0.09	-0.09	-0.16	-0.19	-0.19	-0.19	-0.22	-0.26	-0.22	-0.22
316.2	0.05	0.05	0.05	-0.01	-0.08	-0.11	-0.15	-0.21	-0.25	-0.25	-0.25	-0.28	-0.35	-0.25
335.0	0.04	0.03	0.03	0.00	-0.07	-0.07	-0.17	-0.24	-0.27	-0.27	-0.27	-0.34	-0.27	-0.27
354.8	0.08	0.06	0.06	0.00	0.00	-0.10	-0.14	-0.20	-0.20	-0.20	-0.27	-0.27	-0.27	-0.30
375.8	0.05	0.04	0.01	0.01	-0.06	-0.09	-0.13	-0.19	-0.23	-0.29	-0.33	-0.29	-0.29	-0.29
398.1	0.09	0.07	0.07	0.04	-0.03	-0.06	-0.13	-0.16	-0.23	-0.23	-0.26	-0.23	-0.26	-0.23
421.7	0.08	0.04	0.04	0.04	-0.03	-0.06	-0.16	-0.16	-0.19	-0.26	-0.26	-0.26	-0.26	-0.26
446.7	0.10	0.05	0.05	0.05	-0.02	-0.05	-0.15	-0.15	-0.15	-0.18	-0.25	-0.25	-0.18	-0.15
473.2	0.14	0.06	0.06	0.06	0.06	-0.04	-0.07	-0.14	-0.14	-0.14	-0.21	-0.21	-0.21	-0.14
501.2	0.19	0.16	0.16	0.09	0.06	0.06	-0.04	-0.04	-0.11	-0.14	-0.14	-0.14	-0.04	-0.04
530.9	0.09	0.07	0.07	-0.03	-0.03	-0.06	-0.13	-0.13	-0.23	-0.23	-0.23	-0.23	-0.20	-0.13
562.3	0.14	0.07	0.07	0.07	0.04	-0.03	-0.03	-0.13	-0.13	-0.23	-0.23	-0.13	-0.13	-0.03
595.7	0.14	0.07	0.07	0.07	0.00	-0.03	-0.03	-0.13	-0.13	-0.23	-0.23	-0.13	-0.13	-0.03
631.0	0.11	0.08	0.08	0.01	-0.02	-0.05	-0.12	-0.12	-0.19	-0.22	-0.22	-0.22	-0.12	-0.12
668.3	0.20	0.09	0.09	0.09	0.09	-0.01	-0.01	-0.04	-0.08	-0.11	-0.11	-0.11	-0.04	-0.01
708.0	0.16	0.19	0.19	0.09	0.09	-0.01	-0.01	-0.11	-0.11	-0.21	-0.21	-0.21	-0.11	-0.01
749.9	0.22	0.20	0.20	0.20	0.10	0.10	0.00	0.00	-0.10	-0.10	-0.20	-0.10	-0.10	0.00
794.3	0.12	0.10	0.10	0.10	0.00	0.00	-0.10	-0.17	-0.20	-0.20	-0.20	-0.20	-0.17	-0.03
841.4	0.24	0.21	0.21	0.11	0.11	0.11	0.01	0.01	-0.06	-0.09	-0.09	-0.09	0.01	0.11
891.3	0.24	0.21	0.21	0.18	0.11	0.08	0.01	0.01	-0.09	-0.09	-0.09	-0.09	0.01	0.11
944.1	0.27	0.19	0.19	0.19	0.12	0.12	0.05	0.02	-0.05	-0.01	-0.08	-0.01	0.09	0.29
1000.0	0.22	0.22	0.19	0.12	0.12	0.12	0.02	-0.08	-0.08	-0.08	-0.18	-0.08	-0.08	0.12
1059.3	0.23	0.23	0.16	0.13	0.13	0.13	0.03	-0.07	-0.07	-0.07	-0.17	-0.07	-0.07	0.13
1122.0	0.30	0.23	0.23	0.16	0.13	0.13	0.13	0.03	0.03	0.00	-0.07	0.03	0.03	0.23
1188.5	0.23	0.04	0.07	0.04	0.04	0.04	0.04	0.04	-0.06	-0.06	-0.16	0.04	-0.06	0.14
1258.9	0.24	0.11	0.14	0.07	0.04	0.04	0.04	0.01	-0.06	-0.06	-0.06	0.04	-0.06	0.14
1333.5	0.25	0.04	0.04	0.04	0.04	0.04	0.04	0.04	-0.06	-0.03	0.04	0.04	-0.06	0.14
1412.5	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-0.05	-0.05	0.05	0.05	-0.05	0.15
1496.2	0.25	0.06	0.06	0.06	0.06	-0.04	0.06	0.06	-0.04	-0.04	0.06	0.06	-0.04	0.16
1584.9	0.35	0.06	0.03	-0.01	-0.01	0.06	0.06	0.19	0.16	0.19	0.19	0.09	0.23	0.49
1678.8	0.35	0.07	0.07	0.00	0.00	0.07	0.07	0.17	0.17	0.17	0.17	0.07	0.27	0.57
1778.3	0.15	0.20	0.10	0.00	-0.10	-0.10	-0.10	0.00	0.00	-0.20	-0.20	-0.16	0.00	0.30
1883.7	0.21	0.27	0.17	0.07	-0.03	-0.03	-0.03	-0.03	0.07	-0.13	-0.13	-0.13	0.07	0.37
1995.3	0.14	0.38	0.28	0.11	-0.12	-0.22	-0.12	-0.12	0.08	-0.15	-0.22	-0.22	-0.12	0.38
2113.5	0.08	0.55	0.45	0.25	0.05	-0.15	-0.25	-0.25	-0.15	-0.25	-0.25	-0.45	-0.42	0.25
2238.7	0.08	0.59	0.49	0.29	-0.01	-0.21	-0.21	-0.21	-0.21	-0.21	-0.31	-0.41	-0.41	0.19
2371.4	-0.11	0.49	0.49	0.29	0.09	-0.21	-0.51	-0.41	-0.51	-0.61	-0.54	-0.71	-0.71	-0.01
2511.9	-0.29	0.29	0.29	0.19	-0.01	-0.31	-0.61	-0.71	-0.71	-0.81	-0.81	-1.01	-1.01	-0.11
2660.7	-0.21	0.40	0.33	0.23	0.10	-0.20	-0.53	-0.70	-0.63	-0.70	-0.73	-0.90	-0.90	-0.10
2818.4	-0.42	0.03	0.07	0.10	0.00	-0.23	-0.73	-0.97	-1.07	-0.83	-1.13	-1.03	-0.93	-0.23
2985.4	-0.69	-0.30	-0.30	-0.30	-0.20	-0.40	-0.90	-1.40	-1.30	-1.30	-1.50	-1.10	-1.00	-0.40
3162.3	-0.81	-0.29	-0.29	-0.49	-0.49	-0.49	-0.89	-1.49	-1.59	-1.59	-1.49	-0.99	-0.99	-0.19
3349.7	-0.96	-0.19	-0.32	-0.59	-0.72	-0.62	-1.12	-1.82	-1.92	-1.62	-1.52	-0.89	-0.92	-0.02
3548.1	-1.13	0.04	-0.19	-0.69	-0.89	-1.09	-1.36	-1.89	-2.19	-1.89	-1.49	-1.09	-0.69	-0.19
3758.4	-1.27	0.12	-0.08	-0.58	-1.11	-1.28	-1.38	-1.95	-2.38	-2.18	-1.78	-1.58	-0.38	-0.28
3981.1	-1.35	-0.08	-0.18	-0.45	-1.15	-1.45	-1.55	-1.98	-2.35	-1.98	-2.08	-2.18	-0.38	-0.55
4217.0	-1.50	-0.35	-0.35	-0.55	-1.05	-1.75	-1.95	-2.15	-2.55	-2.15	-1.85	-2.25	-0.81	-0.91
4466.8	-1.55	-0.58	-0.61	-0.71	-1.01	-1.81	-2.01	-2.05	-2.51	-2.51	-1.71	-2.08	-1.08	-1.01
4731.5	-1.71	-0.65	-0.88	-0.98	-1.08	-1.68	-2.18	-1.88	-2.48	-2.68	-2.78	-2.08	-1.68	-1.68
5011.9	-1.84	-0.58	-0.78	-1.28	-1.18	-1.68	-2.28	-1.98	-2.38	-3.18	-2.78	-2.48	-2.08	-1.78
5308.8	-1.95	-0.65	-0.75	-1.25	-1.55	-1.55	-2.18	-2.18	-2.55	-3.15	-2.91	-3.18	-2.65	-2.05
5623.4	-2.09	-0.99	-0.92	-1.22	-1.52	-1.52	-2.16	-2.29	-2.82	-3.49	-3.32	-3.52	-3.02	-2.22
5956.6	-2.43	-1.37	-1.43	-1.37	-1.77	-2.03	-2.27	-2.97	-2.97	-3.73	-3.57	-3.87	-4.00	-2.93
6309.6	-2.60	-1.30	-1.50	-1.50	-1.50	-2.10	-2.47	-3.50	-3.10	-4.10	-3.70	-4.10	-4.80	-3.40
6683.4	-2.77	-1.34	-1.54	-1.68	-1.61	-2.34	-2.54	-3.84	-3.44	-4.04	-3.91	-4.24	-5.14	-3.64
7079.5	-3.02	-1.75	-1.62	-1.62	-1.79	-2.42	-3.12	-4.02	-3.82	-4.32	-4.22	-4.52	-5.72	-3.92
7498.9	-3.26	-2.01	-1.81	-1.61	-2.01	-2.61	-3.51	-4.11	-4.21	-4.51	-4.58	-4.81	-6.21	-4.21
7943.3	-3.69	-1.97	-2.03	-1.90	-2.17	-3.03	-4.00	-4.03	-5.10	-5.40	-5.60	-5.20	-6.80	-4.60
8414.0	-3.84	-2.40	-2.00	-2.03	-2.30	-3.30	-3.80	-4.20	-5.53	-5.77	-5.80	-5.10	-7.13	-5.20
8912.5	-3.99	-2.49	-2.29	-1.79	-2.59	-3.19	-3.69	-4.69	-5.79	-5.79	-6.59	-5.19	-7.59	-6.19
9440.6	-4.06	-2.44	-2.27	-1.87	-2.64	-2.97	-3.84	-5.04	-5.64	-6.04	-6.54	-5.64	-7.84	-6.74
10000.0	-4.55	-2.86	-2.16	-2.26	-2.76	-3.36	-4.56	-5.76	-6.36	-6.46	-7.56	-6.36	-8.36	-7.96
10592.5	-4.90	-2.82	-2.59	-2.19	-2.96	-3.89	-5.19	-5.99	-6.92	-6.69	-8.09	-6.69	-8.99	-8.99
11220.2	-5.10	-2.98	-2.38	-2.28	-3.01	-4.18	-5.38	-6.28	-7.28	-6.98	-8.48	-7.28	-9.08	-9.38
11885.0	-5.17	-2.65	-2.35	-2.19	-2.89	-4.35	-5.25	-6.55	-7.15	-7.65	-8.75	-7.75	-9.32	-10.19
12589.3	-5.54	-2.27	-2.17	-2.21	-3.17	-4.54	-5.57	-6.97	-7.77	-9.01	-9.67	-8.44	-10.87	-13.44
13335.2	-6.09	-2.87	-2.43	-2.50	-3.50	-4.67	-6.47	-7.53	-8.97	-9.77	-10.80	-9.87	-13.97	-18.67
14125.4	-6.29	-3.42	-2.42	-2.42	-3.59	-4.82	-6.72	-8.02	-9.12	-10.95	-11.02	-10.42	-14.35	-20.52
14962.4	-6.47	-3.21	-2.61	-2.38	-3.78	-5.21	-6.51	-8.61	-9.81	-11.31	-11.34	-10.51	-11.51	-15.91
15848.9	-6.29	-2.04	-2.27	-2.07	-3.57	-5.17	-6.47	-8.27	-10.97	-11.00	-11.07	-10.47	-8.97	-14.67
16788.0	-7.04	-2.24	-2.34	-2.57	-4.14	-5.47	-8.44	-9.84	-10.94	-12.90	-13.10	-10.94	-9.34	-17.50
17782.8	-7.63	-2.57	-2.44	-3.04	-4.64	-6.24	-8.74	-10.91	-11.84	-12.37	-13.97	-12.97	-12.51	-23.71
18836.5	-8.33	-2.57	-2.87	-3.47	-5.20	-7.37	-9.04	-11.00	-13.27	-14.60	-15.07	-15.04	-16.80	-25.87
19952.6	-9.43	-3.30	-3.44	-4.40	-6.00	-8.57	-10.90	-13.84	-16.20	-13.94	-15.27	-16.07	-16.90	-28.84

Table 3: Typical Directional Response of EPS2106 with 377B02

Random Incidence Microphone 377B20

The directional response data shown in Figure 10 is for an EPS2106 with a 377B20 free-field microphone and a PRM900C microphone preamplifier.

