

# Cierra Digital Signal Processor

Adaptive digital signal processing algorithms incorporated in a multichannel device with versatile compression and dynamic directionality to greatly enhance performance and fitting flexibility.



Cierra PDI CE

Cierra PDI CC

Cierra CIC

## Feature Summary:

**Precision Frequency Resolution** to optimize fine-tuning of the response for the most unique hearing loss configurations.

**Wide Band Expansion** technology reduces microphone and low-level environmental noise.

**Programmable Indicator Tones** for low battery, volume control and multimemory.

## Standard Features:

Available in custom CE, LP, HS, CC, SE and CIC styles.

**Single and MultiMemory** options for all styles with up to three fully programmable memories accessed via push button.

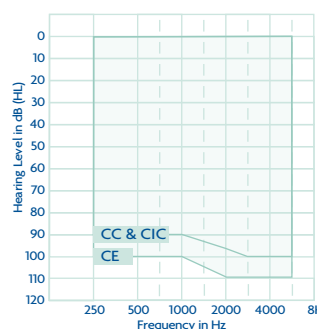
**Volume Control** standard for all styles, excluding CIC. Optional disable VC and optimal setting indicator tone features within PFS.

## Options:

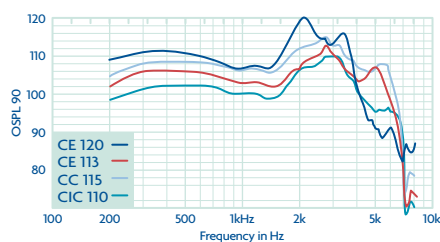
**Dynamic Precision Directional Imaging** available on multimemory CE, LP, HS and CC styles and activated in any memory of a multimemory device within PFS.

**Programmable Telecoil or Autocoil** available on multimemory CE, LP, HS and CC styles. Telecoil turned on in any memory within PFS and accessed via push button. Autocoil is programmed within Memory 2 and Memory 3 will not be accessible.

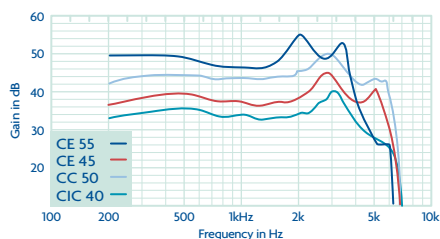
**Automatic Telephone Response (ATR)** available on multimemory CIC, SE and CC styles. The ATR is programmed within Memory 2 and Memory 3 will not be accessible.



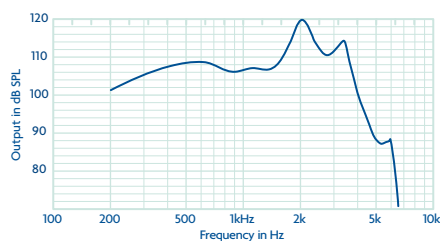
	FULL CONCHA (CE,LP)		CANAL (HS, CC, SE)		TYMPANETTE (CIC)	
	ANSI (2cc)	IEC (OES)	ANSI (2cc)	IEC (OES)	ANSI (2cc)	IEC (OES)
Peak OSPL90 (dB SPL)	113-120	123-130	110-115	119-124	110-113	119-122
HFA OSPL90 (dB SPL)	104-110	N/A	101-108	N/A	101-105	N/A
RTF OSPL90 (dB SPL)	N/A	113-121	N/A	110-116	N/A	109-113
Peak Gain (dB)	30-55	39-63	30-50	40-60	30-50	40-60
HFA Full On Gain (dB)	24-48	N/A	22-45	N/A	22-42	N/A
RTF Full On Gain (dB)	N/A	31-57	N/A	31-54	N/A	31-51
Frequency Range (kHz)	0.2-6.4	N/A	0.2-6.8	N/A	0.2-6.8	N/A
Reference Test Frequency (kHz)	1.0, 1.6, 2.5	1.6	1.0, 1.6, 2.5	1.6	1.0, 1.6, 2.5	1.6
HFA Reference Test Gain (dB)	24-33	N/A	22-31	N/A	22-28	N/A
RTF Reference Test Gain (dB)	N/A	24-46	N/A	24-41	N/A	24-38
Total Harmonic Distortion						
500 Hz (%)	<3	<3	<3	<3	<3	<3
800 Hz (%)	<3	<3	<3	<3	<3	<3
1600 Hz (%)	<3	<3	<3	<3	<3	<3
Equivalent Input Noise (dB SPL)	<28	<28	<28	<28	<28	<28
55-90 (ANSI) / 55-80 (IEC Low Level) — Test Mode						
Attack Time (ms)	5	5	5	5	5	5
Release Time 0.1-s (ms)	5-150	5-250	5-150	5-250	5-150	5-250
Release Time 2.0-s (ms)	5-150	5-250	5-150	5-250	5-150	5-250
Induction Coil Sensitivity						
HFA SPLITS (dB SPL @ RTG)	90-99	N/A	89-98	N/A	N/A	N/A
MASL (dB SPL @ FOG)	N/A	63-88	N/A	63-85	N/A	N/A
Battery Current (mA)	0.88-0.97	0.88-0.97	0.89-1.33	0.88-1.23	0.89-1.10	0.88-1.05
Idle Current (mA)	0.85-0.91	0.85-0.91	0.86-1.10	0.86-1.10	0.86-0.93	0.86-0.93
Estimated Battery Life for 16 hour day						
13 zinc-air (290 days)	19-21	19-21	N/A	N/A	N/A	N/A
312 zinc-air (160 days)	10-11	10-11	7-11	7-11	N/A	N/A
10A zinc-air (90 days)	N/A	N/A	4-6	4-6	5-6	5-6



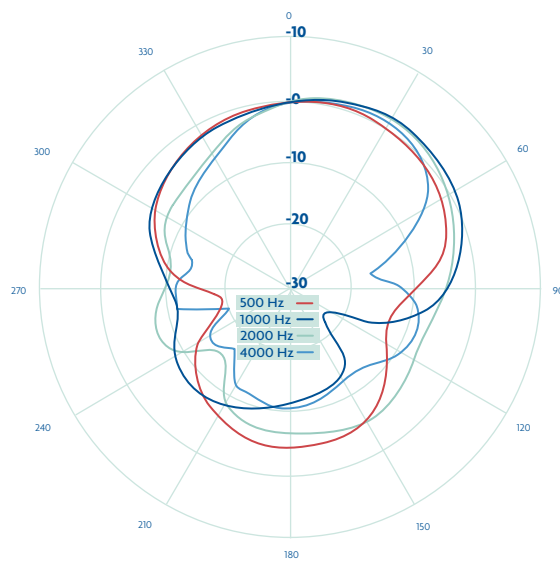
OSPL90 curves for the Power CE 120 and the highest standard matrix of the CE 113, CC 115, and the CIC 110.



Full On Gain curves for the Power CE 55 and the highest standard matrix of the CE 45, CC 50, and the CIC 40.



TELECOIL: Induction Coil Sensitivity at Full On Gain for the CE matrix 120/55. Data obtained in RMS magnetic field strength of 31.6 mA/meter.



KEMAR POLAR PLOTS

	500 Hz	1000 Hz	2000 Hz	4000 Hz
KEMAR DI Values	5.3	5.2	4.7	6.3
Freefield DI Values	6.1	6.0	5.9	5.4

### Measurement Conditions and Recommendations

The data for Cierra are obtained and performance is expressed according to ANSI S3.22 (1996) and IEC 60118-0 (1983), 60118-1 (1999), and 60118-2 (1997). Electro-