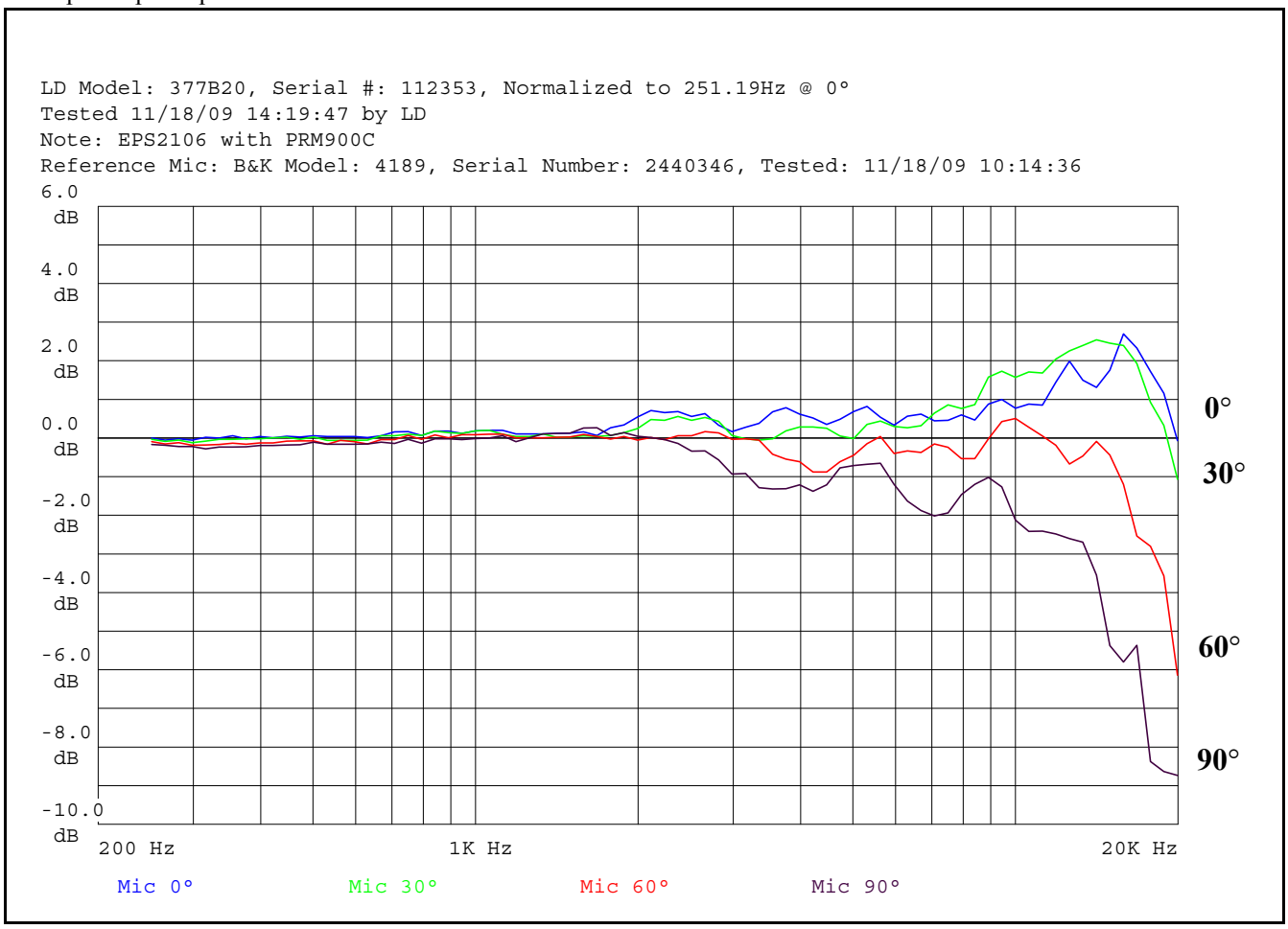

Figure 10 Typical EPS2106 Directional Response with 377B20: 0°, 30°, 60°, 90°

The directional response data shown in Table 4 is for an EPS2106 with a 377B20 random incidence microphone and a PRM900C microphone preamplifier.

Directional Response of typical 377B20 Microphone with EPS2106 (dB)														
Frequency		Angle (degrees)												
(Hz)	Random	0	15	30	45	60	75	90	105	120	135	150	165	180
251.2	0.06	0.00	-0.03	-0.03	-0.03	-0.10	-0.13	-0.17	-0.20	-0.20	-0.23	-0.23	-0.23	-0.23
266.1	0.02	-0.06	-0.06	-0.09	-0.09	-0.16	-0.16	-0.19	-0.19	-0.26	-0.26	-0.26	-0.29	-0.22
281.8	0.02	-0.02	-0.02	-0.06	-0.12	-0.12	-0.22	-0.22	-0.22	-0.22	-0.26	-0.22	-0.26	-0.22
298.5	-0.02	-0.06	-0.09	-0.12	-0.12	-0.19	-0.19	-0.22	-0.26	-0.29	-0.32	-0.32	-0.32	-0.32
316.2	-0.02	0.02	-0.08	-0.08	-0.08	-0.18	-0.18	-0.28	-0.28	-0.28	-0.31	-0.35	-0.38	-0.35
335.0	-0.02	0.00	0.00	-0.04	-0.10	-0.17	-0.20	-0.24	-0.30	-0.30	-0.30	-0.40	-0.37	-0.30
354.8	-0.01	0.06	0.06	-0.04	-0.04	-0.14	-0.24	-0.24	-0.27	-0.30	-0.34	-0.34	-0.34	-0.30
375.8	-0.02	-0.03	-0.03	-0.03	-0.13	-0.16	-0.23	-0.23	-0.26	-0.33	-0.33	-0.33	-0.33	-0.33
398.1	0.01	0.04	0.04	-0.03	-0.06	-0.13	-0.16	-0.19	-0.26	-0.33	-0.33	-0.33	-0.33	-0.29
421.7	0.01	0.01	0.01	0.01	-0.09	-0.13	-0.19	-0.19	-0.29	-0.29	-0.29	-0.29	-0.29	-0.29
446.7	0.02	0.05	0.02	0.02	-0.08	-0.08	-0.18	-0.18	-0.28	-0.28	-0.28	-0.28	-0.28	-0.28
473.2	0.04	0.03	0.03	-0.04	-0.07	-0.07	-0.14	-0.17	-0.21	-0.27	-0.27	-0.27	-0.27	-0.17
501.2	0.11	0.06	0.06	0.03	0.03	-0.07	-0.07	-0.11	-0.17	-0.17	-0.17	-0.17	-0.17	-0.07
530.9	0.02	0.04	-0.06	-0.06	-0.06	-0.16	-0.16	-0.16	-0.26	-0.26	-0.26	-0.26	-0.26	-0.16
562.3	0.05	0.04	-0.06	-0.06	-0.06	-0.06	-0.16	-0.16	-0.16	-0.26	-0.26	-0.16	-0.16	-0.16
595.7	0.04	0.04	-0.06	-0.06	-0.06	-0.10	-0.16	-0.16	-0.20	-0.26	-0.26	-0.26	-0.16	-0.16
631.0	0.04	0.01	-0.02	-0.05	-0.05	-0.15	-0.15	-0.15	-0.25	-0.25	-0.25	-0.25	-0.15	-0.15
668.3	0.12	0.06	0.06	0.06	-0.01	-0.04	-0.04	-0.11	-0.14	-0.18	-0.21	-0.14	-0.14	-0.04
708.0	0.12	0.16	0.09	0.06	0.06	-0.04	-0.04	-0.14	-0.14	-0.14	-0.24	-0.14	-0.14	-0.04
749.9	0.17	0.17	0.17	0.10	0.07	0.07	-0.03	-0.03	-0.13	-0.13	-0.13	-0.13	-0.03	0.07
794.3	0.08	0.07	0.07	0.07	-0.03	-0.03	-0.13	-0.13	-0.23	-0.23	-0.23	-0.23	-0.13	-0.03
841.4	0.19	0.18	0.18	0.18	0.08	0.08	-0.02	-0.02	-0.12	-0.12	-0.12	-0.12	-0.02	0.08
891.3	0.18	0.18	0.18	0.14	0.08	0.01	-0.02	-0.02	-0.12	-0.12	-0.12	-0.12	-0.02	0.08
944.1	0.20	0.12	0.12	0.12	0.09	0.09	-0.01	-0.05	-0.11	-0.05	-0.11	-0.05	0.02	0.19
1000.0	0.19	0.19	0.19	0.19	0.09	0.09	-0.01	-0.01	-0.11	-0.11	-0.21	-0.11	-0.05	0.09
1059.3	0.20	0.20	0.20	0.20	0.10	0.10	0.00	0.00	-0.10	-0.10	-0.14	-0.10	0.00	0.20
1122.0	0.25	0.20	0.13	0.10	0.10	0.10	0.10	0.06	0.00	0.00	-0.10	0.06	0.00	0.20
1188.5	0.16	0.11	0.11	0.04	0.01	0.01	0.01	-0.09	-0.09	-0.09	-0.19	-0.09	-0.09	0.11
1258.9	0.18	0.11	0.07	0.04	0.01	0.01	0.04	0.01	-0.09	-0.09	-0.13	0.01	-0.09	0.11
1333.5	0.25	0.11	0.11	0.11	0.01	0.01	0.11	0.11	0.01	0.01	0.01	0.01	0.01	0.21
1412.5	0.24	0.12	0.02	0.02	0.02	0.02	0.12	0.12	-0.05	0.02	0.02	0.02	0.02	0.22
1496.2	0.27	0.13	0.06	0.03	0.03	0.03	0.13	0.13	0.03	0.03	0.13	0.03	0.03	0.23
1584.9	0.39	0.16	0.13	0.06	0.06	0.09	0.16	0.26	0.26	0.26	0.23	0.16	0.26	0.56
1678.8	0.37	0.07	0.04	0.04	0.04	0.04	0.14	0.27	0.24	0.24	0.24	0.14	0.34	0.54
1778.3	0.22	0.27	0.20	0.07	-0.03	-0.03	0.07	0.07	0.07	-0.13	-0.03	-0.03	0.07	0.37
1883.7	0.29	0.34	0.24	0.14	0.04	0.04	0.14	0.14	0.14	-0.06	0.04	0.04	0.14	0.44
1995.3	0.28	0.55	0.45	0.25	0.05	-0.05	0.05	0.05	0.15	0.05	-0.05	0.01	0.05	0.55
2113.5	0.27	0.71	0.61	0.48	0.21	0.01	-0.09	0.01	0.11	0.01	-0.09	-0.19	-0.19	0.41
2238.7	0.25	0.66	0.66	0.46	0.26	-0.04	-0.04	-0.04	0.06	-0.04	-0.04	-0.24	-0.14	0.46
2371.4	0.15	0.69	0.66	0.56	0.36	0.06	-0.14	-0.14	-0.24	-0.34	-0.24	-0.44	-0.44	0.26
2511.9	0.03	0.56	0.56	0.46	0.29	0.06	-0.24	-0.34	-0.34	-0.44	-0.44	-0.71	-0.64	0.16
2660.7	0.09	0.63	0.60	0.53	0.37	0.17	-0.17	-0.33	-0.30	-0.33	-0.43	-0.63	-0.57	0.27
2818.4	-0.08	0.33	0.33	0.43	0.33	0.13	-0.33	-0.57	-0.70	-0.43	-0.77	-0.77	-0.60	0.03
2985.4	-0.29	0.17	0.07	0.07	0.27	-0.03	-0.43	-0.93	-0.83	-0.83	-1.10	-0.70	-0.63	-0.03
3162.3	-0.34	0.28	0.18	-0.02	0.04	-0.02	-0.42	-0.92	-1.12	-1.02	-1.02	-0.52	-0.52	0.28
3349.7	-0.44	0.38	0.24	-0.06	-0.19	-0.06	-0.56	-1.29	-1.42	-1.06	-0.96	-0.36	-0.42	0.51
3548.1	-0.53	0.68	0.48	-0.02	-0.26	-0.42	-0.72	-1.32	-1.59	-1.29	-0.82	-0.42	-0.12	0.48
3758.4	-0.58	0.79	0.65	0.19	-0.38	-0.55	-0.71	-1.31	-1.71	-1.41	-1.01	-0.91	0.29	0.39
3981.1	-0.59	0.62	0.59	0.29	-0.31	-0.61	-0.81	-1.21	-1.58	-1.18	-1.25	-1.31	0.39	0.25
4217.0	-0.69	0.52	0.42	0.29	-0.18	-0.88	-1.15	-1.38	-1.78	-1.28	-0.98	-1.31	0.12	0.02
4466.8	-0.64	0.35	0.32	0.25	-0.05	-0.88	-1.15	-1.21	-1.55	-1.55	-0.75	-1.05	-0.05	-0.05
4731.5	-0.62	0.49	0.25	0.05	-0.01	-0.61	-1.11	-0.78	-1.41	-1.51	-1.51	-0.91	-0.41	-0.51
5011.9	-0.63	0.69	0.49	-0.01	-0.01	-0.45	-1.11	-0.71	-1.11	-2.01	-1.61	-1.15	-0.71	-0.55
5308.8	-0.47	0.82	0.72	0.35	-0.01	-0.15	-0.71	-0.68	-0.98	-1.68	-1.35	-1.61	-1.01	-0.58
5623.4	-0.49	0.54	0.64	0.44	0.11	0.04	-0.56	-0.66	-1.16	-1.96	-1.66	-1.86	-1.26	-0.66
5956.6	-0.76	0.33	0.27	0.30	0.00	-0.40	-0.60	-1.20	-1.40	-2.00	-1.90	-2.17	-2.17	-1.30
6309.6	-0.77	0.57	0.37	0.27	0.27	-0.33	-0.53	-1.63	-1.33	-2.13	-1.73	-2.13	-2.83	-1.53
6683.4	-0.78	0.62	0.46	0.32	0.32	-0.38	-0.51	-1.88	-1.41	-1.94	-1.78	-2.18	-3.08	-1.58
7079.5	-0.80	0.45	0.65	0.65	0.45	-0.15	-0.95	-2.02	-1.55	-1.89	-1.89	-2.25	-3.42	-1.75
7498.9	-0.89	0.46	0.62	0.86	0.46	-0.24	-1.24	-1.94	-1.74	-2.14	-2.04	-2.34	-3.74	-1.84
7943.3	-1.11	0.60	0.67	0.77	0.57	-0.53	-1.50	-1.47	-2.50	-2.97	-2.73	-2.53	-4.13	-1.93
8414.0	-0.96	0.47	0.87	0.87	0.77	-0.53	-1.03	-1.20	-2.70	-2.93	-2.63	-2.13	-4.23	-2.23
8912.5	-0.62	0.88	1.08	1.58	0.78	-0.02	-0.22	-1.02	-2.52	-2.32	-3.12	-1.82	-4.32	-2.72
9440.6	-0.45	1.00	1.30	1.73	0.93	0.43	0.03	-1.27	-1.97	-2.27	-3.07	-1.97	-4.30	-3.14
10000.0	-0.72	0.77	1.51	1.57	1.01	0.51	-0.59	-2.13	-2.19	-2.59	-3.79	-2.29	-4.59	-4.09
10592.5	-1.04	0.88	1.24	1.71	0.81	0.28	-1.56	-2.42	-2.99	-2.72	-4.06	-2.52	-5.02	-4.99
11220.2	-1.23	0.85	1.55	1.69	0.82	0.05	-2.05	-2.41	-3.91	-2.71	-4.48	-2.98	-4.91	-5.41
11885.0	-1.16	1.45	1.68	2.05	1.21	-0.19	-1.72	-2.49	-3.65	-3.39	-4.59	-3.29	-4.92	-5.92
12589.3	-1.17	1.99	2.29	2.26	1.26	-0.67	-0.91	-2.61	-3.17	-5.51	-4.81	-3.74	-6.01	-8.21
13335.2	-1.35	1.50	2.37	2.40	1.20	-0.47	-1.10	-2.70	-4.13	-5.43	-6.23	-4.73	-9.00	-12.70
14125.4	-1.72	1.31	2.35	2.55	0.95	-0.09	-2.45	-3.55	-5.25	-6.05	-6.65	-5.65	-10.69	-18.92
14962.4	-2.35	1.76	2.06	2.46	0.39	-0.44	-3.64	-5.38	-6.34	-7.74	-7.54	-6.51	-8.84	-13.98
15848.9	-2.57	2.70	2.60	2.40	0.20	-1.20	-3.50	-5.80	-8.14	-8.00	-8.70	-6.70	-6.20	-11.44
16788.0	-2.97	2.33	2.26	1.93	0.13	-2.54	-3.77	-5.37	-7.77	-10.27	-8.27	-7.37	-6.07	-12.70
17782.8	-3.82	1.73	1.83	0.93	-0.17	-2.81	-5.81	-8.37	-7.57	-8.67	-10.97	-9.41	-8.47	-17.67
18836.5	-4.79	1.16	1.23	0.33	-1.24	-3.57	-6.47	-8.64	-12.20	-10.04	-12.14	-12.14	-12.24	-20.17
19952.6	-6.18	-0.07	0.03	-1.07	-2.70	-6.14	-6.84	-8.74	-12.00	-13.90	-14.67	-13.94	-12.70	-22.20

Table 4: Typical Directional Response of EPS2106 with 377B20

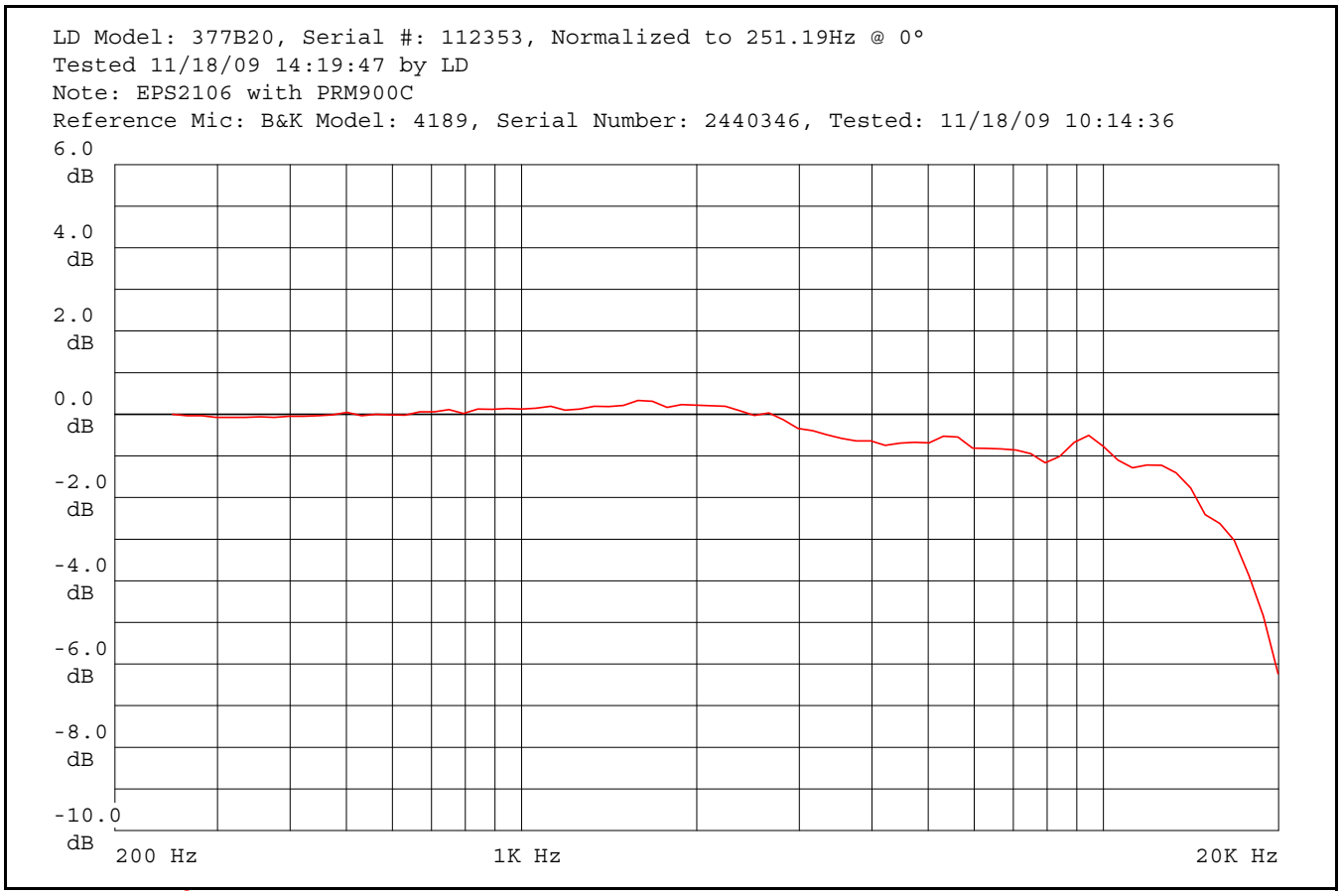

Figure 11 Typical EPS2106 Random Response with 377B20

EPS2106-2

Free-field Microphone 377B02

The directional response data shown in Figure 12 is for an EPS2106-2 with a 377B02 free-field microphone and a PRM831 microphone preamplifier.

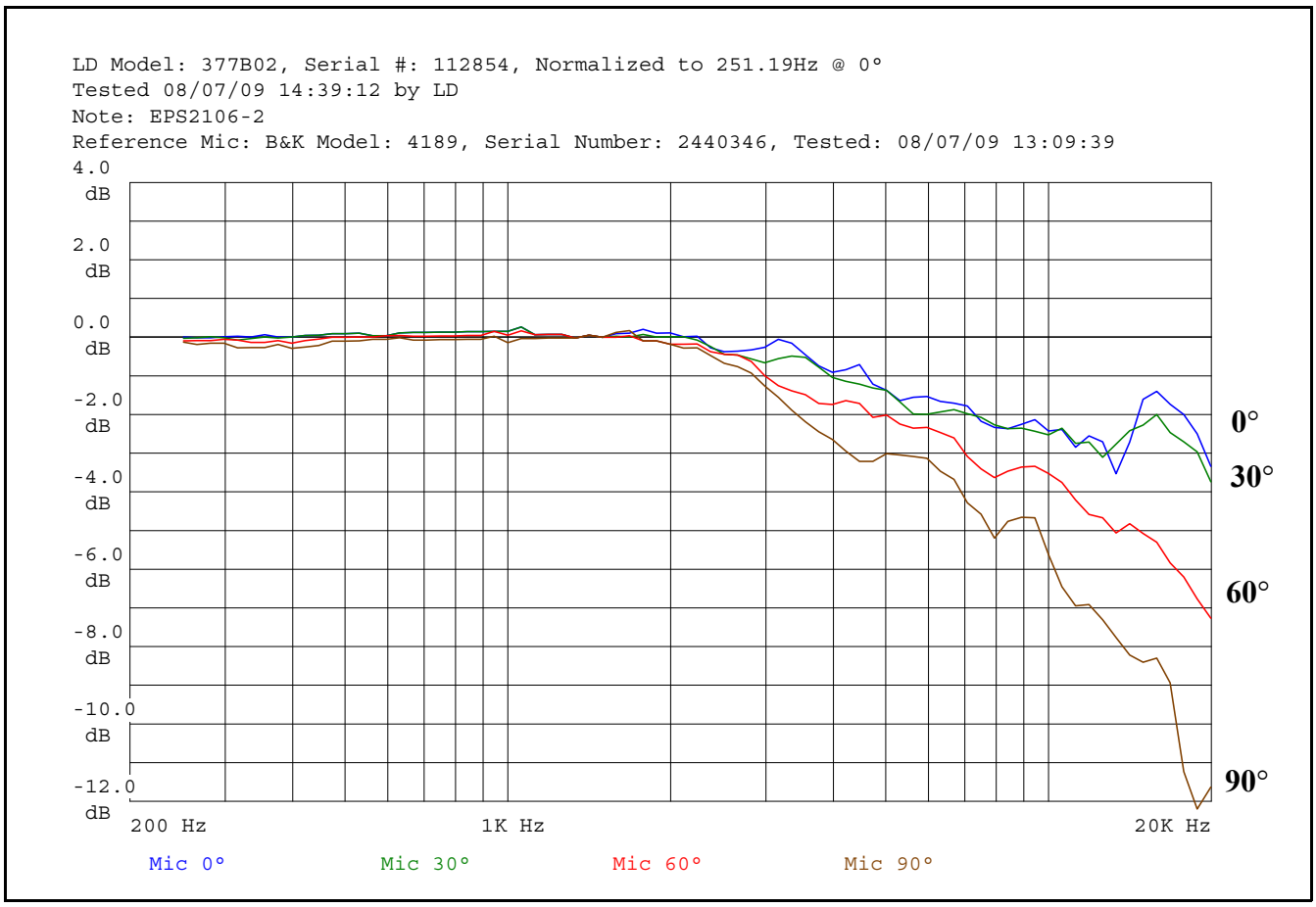

Figure 12 Typical EPS2106-2 Directional Response with 377B02: 0°, 30°, 60°, 90

The directional response data shown in Table 5 is for an EPS2106-2 with a 377B02 free-field microphone and a PRM831 microphone preamplifier.

Directional Response of typical 377B02 Microphone with EPS2106-2 (dB)														
Frequency		Angle (degrees)												
(Hz)	Random	0	15	30	45	60	75	90	105	120	135	150	165	180
251.2	0.00	0.00	0.00	-0.03	-0.07	-0.10	-0.13	-0.13	-0.20	-0.20	-0.23	-0.30	-0.30	-0.30
266.1	0.00	-0.02	0.01	-0.02	-0.09	-0.09	-0.12	-0.19	-0.19	-0.22	-0.22	-0.26	-0.29	-0.29
281.8	0.00	-0.02	0.01	0.01	-0.06	-0.09	-0.16	-0.16	-0.19	-0.19	-0.26	-0.26	-0.26	-0.29
298.5	0.01	0.01	0.01	-0.02	-0.02	-0.06	-0.09	-0.16	-0.22	-0.22	-0.26	-0.26	-0.32	-0.32
316.2	-0.06	0.02	0.02	-0.08	-0.08	-0.08	-0.18	-0.28	-0.28	-0.28	-0.35	-0.38	-0.38	-0.31
335.0	-0.08	0.00	0.00	-0.04	-0.10	-0.14	-0.20	-0.27	-0.30	-0.37	-0.30	-0.40	-0.40	-0.34
354.8	-0.06	0.06	0.06	0.00	-0.04	-0.14	-0.14	-0.27	-0.30	-0.34	-0.34	-0.34	-0.34	-0.34
375.8	-0.05	0.01	0.01	-0.03	-0.06	-0.09	-0.19	-0.19	-0.29	-0.33	-0.29	-0.33	-0.36	-0.33
398.1	-0.07	0.01	0.04	0.01	-0.06	-0.16	-0.16	-0.29	-0.26	-0.36	-0.36	-0.36	-0.36	-0.36
421.7	-0.05	0.04	0.04	0.04	-0.06	-0.09	-0.16	-0.26	-0.26	-0.36	-0.36	-0.33	-0.33	-0.26
446.7	0.00	0.05	0.05	0.05	-0.05	-0.05	-0.12	-0.22	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
473.2	0.05	0.09	0.09	0.09	-0.01	-0.01	-0.11	-0.11	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21
501.2	0.08	0.09	0.09	0.09	0.09	-0.01	-0.04	-0.11	-0.11	-0.21	-0.21	-0.14	-0.14	-0.11
530.9	0.10	0.10	0.10	0.10	0.07	0.00	0.00	-0.10	-0.10	-0.16	-0.20	-0.10	-0.10	-0.06
562.3	0.07	0.04	0.04	0.04	0.04	0.00	-0.06	-0.06	-0.16	-0.16	-0.16	-0.16	-0.16	-0.06
595.7	0.08	0.04	0.04	0.04	0.04	0.04	-0.06	-0.06	-0.16	-0.16	-0.20	-0.16	-0.16	-0.06
631.0	0.14	0.11	0.11	0.11	0.11	0.05	0.01	-0.02	-0.09	-0.09	-0.15	-0.09	-0.09	0.01
668.3	0.11	0.12	0.12	0.12	0.06	0.02	0.02	-0.08	-0.08	-0.18	-0.18	-0.08	-0.08	0.02
708.0	0.06	0.12	0.12	0.12	0.02	0.02	-0.08	-0.08	-0.18	-0.24	-0.28	-0.21	-0.24	-0.08
749.9	0.11	0.13	0.13	0.13	0.13	0.03	0.00	-0.07	-0.10	-0.17	-0.20	-0.17	-0.17	-0.07
794.3	0.12	0.13	0.13	0.13	0.13	0.03	0.03	-0.07	-0.07	-0.17	-0.17	-0.17	-0.17	0.03
841.4	0.13	0.14	0.14	0.14	0.14	0.04	0.04	-0.06	-0.06	-0.16	-0.16	-0.16	-0.16	0.04
891.3	0.11	0.14	0.14	0.14	0.14	0.04	-0.06	-0.06	-0.12	-0.16	-0.16	-0.16	-0.16	0.04
944.1	0.20	0.15	0.15	0.15	0.15	0.15	0.05	0.02	-0.05	-0.05	-0.05	0.02	-0.05	0.25
1000.0	0.09	0.15	0.15	0.15	0.12	0.05	-0.05	-0.15	-0.15	-0.15	-0.25	-0.15	-0.21	0.05
1059.3	0.19	0.26	0.26	0.26	0.16	0.16	0.06	-0.04	-0.04	-0.04	-0.14	-0.04	-0.14	0.16
1122.0	0.11	0.06	0.06	0.06	0.06	0.06	0.06	-0.04	-0.14	-0.14	-0.24	-0.14	-0.14	0.16
1188.5	0.13	0.07	0.07	0.07	0.07	0.07	0.07	-0.03	-0.13	-0.13	-0.16	-0.13	-0.13	0.07
1258.9	0.14	0.07	0.07	0.07	0.07	0.07	0.07	-0.03	-0.06	-0.09	-0.13	-0.13	-0.09	0.14
1333.5	0.06	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.13	-0.23	-0.23	-0.23	-0.13	0.07
1412.5	0.12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-0.15	-0.15	-0.25	-0.15	0.05	0.15
1496.2	0.09	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.11	-0.17	-0.21	-0.21	-0.01	0.09
1584.9	0.22	0.09	0.09	0.03	-0.01	-0.01	0.06	0.13	0.06	0.03	0.09	0.09	0.29	0.49
1678.8	0.24	0.10	0.07	0.00	0.00	0.04	0.07	0.17	0.07	0.07	0.07	0.10	0.30	0.57
1778.3	0.09	0.20	0.17	0.07	0.00	-0.10	-0.10	-0.10	0.00	-0.20	-0.20	-0.10	0.10	0.40
1883.7	0.05	0.10	0.10	0.00	-0.10	-0.10	-0.10	-0.10	-0.10	-0.30	-0.20	-0.10	0.10	0.40
1995.3	-0.01	0.11	0.05	0.01	-0.09	-0.19	-0.19	-0.19	-0.09	-0.29	-0.39	-0.25	0.01	0.41
2113.5	-0.08	0.01	0.01	0.01	-0.09	-0.19	-0.29	-0.29	-0.22	-0.39	-0.39	-0.39	-0.15	0.41
2238.7	-0.11	0.02	-0.01	-0.08	-0.08	-0.18	-0.28	-0.28	-0.28	-0.48	-0.38	-0.48	-0.18	0.32
2371.4	-0.31	-0.28	-0.28	-0.24	-0.24	-0.38	-0.48	-0.48	-0.58	-0.58	-0.58	-0.68	-0.38	0.12
2511.9	-0.48	-0.38	-0.38	-0.44	-0.38	-0.44	-0.58	-0.68	-0.78	-0.78	-0.98	-0.98	-0.38	0.02
2660.7	-0.50	-0.37	-0.40	-0.47	-0.40	-0.47	-0.57	-0.77	-0.77	-0.77	-0.97	-1.03	-0.37	-0.07
2818.4	-0.73	-0.33	-0.40	-0.57	-0.73	-0.63	-0.77	-0.93	-1.10	-1.10	-1.27	-1.33	-0.43	-0.33
2985.4	-1.00	-0.27	-0.37	-0.67	-0.87	-1.00	-1.07	-1.27	-1.47	-1.37	-1.57	-1.57	-0.87	-0.67
3162.3	-1.22	-0.06	-0.26	-0.56	-0.96	-1.26	-1.26	-1.56	-1.76	-1.86	-1.96	-1.72	-0.96	-0.62
3349.7	-1.43	-0.16	-0.19	-0.49	-1.02	-1.39	-1.59	-1.89	-2.09	-2.09	-2.39	-1.82	-1.19	-0.69
3548.1	-1.64	-0.46	-0.46	-0.52	-0.96	-1.49	-1.96	-2.19	-2.46	-2.46	-2.46	-2.16	-1.46	-0.86
3758.4	-1.87	-0.75	-0.75	-0.78	-0.95	-1.71	-2.28	-2.45	-2.65	-2.75	-2.45	-2.65	-2.05	-1.05
3981.1	-2.06	-0.91	-0.95	-1.05	-1.11	-1.75	-2.45	-2.65	-2.85	-2.85	-2.81	-2.75	-2.65	-1.25
4217.0	-2.14	-0.85	-0.95	-1.15	-1.35	-1.65	-2.65	-2.95	-2.95	-2.95	-2.75	-2.45	-2.75	-1.35
4466.8	-2.19	-0.71	-0.88	-1.21	-1.45	-1.71	-2.71	-3.21	-3.08	-2.91	-2.51	-2.31	-2.91	-1.21
4731.5	-2.45	-1.21	-1.11	-1.31	-1.81	-2.08	-2.61	-3.21	-3.21	-3.21	-3.08	-3.21	-3.21	-1.91
5011.9	-2.38	-1.38	-1.41	-1.38	-1.71	-2.01	-2.41	-3.01	-3.01	-3.31	-2.91	-3.41	-3.11	-2.05
5308.8	-2.56	-1.65	-1.75	-1.68	-1.75	-2.25	-2.45	-3.05	-3.05	-3.45	-3.75	-3.45	-3.45	-2.65
5623.4	-2.76	-1.56	-1.76	-1.99	-2.06	-2.36	-2.56	-3.09	-3.36	-3.66	-3.96	-3.86	-3.76	-2.96
5956.6	-2.97	-1.53	-1.60	-2.00	-2.23	-2.33	-2.67	-3.13	-3.87	-4.00	-4.53	-4.67	-4.27	-3.53
6309.6	-3.22	-1.67	-1.70	-1.93	-2.43	-2.47	-3.07	-3.47	-4.27	-4.47	-4.60	-4.87	-4.67	-3.77
6683.4	-3.33	-1.71	-1.78	-1.88	-2.38	-2.61	-3.18	-3.68	-4.58	-4.61	-4.61	-4.98	-4.91	-3.74
7079.5	-3.61	-1.79	-1.85	-1.99	-2.29	-3.09	-3.45	-4.29	-5.29	-4.69	-4.65	-5.09	-5.39	-4.05
7498.9	-3.79	-2.18	-2.08	-2.08	-2.28	-3.41	-3.84	-4.58	-5.54	-4.48	-4.78	-5.28	-6.14	-4.28
7943.3	-4.23	-2.33	-2.47	-2.27	-2.57	-3.63	-4.47	-5.20	-5.47	-5.27	-5.60	-5.87	-7.37	-5.13
8414.0	-4.27	-2.37	-2.37	-2.37	-2.57	-3.47	-4.57	-4.77	-5.27	-6.03	-6.27	-5.87	-7.77	-5.67
8912.5	-4.37	-2.26	-2.36	-2.36	-2.66	-3.36	-4.42	-4.66	-5.46	-7.06	-6.76	-5.96	-7.86	-6.46
9440.6	-4.41	-2.14	-2.34	-2.44	-2.74	-3.34	-4.34	-4.67	-5.67	-7.60	-6.64	-5.74	-7.77	-6.90
10000.0	-4.80	-2.43	-2.33	-2.53	-3.03	-3.53	-4.73	-5.63	-6.49	-7.66	-6.99	-6.43	-8.33	-7.96
10592.5	-5.07	-2.39	-2.56	-2.36	-3.06	-3.76	-5.16	-6.46	-6.96	-7.16	-7.86	-7.16	-8.92	-8.86
11220.2	-5.39	-2.85	-2.68	-2.75	-3.01	-4.21	-5.65	-6.95	-7.01	-7.45	-8.61	-7.61	-9.15	-9.48
11885.0	-5.58	-2.55	-2.89	-2.72	-3.19	-4.59	-5.79	-6.92	-7.19	-8.52	-8.39	-7.59	-9.12	-10.09
12589.3	-5.88	-2.71	-2.64	-3.11	-3.51	-4.67	-5.71	-7.31	-8.11	-9.61	-8.31	-8.51	-9.67	-11.64
13335.2	-6.24	-3.53	-3.07	-2.77	-3.80	-5.07	-6.03	-7.77	-8.87	-9.03	-10.00	-10.03	-10.67	-14.37
14125.4	-6.33	-2.72	-3.02	-2.42	-3.59	-4.82	-6.75	-8.22	-9.19	-9.32	-11.59	-10.02	-11.02	-17.49
14962.4	-6.37	-1.61	-2.01	-2.28	-3.48	-5.08	-7.01	-8.41	-9.91	-10.78	-10.51	-10.11	-11.91	-23.14
15848.9	-6.39	-1.40	-1.80	-2.00	-3.10	-5.30	-7.34	-8.30	-10.60	-10.60	-11.40	-11.00	-13.87	-30.77
16788.0	-6.85	-1.74	-2.24	-2.47	-3.50	-5.84	-7.60	-8.94	-11.17	-10.90	-13.34	-10.74	-14.24	-22.80
17782.8	-7.37	-2.01	-2.24	-2.71	-4.14	-6.21	-7.71	-11.24	-10.97	-14.81	-11.94	-12.01	-14.37	-20.84
18836.5	-8.04	-2.50	-2.87	-2.97	-4.74	-6.77	-8.60	-12.20	-12.17	-13.77	-15.57	-15.00	-13.34	-23.30
19952.6	-8.94	-3.34	-3.57	-3.74	-5.64	-7.27	-10.60	-11.64	-15.24	-14.97	-15.70	-16.80	-14.47	-30.97

Table 5: Typical Directional Response of EPS2106-2 with 377B02

Random Incidence Microphone 377B20

The directional response data shown in Figure 13 is for an EPS2106-2 with a 377B20 free-field microphone and a PRM831 microphone preamplifier.

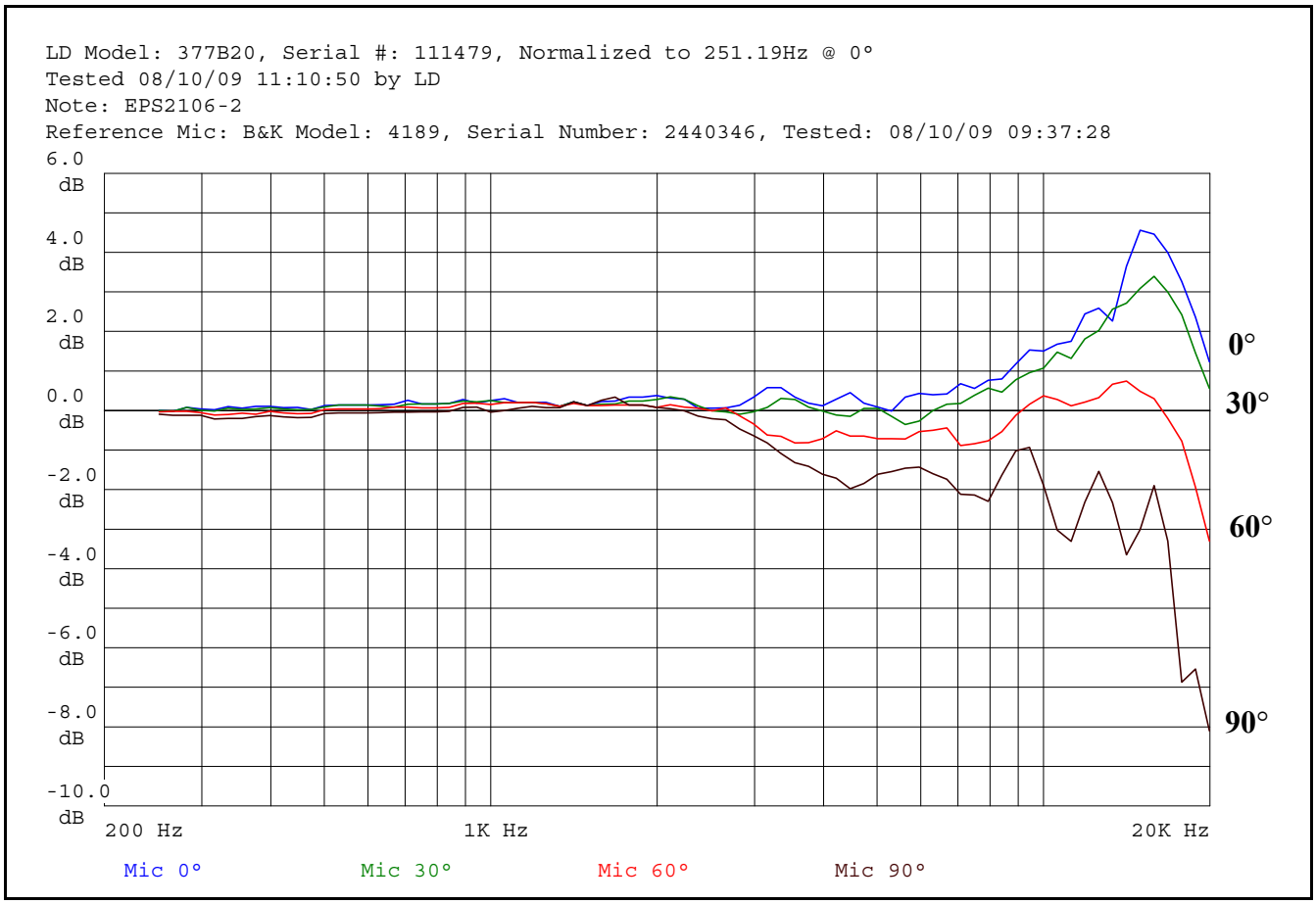

Figure 13 Typical EPS2106-2 Directional Response with 377B20: 0°, 30°, 60°, 90°

The directional response data shown in Table 6 is for an EPS2106-2 with a 377B20 random incidence microphone and a PRM831 microphone preamplifier.

Directional Response of typical 377B20 Microphone with EPS2106-2 (dB)														
Frequency		Angle (degrees)												
(Hz)	Random	0	15	30	45	60	75	90	105	120	135	150	165	180
251.2	0.00	0.00	0.03	0.00	0.00	-0.03	-0.10	-0.10	-0.10	-0.17	-0.13	-0.20	-0.20	-0.20
266.1	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.09	-0.12	-0.19	-0.12	-0.16	-0.16	-0.19	-0.22
281.8	0.02	0.08	0.08	0.08	0.01	-0.02	-0.09	-0.12	-0.12	-0.09	-0.12	-0.12	-0.12	-0.12
298.5	-0.01	0.04	0.01	0.01	-0.02	-0.06	-0.12	-0.12	-0.12	-0.16	-0.16	-0.19	-0.22	-0.19
316.2	-0.10	0.02	0.02	-0.01	-0.01	-0.11	-0.21	-0.21	-0.28	-0.28	-0.31	-0.31	-0.28	-0.31
335.0	-0.07	0.10	0.06	0.06	0.00	-0.10	-0.14	-0.20	-0.24	-0.24	-0.30	-0.24	-0.27	-0.20
354.8	-0.08	0.06	0.03	0.03	-0.04	-0.07	-0.17	-0.20	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27
375.8	-0.05	0.11	0.04	0.04	0.01	-0.09	-0.09	-0.16	-0.19	-0.26	-0.26	-0.23	-0.23	-0.19
398.1	-0.03	0.11	0.11	0.07	0.01	-0.03	-0.13	-0.13	-0.23	-0.23	-0.23	-0.23	-0.23	-0.19
421.7	-0.05	0.07	0.07	0.04	0.04	-0.06	-0.13	-0.16	-0.23	-0.26	-0.26	-0.26	-0.23	-0.23
446.7	-0.04	0.08	0.02	0.02	0.02	-0.08	-0.18	-0.18	-0.18	-0.18	-0.18	-0.22	-0.18	-0.18
473.2	-0.02	0.03	0.06	0.03	0.03	-0.07	-0.07	-0.17	-0.21	-0.21	-0.17	-0.17	-0.17	-0.17
501.2	0.02	0.13	0.13	0.09	0.03	0.03	-0.07	-0.07	-0.17	-0.17	-0.17	-0.17	-0.17	-0.07
530.9	0.04	0.14	0.14	0.14	0.04	0.04	-0.06	-0.06	-0.10	-0.16	-0.16	-0.16	-0.06	-0.06
562.3	0.07	0.14	0.14	0.14	0.14	0.04	0.04	-0.06	-0.06	-0.16	-0.16	-0.06	-0.06	0.00
595.7	0.07	0.14	0.14	0.14	0.14	0.04	0.04	-0.06	-0.06	-0.16	-0.16	-0.10	-0.06	0.04
631.0	0.06	0.15	0.15	0.11	0.05	0.05	-0.02	-0.05	-0.05	-0.15	-0.15	-0.12	-0.05	-0.05
668.3	0.06	0.16	0.16	0.09	0.09	0.09	-0.01	-0.04	-0.11	-0.18	-0.14	-0.11	-0.11	-0.01
708.0	0.09	0.26	0.26	0.16	0.16	0.09	0.06	-0.04	-0.04	-0.14	-0.14	-0.14	-0.04	0.06
749.9	0.05	0.17	0.17	0.17	0.07	0.07	-0.03	-0.03	-0.13	-0.13	-0.23	-0.13	-0.13	-0.03
794.3	0.06	0.17	0.17	0.17	0.07	0.07	-0.03	-0.03	-0.13	-0.13	-0.17	-0.13	-0.13	-0.03
841.4	0.06	0.18	0.18	0.18	0.08	0.08	-0.02	-0.02	-0.12	-0.12	-0.22	-0.12	-0.12	0.08
891.3	0.16	0.28	0.28	0.24	0.18	0.18	0.08	0.08	-0.02	-0.02	-0.12	-0.02	-0.02	0.08
944.1	0.21	0.19	0.25	0.22	0.25	0.19	0.19	0.09	0.09	-0.01	-0.11	0.09	0.09	0.29
1000.0	0.12	0.25	0.25	0.25	0.15	0.15	0.05	-0.05	-0.05	-0.05	-0.15	-0.05	-0.05	0.15
1059.3	0.15	0.30	0.26	0.20	0.20	0.20	0.10	0.00	0.00	-0.10	-0.10	0.00	0.00	0.20
1122.0	0.16	0.20	0.20	0.20	0.20	0.20	0.13	0.06	0.00	-0.10	-0.10	0.00	-0.04	0.20
1188.5	0.16	0.21	0.14	0.21	0.14	0.21	0.11	0.11	0.01	-0.09	-0.06	0.01	0.01	0.21
1258.9	0.17	0.21	0.21	0.17	0.14	0.17	0.14	0.07	0.01	-0.03	0.01	0.01	0.01	0.21
1333.5	0.15	0.11	0.11	0.11	0.11	0.11	0.11	0.07	0.01	0.01	0.01	-0.09	0.01	0.21
1412.5	0.26	0.22	0.22	0.22	0.22	0.18	0.22	0.22	0.12	0.12	0.12	0.02	0.12	0.32
1496.2	0.17	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.03	0.03	-0.07	0.03	0.23
1584.9	0.23	0.23	0.19	0.16	0.13	0.13	0.16	0.26	0.13	0.06	0.03	0.03	0.33	0.63
1678.8	0.28	0.24	0.24	0.17	0.17	0.14	0.24	0.34	0.17	0.14	0.04	0.14	0.37	0.67
1778.3	0.20	0.34	0.34	0.24	0.14	0.14	0.14	0.14	0.14	-0.06	-0.06	-0.06	0.24	0.54
1883.7	0.20	0.34	0.34	0.24	0.14	0.14	0.14	0.14	0.14	-0.06	-0.06	-0.03	0.20	0.54
1995.3	0.22	0.38	0.38	0.28	0.18	0.08	0.08	0.08	0.18	0.08	0.08	0.01	0.18	0.68
2113.5	0.17	0.31	0.35	0.35	0.15	0.15	0.05	0.05	0.05	-0.15	0.05	-0.05	0.05	0.65
2238.7	0.14	0.29	0.29	0.29	0.19	0.09	0.02	-0.01	0.02	-0.11	-0.01	-0.11	-0.01	0.69
2371.4	-0.03	0.06	0.06	0.12	0.06	0.06	-0.11	-0.14	-0.14	-0.34	-0.34	-0.34	-0.24	0.46
2511.9	-0.10	0.06	-0.01	-0.01	-0.01	-0.01	-0.11	-0.21	-0.38	-0.21	-0.51	-0.41	-0.31	0.39
2660.7	-0.07	0.07	0.07	-0.03	0.07	0.07	-0.10	-0.23	-0.33	-0.20	-0.47	-0.40	-0.23	0.47
2818.4	-0.29	0.13	0.07	-0.10	-0.23	-0.13	-0.30	-0.47	-0.53	-0.57	-0.83	-0.50	-0.33	0.10
2985.4	-0.46	0.33	0.17	-0.03	-0.33	-0.33	-0.43	-0.63	-0.83	-0.90	-1.03	-0.73	-0.43	-0.07
3162.3	-0.59	0.58	0.44	0.08	-0.32	-0.62	-0.59	-0.82	-1.02	-1.02	-1.22	-1.02	-0.52	-0.02
3349.7	-0.74	0.58	0.58	0.31	-0.32	-0.66	-0.82	-1.09	-1.29	-1.42	-1.52	-1.39	-0.42	-0.02
3548.1	-0.96	0.34	0.34	0.28	-0.19	-0.82	-1.22	-1.32	-1.62	-1.69	-1.89	-1.82	-0.32	-0.12
3758.4	-0.96	0.19	0.19	0.09	-0.01	-0.81	-1.31	-1.41	-1.61	-1.61	-1.81	-1.91	-0.11	-0.11
3981.1	-1.01	0.12	0.09	-0.01	-0.11	-0.71	-1.38	-1.61	-1.85	-1.91	-1.41	-1.41	-0.21	-0.28
4217.0	-1.00	0.29	0.19	-0.11	-0.21	-0.51	-1.41	-1.71	-1.78	-1.91	-1.51	-1.05	-0.61	-0.31
4466.8	-1.12	0.45	0.25	-0.15	-0.35	-0.65	-1.55	-1.98	-1.95	-1.71	-1.88	-1.05	-0.81	-0.18
4731.5	-1.13	0.19	0.25	0.05	-0.51	-0.65	-1.25	-1.85	-1.85	-1.98	-1.45	-1.95	-1.55	-0.61
5011.9	-1.07	0.09	0.05	0.05	-0.41	-0.71	-1.11	-1.61	-1.61	-1.71	-1.61	-2.11	-1.81	-0.61
5308.8	-1.10	-0.01	-0.21	-0.15	-0.21	-0.71	-0.88	-1.55	-1.51	-1.85	-2.11	-2.18	-2.31	-0.91
5623.4	-1.12	0.34	0.04	-0.36	-0.26	-0.72	-0.86	-1.46	-1.66	-1.79	-2.06	-2.26	-2.66	-1.16
5956.6	-1.25	0.43	0.27	-0.27	-0.47	-0.53	-0.87	-1.43	-2.07	-2.17	-2.57	-2.73	-3.30	-1.67
6309.6	-1.38	0.40	0.30	0.00	-0.60	-0.50	-1.20	-1.60	-2.30	-2.50	-2.57	-3.10	-3.40	-1.70
6683.4	-1.38	0.42	0.26	0.16	-0.41	-0.44	-1.21	-1.74	-2.61	-2.61	-2.44	-3.04	-3.31	-1.64
7079.5	-1.47	0.68	0.48	0.18	-0.12	-0.89	-1.32	-2.12	-3.15	-2.35	-2.32	-3.02	-3.39	-1.72
7498.9	-1.36	0.56	0.49	0.39	0.26	-0.84	-1.41	-2.14	-3.04	-2.14	-2.24	-2.81	-3.38	-1.74
7943.3	-1.45	0.77	0.47	0.57	0.17	-0.77	-1.63	-2.30	-2.70	-2.67	-2.77	-2.63	-3.73	-2.23
8414.0	-1.34	0.80	0.67	0.47	0.37	-0.53	-1.63	-1.63	-2.13	-3.13	-3.33	-2.83	-4.03	-2.67
8912.5	-1.08	1.18	0.98	0.78	0.58	-0.12	-1.02	-1.02	-2.02	-3.62	-3.52	-2.52	-4.32	-3.12
9440.6	-0.93	1.53	1.16	0.96	0.56	0.16	-0.64	-0.94	-2.04	-3.94	-3.24	-2.24	-4.34	-3.44
10000.0	-1.05	1.51	1.51	1.07	0.64	0.37	-0.59	-1.89	-2.69	-3.66	-3.29	-2.69	-5.03	-4.19
10592.5	-1.18	1.68	1.41	1.48	0.88	0.28	-1.02	-3.02	-3.02	-3.12	-3.52	-3.02	-5.22	-4.82
11220.2	-1.29	1.75	1.72	1.32	1.12	0.12	-1.58	-3.31	-2.88	-3.48	-3.78	-3.08	-5.38	-5.28
11885.0	-1.08	2.45	1.91	1.81	1.55	0.21	-1.45	-2.32	-2.99	-4.49	-3.59	-3.29	-4.89	-5.59
12589.3	-0.91	2.59	2.53	2.03	1.63	0.33	-0.87	-1.54	-3.67	-4.97	-3.57	-3.81	-4.71	-6.47
13335.2	-0.89	2.27	2.27	2.57	1.87	0.67	-0.73	-2.33	-3.83	-3.83	-5.13	-4.83	-5.23	-8.33
14125.4	-0.95	3.65	2.75	2.71	1.91	0.75	-1.12	-3.65	-3.12	-4.12	-6.15	-4.79	-5.35	-10.75
14962.4	-0.83	4.56	4.06	3.09	2.36	0.49	-1.58	-3.01	-4.14	-5.54	-5.34	-4.68	-5.74	-15.04
15848.9	-0.73	4.46	4.10	3.40	2.60	0.30	-1.20	-1.90	-6.24	-4.70	-5.87	-5.14	-7.54	-25.90
16788.0	-1.20	4.00	3.60	3.00	2.20	-0.20	-1.07	-3.30	-5.50	-5.54	-7.80	-5.60	-8.90	-20.74
17782.8	-2.29	3.26	2.83	2.43	0.93	-0.77	-2.87	-6.87	-5.17	-9.27	-7.21	-6.37	-9.11	-16.77
18836.5	-3.58	2.36	1.56	1.46	-0.07	-1.94	-5.50	-6.54	-9.27	-7.47	-11.44	-8.60	-9.24	-19.14
19952.6	-4.82	1.23	0.46	0.56	-1.30	-3.30	-6.37	-8.10	-10.00	-12.44	-11.24	-10.80	-9.77	-26.33

Table 6: Typical Directional Response of EPS2106-2 with 377B20

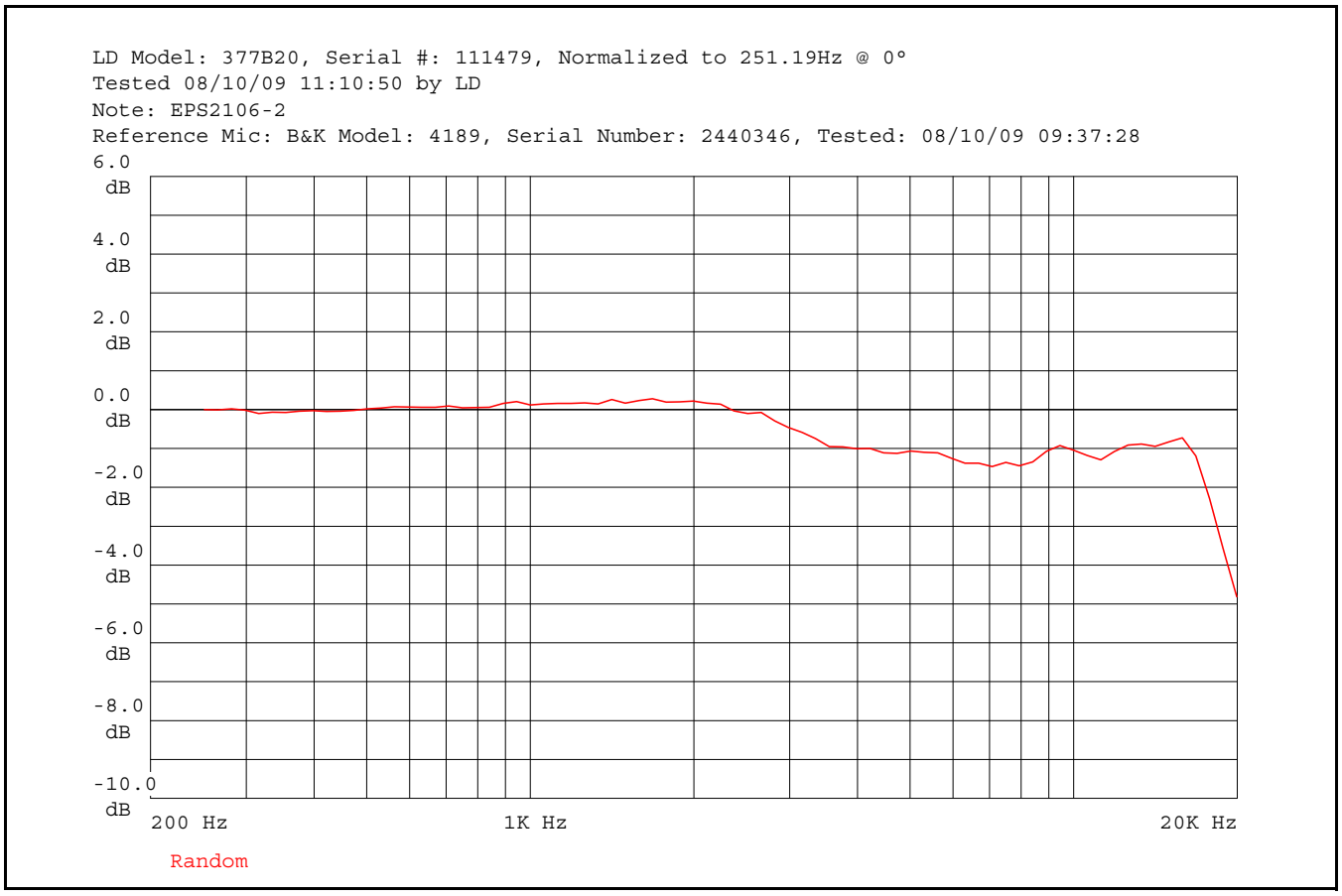

Figure 14 Typical EPS2106-2 Random Response with 377B20

Free-field Microphone 377B02

The directional response data shown in Figure 15 is for an EPS2106-ICP with a 377B02 free-field microphone and a PRM831 microphone preamplifier.

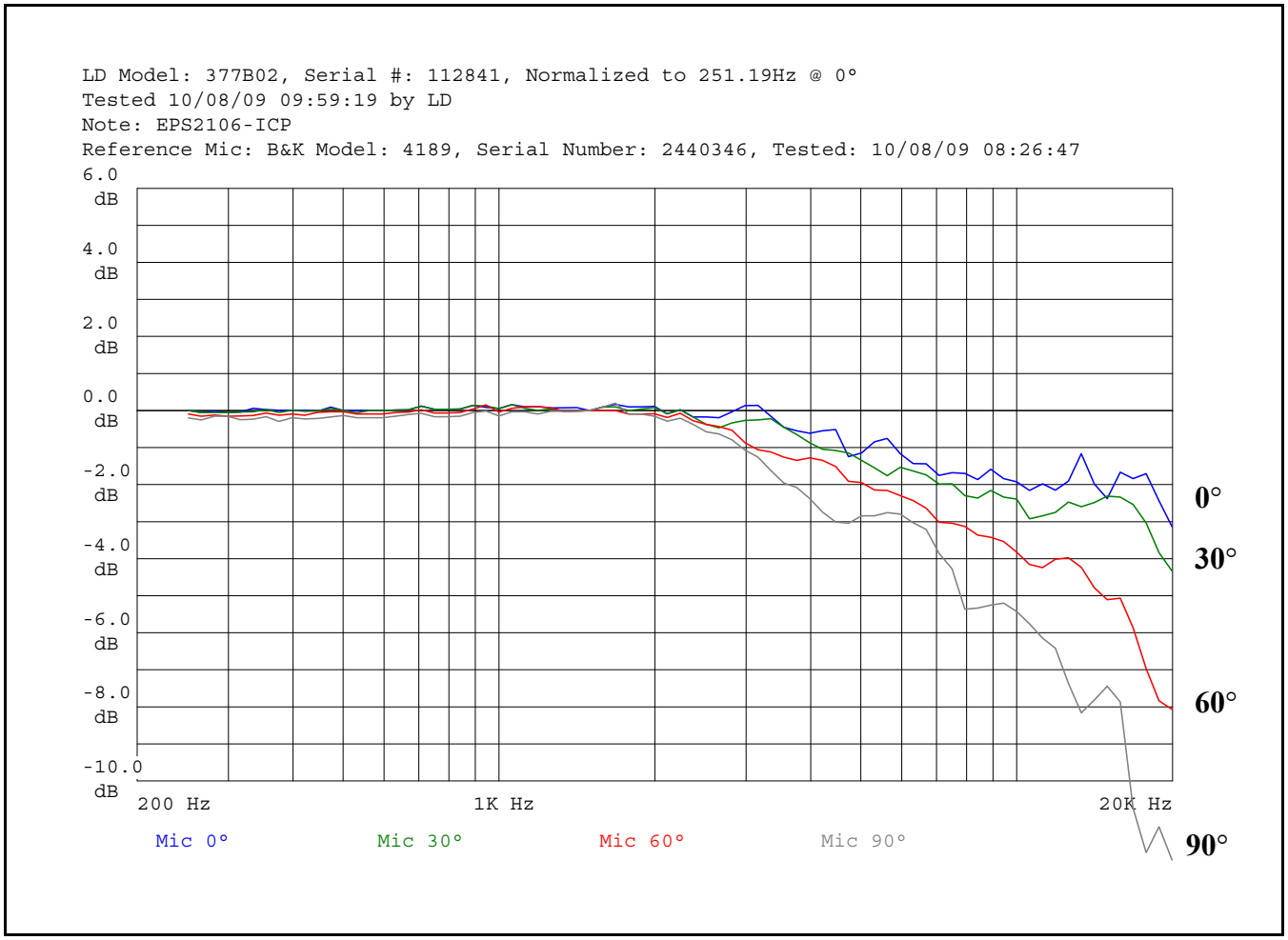

Figure 15 Typical EPS2106-ICP Directional Response with 377B02: 0°, 30°, 60°, 90°

The directional response data shown in Table 7 is for an EPS2106-ICP with a 377B02 free-field microphone and a PRM831 microphone preamplifier.

Directional Response of typical 377B02 Microphone with EPS2106-ICP (dB)														
Frequency		Angle (degrees)												
(Hz)	Random	0	15	30	45	60	75	90	105	120	135	150	165	180
251.2	-0.04	-0.05	-0.05	-0.05	-0.15	-0.15	-0.22	-0.25	-0.25	-0.25	-0.32	-0.35	-0.35	-0.35
266.1	-0.06	-0.11	-0.11	-0.11	-0.11	-0.21	-0.21	-0.31	-0.31	-0.31	-0.31	-0.31	-0.38	-0.34
281.8	-0.02	-0.08	-0.08	-0.11	-0.11	-0.18	-0.21	-0.21	-0.21	-0.28	-0.28	-0.31	-0.31	-0.31
298.5	-0.05	-0.11	-0.11	-0.11	-0.11	-0.21	-0.21	-0.21	-0.31	-0.31	-0.31	-0.34	-0.31	-0.31
316.2	-0.10	-0.10	-0.07	-0.10	-0.17	-0.20	-0.20	-0.30	-0.37	-0.40	-0.43	-0.50	-0.43	-0.47
335.0	-0.08	0.01	-0.02	-0.09	-0.09	-0.19	-0.19	-0.29	-0.32	-0.39	-0.39	-0.42	-0.46	-0.39
354.8	-0.04	-0.02	-0.02	-0.02	-0.09	-0.12	-0.19	-0.22	-0.29	-0.32	-0.36	-0.39	-0.42	-0.36
375.8	-0.11	-0.05	-0.05	-0.11	-0.15	-0.18	-0.25	-0.35	-0.35	-0.41	-0.45	-0.45	-0.45	-0.45
398.1	-0.06	-0.05	-0.05	-0.05	-0.15	-0.15	-0.18	-0.25	-0.35	-0.35	-0.35	-0.41	-0.38	-0.35
421.7	-0.06	-0.05	-0.08	-0.08	-0.08	-0.18	-0.18	-0.28	-0.28	-0.35	-0.38	-0.38	-0.38	-0.38
446.7	-0.04	-0.07	-0.07	-0.07	-0.07	-0.10	-0.17	-0.27	-0.27	-0.34	-0.34	-0.37	-0.37	-0.37
473.2	0.01	0.04	0.04	0.01	-0.06	-0.09	-0.16	-0.23	-0.26	-0.26	-0.26	-0.29	-0.26	-0.26
501.2	0.00	-0.06	0.01	-0.06	-0.09	-0.09	-0.19	-0.19	-0.19	-0.29	-0.29	-0.29	-0.26	-0.19
530.9	-0.05	-0.05	-0.05	-0.12	-0.15	-0.15	-0.22	-0.25	-0.25	-0.35	-0.35	-0.35	-0.25	-0.25
562.3	0.00	-0.05	-0.05	-0.05	-0.05	-0.15	-0.15	-0.25	-0.25	-0.25	-0.32	-0.25	-0.25	-0.15
595.7	-0.01	-0.05	-0.05	-0.05	-0.12	-0.15	-0.15	-0.25	-0.25	-0.25	-0.35	-0.25	-0.25	-0.18
631.0	0.01	-0.04	-0.04	-0.04	-0.11	-0.11	-0.14	-0.21	-0.21	-0.27	-0.31	-0.24	-0.21	-0.14
668.3	0.03	-0.03	0.00	-0.03	-0.03	-0.10	-0.13	-0.16	-0.23	-0.23	-0.23	-0.23	-0.23	-0.13
708.0	0.05	0.07	0.07	0.07	-0.03	-0.03	-0.13	-0.13	-0.23	-0.23	-0.33	-0.23	-0.23	-0.13
749.9	0.00	-0.02	-0.02	-0.02	-0.02	-0.12	-0.19	-0.22	-0.22	-0.32	-0.32	-0.32	-0.22	-0.12
794.3	0.00	-0.02	-0.02	-0.02	-0.02	-0.12	-0.12	-0.22	-0.22	-0.32	-0.32	-0.32	-0.22	-0.12
841.4	0.00	-0.01	-0.01	-0.01	-0.01	-0.11	-0.11	-0.21	-0.31	-0.31	-0.31	-0.31	-0.28	-0.11
891.3	0.11	0.09	0.09	0.09	0.09	-0.01	-0.01	-0.11	-0.11	-0.21	-0.21	-0.21	-0.11	-0.01
944.1	0.17	0.03	0.03	0.07	0.10	0.10	0.00	-0.07	-0.07	-0.17	-0.13	0.00	0.00	0.20
1000.0	0.00	0.00	0.00	0.00	0.00	-0.10	-0.10	-0.20	-0.30	-0.30	-0.40	-0.30	-0.30	-0.10
1059.3	0.11	0.11	0.11	0.11	0.11	0.01	0.01	-0.09	-0.19	-0.19	-0.29	-0.19	-0.19	0.04
1122.0	0.15	0.04	0.04	0.01	0.01	0.04	0.01	-0.09	-0.09	-0.09	-0.09	-0.09	-0.09	0.11
1188.5	0.10	0.05	-0.05	-0.05	-0.01	0.05	-0.05	-0.15	-0.15	-0.15	-0.18	-0.15	-0.15	0.09
1258.9	0.11	0.02	0.02	-0.01	0.02	0.02	0.02	-0.08	-0.18	-0.18	-0.18	-0.18	-0.18	0.02
1333.5	0.06	0.02	0.02	-0.08	-0.08	-0.08	-0.08	-0.08	-0.18	-0.18	-0.28	-0.28	-0.08	0.12
1412.5	0.06	0.03	-0.07	-0.07	-0.07	-0.07	-0.07	-0.07	-0.17	-0.17	-0.27	-0.27	-0.07	0.13
1496.2	0.07	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.16	-0.16	-0.26	-0.26	-0.06	0.14
1584.9	0.16	0.04	0.04	0.04	0.01	-0.06	-0.03	0.04	-0.06	-0.09	-0.16	-0.09	0.17	0.44
1678.8	0.21	0.12	0.05	0.05	0.02	-0.05	-0.02	0.15	0.05	-0.05	-0.05	-0.05	0.25	0.55
1778.3	0.06	0.05	0.05	-0.05	-0.05	-0.15	-0.15	-0.15	-0.15	-0.25	-0.08	-0.15	0.05	0.35
1883.7	0.08	0.05	0.05	-0.02	-0.05	-0.15	-0.15	-0.15	-0.15	-0.15	-0.05	-0.15	0.05	0.35
1995.3	0.07	0.06	0.06	0.03	-0.04	-0.14	-0.14	-0.21	-0.04	-0.31	-0.14	-0.14	0.06	0.46
2113.5	-0.10	-0.14	-0.14	-0.14	-0.14	-0.24	-0.34	-0.34	-0.24	-0.44	-0.44	-0.34	-0.14	0.46
2238.7	-0.01	-0.03	-0.03	-0.03	-0.06	-0.13	-0.23	-0.26	-0.23	-0.33	-0.33	-0.23	-0.13	0.57
2371.4	-0.22	-0.23	-0.26	-0.23	-0.23	-0.33	-0.43	-0.43	-0.50	-0.53	-0.53	-0.53	-0.33	0.37
2511.9	-0.39	-0.23	-0.33	-0.43	-0.43	-0.43	-0.53	-0.63	-0.73	-0.73	-0.73	-0.63	-0.43	0.17
2660.7	-0.42	-0.25	-0.32	-0.52	-0.52	-0.49	-0.62	-0.69	-0.72	-0.72	-0.72	-0.62	-0.42	0.18
2818.4	-0.53	-0.09	-0.19	-0.39	-0.65	-0.59	-0.69	-0.85	-0.99	-0.79	-0.92	-0.79	-0.32	-0.05
2985.4	-0.79	0.08	-0.12	-0.32	-0.72	-0.92	-0.92	-1.12	-1.22	-1.22	-1.42	-1.32	-0.62	-0.22
3162.3	-0.96	0.09	-0.01	-0.31	-0.71	-1.11	-1.11	-1.31	-1.51	-1.51	-1.71	-1.61	-0.81	-0.31
3349.7	-1.20	-0.21	-0.18	-0.28	-0.71	-1.18	-1.48	-1.68	-1.88	-1.88	-2.01	-2.08	-0.81	-0.44
3548.1	-1.43	-0.51	-0.51	-0.51	-0.64	-1.31	-1.81	-2.01	-2.21	-2.34	-2.21	-2.11	-0.84	-0.71
3758.4	-1.55	-0.60	-0.70	-0.70	-0.77	-1.40	-1.93	-2.13	-2.40	-2.43	-2.57	-1.80	-0.90	-0.83
3981.1	-1.75	-0.67	-0.80	-0.93	-1.03	-1.33	-2.03	-2.43	-2.63	-2.77	-2.90	-1.93	-1.33	-1.13
4217.0	-1.97	-0.60	-0.80	-1.10	-1.30	-1.40	-2.30	-2.80	-2.80	-3.00	-2.70	-2.60	-1.90	-1.40
4466.8	-2.08	-0.57	-0.67	-1.13	-1.43	-1.57	-2.40	-3.07	-2.97	-2.87	-2.67	-2.97	-2.13	-1.27
4731.5	-2.33	-1.30	-1.30	-1.20	-1.70	-1.97	-2.30	-3.10	-3.30	-3.30	-3.10	-2.93	-3.00	-1.80
5011.9	-2.24	-1.20	-1.30	-1.40	-1.60	-2.00	-2.27	-2.90	-3.00	-3.20	-2.83	-2.70	-3.10	-1.80
5308.8	-2.40	-0.90	-1.20	-1.60	-1.80	-2.20	-2.33	-2.90	-2.97	-3.20	-3.50	-3.20	-3.70	-2.17
5623.4	-2.52	-0.81	-1.01	-1.81	-1.94	-2.21	-2.51	-2.81	-3.21	-3.31	-3.61	-3.71	-3.91	-2.48
5956.6	-2.76	-1.22	-1.29	-1.59	-2.25	-2.35	-2.69	-2.85	-3.55	-3.62	-4.19	-4.45	-4.49	-3.09
6309.6	-3.04	-1.49	-1.59	-1.69	-2.19	-2.49	-3.09	-3.09	-3.89	-4.29	-4.65	-4.89	-4.89	-3.59
6683.4	-3.17	-1.50	-1.66	-1.80	-2.10	-2.70	-3.10	-3.26	-4.20	-4.56	-4.70	-5.06	-4.93	-3.76
7079.5	-3.52	-1.81	-1.81	-2.04	-2.11	-3.07	-3.37	-3.91	-5.11	-4.97	-4.87	-5.27	-5.21	-3.94
7498.9	-3.66	-1.73	-1.93	-2.03	-2.23	-3.10	-3.63	-4.33	-5.53	-4.93	-4.73	-5.33	-5.33	-4.03
7943.3	-4.04	-1.75	-1.92	-2.35	-2.52	-3.19	-4.32	-5.42	-5.75	-5.15	-5.12	-5.52	-5.82	-4.32
8414.0	-4.19	-1.92	-2.02	-2.42	-2.72	-3.42	-4.55	-5.39	-5.49	-5.62	-5.42	-5.52	-6.32	-4.72
8912.5	-4.30	-1.64	-1.91	-2.21	-2.91	-3.48	-4.34	-5.31	-5.31	-6.21	-6.31	-6.21	-7.21	-5.71
9440.6	-4.43	-1.89	-1.92	-2.39	-2.89	-3.59	-4.29	-5.26	-5.19	-7.06	-6.99	-6.36	-7.79	-6.29
10000.0	-4.80	-1.98	-2.38	-2.45	-3.08	-3.88	-4.61	-5.48	-5.78	-8.55	-7.55	-6.48	-8.38	-7.28
10592.5	-5.17	-2.21	-2.48	-2.98	-3.18	-4.21	-5.18	-5.81	-6.71	-8.61	-7.81	-6.71	-8.61	-8.11
11220.2	-5.35	-2.03	-2.53	-2.90	-3.27	-4.30	-5.57	-6.20	-7.63	-7.63	-8.10	-7.10	-9.10	-9.47
11885.0	-5.43	-2.21	-2.34	-2.81	-3.37	-4.07	-5.61	-6.47	-8.24	-7.17	-8.87	-7.81	-9.61	-11.21
12589.3	-5.67	-1.96	-2.49	-2.53	-3.33	-4.03	-5.73	-7.43	-8.26	-8.76	-9.73	-8.43	-10.39	-13.23
13335.2	-5.85	-1.22	-1.92	-2.65	-3.32	-4.29	-6.02	-8.22	-8.32	-10.72	-8.72	-8.72	-10.92	-14.62
14125.4	-6.07	-2.04	-2.04	-2.54	-3.31	-4.84	-6.64	-7.87	-9.14	-9.71	-9.17	-9.94	-11.91	-16.44
14962.4	-6.31	-2.43	-2.83	-2.36	-3.53	-5.16	-6.46	-7.50	-10.63	-8.96	-11.53	-10.93	-12.03	-16.40
15848.9	-6.43	-1.72	-2.42	-2.39	-3.52	-5.12	-6.42	-7.92	-11.06	-10.72	-12.32	-10.82	-11.62	-16.92
16788.0	-7.06	-1.89	-2.46	-2.59	-3.76	-5.92	-7.39	-10.79	-10.09	-14.29	-11.66	-12.06	-12.56	-18.66
17782.8	-7.87	-1.76	-2.76	-3.09	-4.16	-7.03	-9.53	-11.99	-11.33	-12.09	-15.39	-13.26	-13.09	-22.09
18836.5	-8.83	-2.49	-3.29	-3.89	-5.12	-7.89	-10.46	-11.29	-16.99	-14.52	-16.06	-14.29	-13.99	-27.59
19952.6	-9.36	-3.19	-4.09	-4.39	-5.72	-8.12	-10.52	-12.19	-14.12	-18.06	-16.16	-17.32	-16.62	-28.82

Table 7: Typical Directional Response of EPS2106-ICP with 377B02

Random Incidence Microphone 377B20

The directional response data shown in Figure 16 is for an EPS2106-ICP with a 377B20 random incidence microphone and a PRM831 microphone preamplifier.

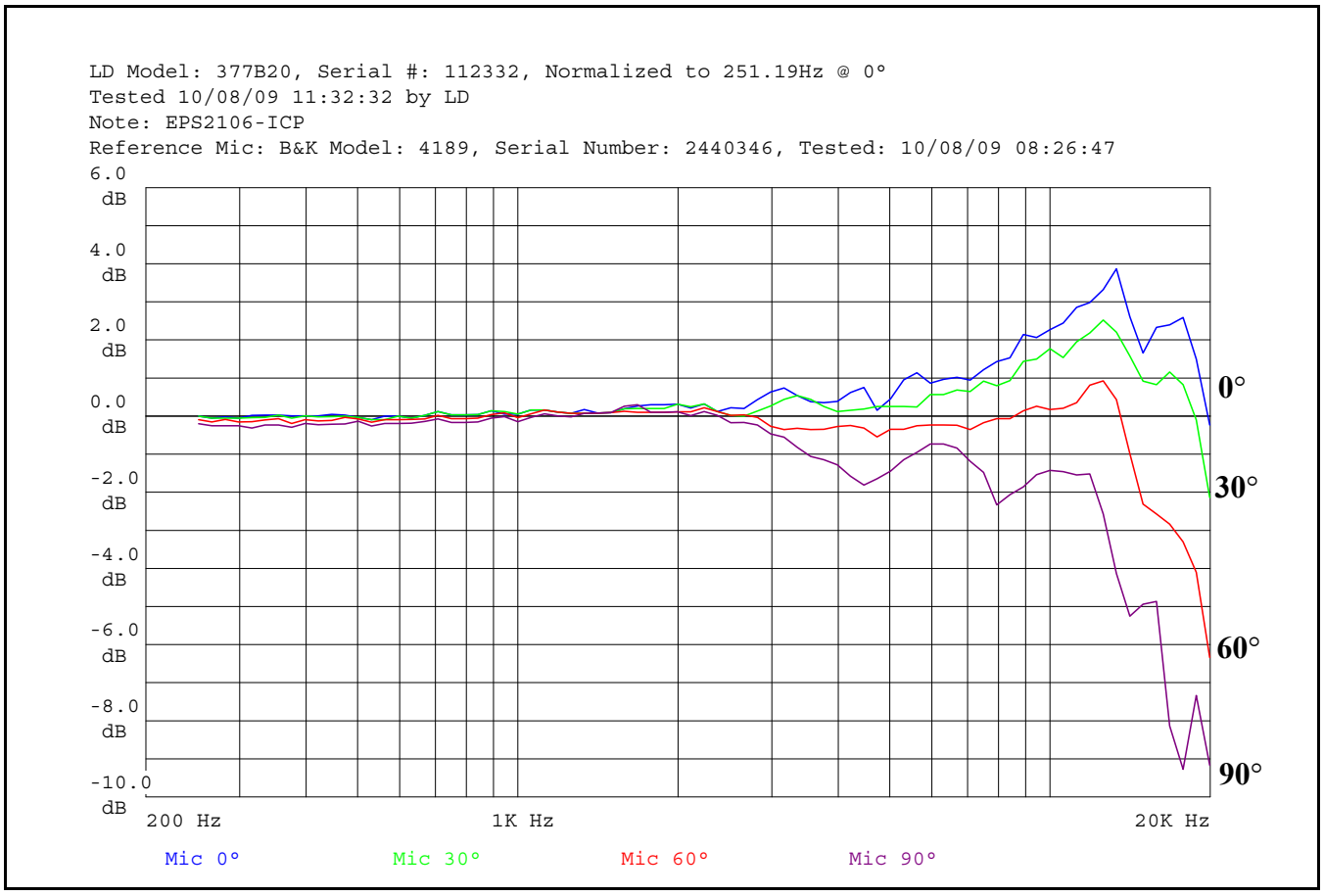

Figure 16 Typical EPS2106-ICP Directional Response with 377B20: 0°, 30°, 60°, 90°

The directional response data shown in Table 7 is for an EPS2106-ICP with a 377B20 random incidence microphone and a PRM831 microphone preamplifier.

Directional Response of typical 377B20 Microphone with EPS2106-ICP (dB)														
Frequency		Angle (degrees)												
(Hz)	Random	0	15	30	45	60	75	90	105	120	135	150	165	180
251.2	-0.08	-0.05	-0.05	-0.05	-0.15	-0.15	-0.22	-0.25	-0.32	-0.32	-0.35	-0.35	-0.39	-0.35
266.1	-0.10	-0.11	-0.11	-0.11	-0.18	-0.21	-0.21	-0.31	-0.28	-0.31	-0.38	-0.41	-0.41	-0.34
281.8	-0.08	-0.08	-0.08	-0.11	-0.11	-0.14	-0.21	-0.31	-0.31	-0.31	-0.31	-0.34	-0.38	-0.34
298.5	-0.09	-0.11	-0.11	-0.11	-0.14	-0.21	-0.21	-0.31	-0.31	-0.31	-0.31	-0.34	-0.34	-0.31
316.2	-0.15	-0.03	-0.03	-0.10	-0.13	-0.20	-0.30	-0.37	-0.40	-0.40	-0.50	-0.50	-0.50	-0.47
335.0	-0.10	-0.02	-0.02	-0.09	-0.12	-0.16	-0.22	-0.29	-0.32	-0.39	-0.39	-0.42	-0.39	-0.42
354.8	-0.09	-0.02	-0.02	-0.02	-0.09	-0.12	-0.22	-0.29	-0.32	-0.39	-0.39	-0.42	-0.39	-0.36
375.8	-0.14	-0.05	-0.05	-0.11	-0.15	-0.25	-0.25	-0.35	-0.35	-0.45	-0.45	-0.45	-0.45	-0.45
398.1	-0.08	-0.05	-0.05	-0.05	-0.11	-0.15	-0.21	-0.25	-0.35	-0.35	-0.35	-0.38	-0.41	-0.35
421.7	-0.09	-0.05	-0.01	-0.08	-0.08	-0.18	-0.21	-0.28	-0.31	-0.38	-0.38	-0.38	-0.38	-0.38
446.7	-0.06	0.00	0.03	-0.07	-0.07	-0.17	-0.17	-0.27	-0.27	-0.34	-0.37	-0.37	-0.37	-0.30
473.2	-0.06	-0.03	-0.03	-0.06	-0.06	-0.09	-0.16	-0.26	-0.29	-0.36	-0.36	-0.36	-0.36	-0.33
501.2	-0.04	-0.09	-0.09	-0.09	-0.09	-0.13	-0.19	-0.19	-0.29	-0.29	-0.29	-0.29	-0.29	-0.19
530.9	-0.11	-0.15	-0.15	-0.15	-0.15	-0.22	-0.25	-0.32	-0.35	-0.35	-0.35	-0.35	-0.35	-0.28
562.3	-0.08	-0.05	-0.05	-0.15	-0.15	-0.15	-0.18	-0.25	-0.35	-0.35	-0.35	-0.35	-0.35	-0.25
595.7	-0.06	-0.05	-0.05	-0.05	-0.15	-0.15	-0.15	-0.25	-0.28	-0.35	-0.35	-0.35	-0.25	-0.25
631.0	-0.06	-0.11	-0.07	-0.11	-0.11	-0.14	-0.21	-0.24	-0.31	-0.31	-0.31	-0.31	-0.31	-0.21
668.3	0.00	-0.03	-0.03	-0.03	-0.03	-0.13	-0.13	-0.20	-0.23	-0.26	-0.26	-0.23	-0.23	-0.13
708.0	0.02	0.07	0.07	0.07	-0.03	-0.03	-0.13	-0.13	-0.23	-0.33	-0.33	-0.23	-0.23	-0.13
749.9	-0.04	-0.02	-0.02	-0.02	-0.02	-0.12	-0.12	-0.22	-0.29	-0.32	-0.42	-0.32	-0.32	-0.12
794.3	-0.04	-0.02	-0.02	-0.02	-0.02	-0.12	-0.15	-0.22	-0.32	-0.32	-0.32	-0.32	-0.32	-0.12
841.4	-0.02	-0.01	-0.01	-0.01	-0.11	-0.11	-0.11	-0.21	-0.21	-0.31	-0.31	-0.31	-0.21	-0.11
891.3	0.08	0.09	0.09	0.09	0.09	-0.01	-0.04	-0.11	-0.14	-0.21	-0.21	-0.21	-0.11	-0.01
944.1	0.11	0.00	0.03	0.07	0.07	0.03	0.00	-0.07	-0.10	-0.20	-0.20	-0.10	0.00	0.20
1000.0	0.00	0.00	0.00	0.00	0.00	-0.10	-0.10	-0.20	-0.20	-0.30	-0.30	-0.30	-0.30	-0.10
1059.3	0.12	0.11	0.11	0.11	0.11	0.01	0.01	-0.09	-0.09	-0.19	-0.19	-0.09	-0.09	0.11
1122.0	0.18	0.11	0.11	0.11	0.11	0.11	0.11	0.01	-0.09	-0.09	-0.09	-0.09	-0.09	0.11
1188.5	0.13	0.05	0.05	0.05	0.05	0.05	0.05	-0.05	-0.15	-0.08	-0.15	-0.05	-0.15	0.05
1258.9	0.09	0.02	0.02	0.02	0.02	0.02	0.02	-0.08	-0.18	-0.15	-0.18	-0.15	-0.18	0.12
1333.5	0.14	0.12	0.12	0.02	0.02	0.02	0.02	0.02	-0.08	-0.08	-0.18	-0.18	0.02	0.22
1412.5	0.14	0.03	0.03	0.03	0.03	0.03	0.03	0.03	-0.07	-0.07	-0.17	-0.17	0.03	0.16
1496.2	0.15	0.04	0.04	0.04	0.04	0.04	0.04	0.04	-0.06	-0.06	-0.16	-0.16	0.04	0.24
1584.9	0.26	0.14	0.14	0.14	0.11	0.07	0.07	0.21	0.07	0.01	-0.03	0.04	0.31	0.54
1678.8	0.30	0.22	0.22	0.15	0.08	0.05	0.15	0.25	0.15	0.05	0.05	0.05	0.35	0.65
1778.3	0.23	0.25	0.25	0.15	0.12	0.05	0.05	0.05	0.05	-0.05	0.05	0.05	0.18	0.55
1883.7	0.24	0.25	0.25	0.15	0.15	0.05	0.05	0.05	0.05	-0.05	0.05	0.05	0.25	0.55
1995.3	0.28	0.26	0.26	0.26	0.16	0.06	0.06	0.06	0.16	-0.04	0.13	0.16	0.26	0.76
2113.5	0.19	0.16	0.16	0.19	0.16	0.06	0.03	-0.04	0.06	-0.14	-0.14	-0.04	0.16	0.76
2238.7	0.29	0.27	0.27	0.27	0.27	0.17	0.07	0.07	0.14	-0.03	-0.03	0.07	0.27	0.87
2371.4	0.14	0.07	0.07	0.07	0.17	0.07	-0.03	-0.03	-0.13	-0.13	-0.13	-0.13	0.07	0.77
2511.9	0.03	0.17	0.10	-0.03	-0.03	-0.03	-0.13	-0.23	-0.23	-0.23	-0.23	-0.16	0.04	0.67
2660.7	0.01	0.15	0.08	-0.05	-0.05	-0.02	-0.12	-0.22	-0.32	-0.32	-0.22	-0.15	-0.02	0.65
2818.4	-0.01	0.38	0.31	0.08	-0.19	-0.09	-0.19	-0.29	-0.39	-0.19	-0.39	-0.25	0.21	0.45
2985.4	-0.21	0.58	0.48	0.21	-0.12	-0.32	-0.32	-0.52	-0.62	-0.62	-0.82	-0.62	0.05	0.31
3162.3	-0.29	0.69	0.69	0.39	-0.01	-0.41	-0.41	-0.61	-0.81	-0.81	-1.01	-0.91	-0.11	0.39
3349.7	-0.44	0.49	0.52	0.49	0.02	-0.38	-0.68	-0.88	-1.08	-1.08	-1.24	-1.28	-0.08	0.32
3548.1	-0.58	0.32	0.29	0.39	0.19	-0.41	-0.94	-1.11	-1.31	-1.51	-1.31	-1.31	0.02	0.19
3758.4	-0.62	0.30	0.30	0.20	0.20	-0.40	-1.00	-1.20	-1.40	-1.50	-1.63	-0.90	0.07	0.13
3981.1	-0.72	0.33	0.27	0.07	-0.03	-0.33	-1.00	-1.33	-1.53	-1.73	-1.77	-0.83	-0.27	-0.13
4217.0	-0.83	0.57	0.40	0.10	-0.10	-0.30	-1.13	-1.63	-1.73	-1.80	-1.53	-1.37	-0.70	-0.20
4466.8	-0.87	0.70	0.53	0.13	-0.17	-0.37	-1.17	-1.87	-1.77	-1.67	-1.47	-1.70	-0.87	0.00
4731.5	-0.93	0.10	0.10	0.20	-0.30	-0.60	-0.90	-1.70	-1.80	-1.80	-1.60	-1.60	-1.50	-0.30
5011.9	-0.73	0.40	0.30	0.20	0.00	-0.40	-0.80	-1.50	-1.50	-1.70	-1.30	-1.20	-1.50	-0.20
5308.8	-0.64	0.90	0.60	0.20	0.03	-0.40	-0.60	-1.20	-1.23	-1.40	-1.70	-1.30	-1.83	-0.30
5623.4	-0.64	1.09	0.79	0.19	-0.01	-0.31	-0.61	-1.01	-1.31	-1.41	-1.71	-1.71	-2.01	-0.44
5956.6	-0.71	0.81	0.75	0.51	-0.19	-0.29	-0.62	-0.79	-1.49	-1.55	-2.09	-2.29	-2.39	-0.99
6309.6	-0.76	0.91	0.71	0.51	0.11	-0.29	-0.79	-0.79	-1.49	-1.99	-2.29	-2.49	-2.49	-1.29
6683.4	-0.76	0.97	0.80	0.64	0.30	-0.30	-0.70	-0.90	-1.70	-2.10	-2.26	-2.60	-2.50	-1.30
7079.5	-0.88	0.89	0.86	0.59	0.49	-0.41	-0.71	-1.24	-2.37	-2.27	-2.21	-2.61	-2.57	-1.31
7498.9	-0.86	1.17	0.87	0.87	0.57	-0.23	-0.83	-1.53	-2.73	-2.13	-1.93	-2.53	-2.53	-1.20
7943.3	-1.02	1.38	1.18	0.75	0.58	-0.12	-1.32	-2.39	-2.85	-2.22	-2.02	-2.52	-2.72	-1.15
8414.0	-0.93	1.48	1.38	0.88	0.58	-0.12	-1.22	-2.12	-2.42	-2.42	-2.02	-2.22	-3.02	-1.32
8912.5	-0.72	2.09	1.79	1.39	0.79	0.09	-0.81	-1.91	-1.81	-2.51	-2.51	-2.51	-3.51	-1.91
9440.6	-0.63	2.01	2.01	1.44	0.91	0.21	-0.49	-1.59	-1.39	-3.09	-2.99	-2.49	-3.96	-2.39
10000.0	-0.73	2.22	1.92	1.72	1.02	0.12	-0.58	-1.48	-1.65	-4.45	-3.48	-2.38	-4.38	-3.18
10592.5	-0.80	2.39	2.09	1.49	1.29	0.16	-0.74	-1.51	-2.31	-4.61	-3.51	-2.41	-4.34	-3.68
11220.2	-0.73	2.80	2.30	1.90	1.50	0.30	-1.00	-1.60	-3.10	-3.43	-3.50	-2.40	-4.50	-4.77
11885.0	-0.58	2.93	2.66	2.13	1.63	0.76	-0.87	-1.57	-3.67	-2.47	-3.97	-2.81	-4.67	-6.27
12589.3	-0.79	3.27	2.61	2.47	1.67	0.87	-0.93	-2.63	-3.76	-3.73	-5.13	-3.36	-5.33	-8.13
13335.2	-1.30	3.81	3.08	2.15	1.41	0.38	-1.72	-4.19	-4.09	-6.52	-4.72	-3.85	-6.02	-9.72
14125.4	-2.45	2.56	2.26	1.53	0.56	-1.04	-3.34	-5.31	-5.97	-7.54	-5.64	-5.94	-7.54	-11.94
14962.4	-3.54	1.60	0.70	0.87	-0.43	-2.36	-4.26	-5.00	-8.76	-7.23	-9.43	-8.63	-8.76	-12.53
15848.9	-3.70	2.28	1.28	0.78	-0.62	-2.62	-4.12	-4.92	-9.72	-8.62	-11.99	-9.22	-8.92	-13.22
16788.0	-3.76	2.34	1.51	1.11	-0.39	-2.89	-4.09	-8.19	-6.96	-12.19	-9.09	-9.76	-9.39	-14.69
17782.8	-4.07	2.54	1.37	0.77	-0.33	-3.36	-5.86	-9.33	-6.99	-8.06	-11.76	-9.86	-9.46	-17.86
18836.5	-5.07	1.44	0.54	-0.16	-1.36	-4.16	-6.86	-7.39	-13.06	-9.86	-12.96	-10.52	-10.12	-23.79
19952.6	-7.36	-0.29	-1.46	-2.19	-3.59	-6.39	-9.39	-9.22	-13.96	-20.22	-14.02	-15.49	-14.16	-25.76

Table 8: Typical Directional Response of EPS2106-ICP with 377B20

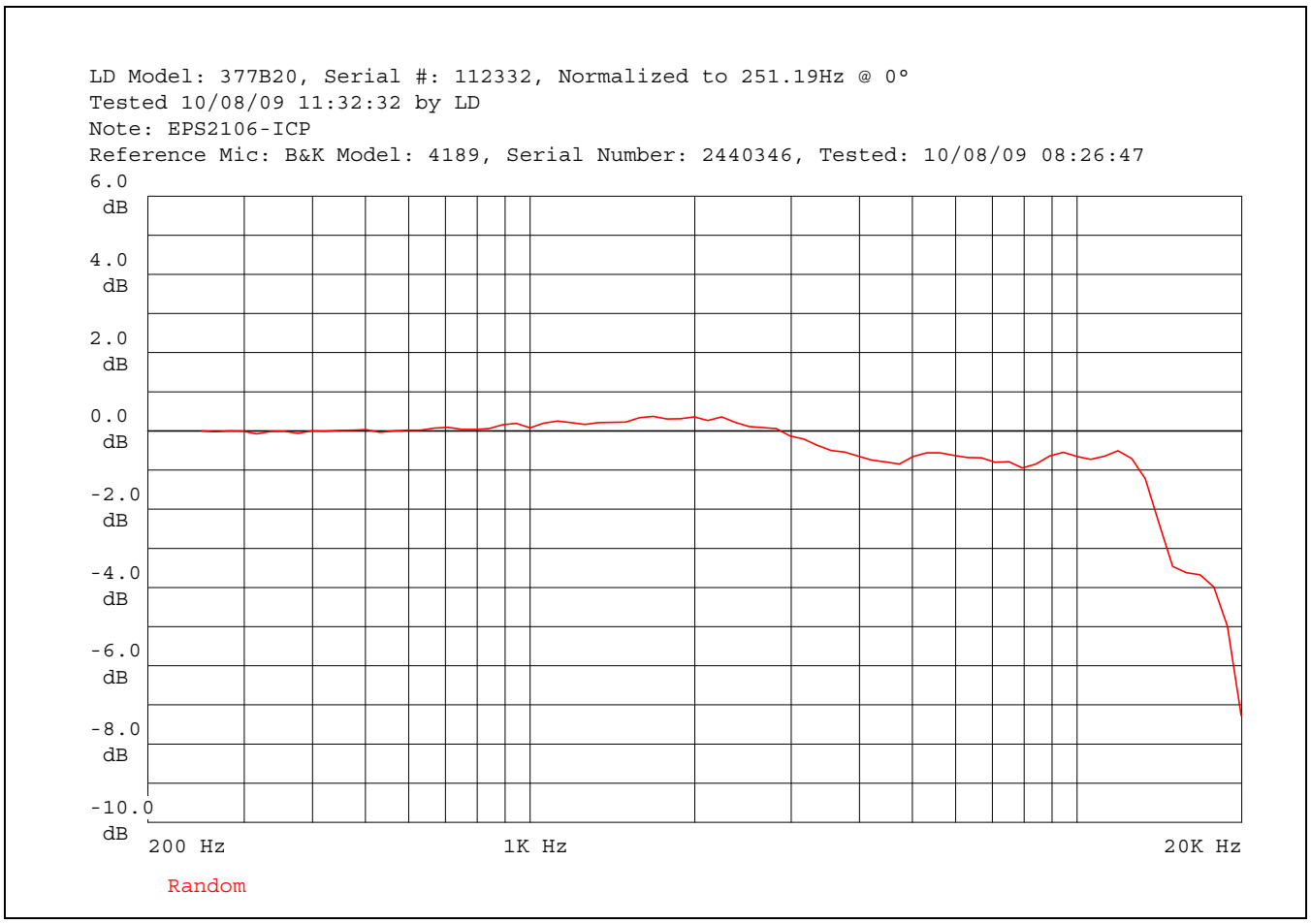

Figure 17 Typical EPS2106-ICP Random Response with 377B20

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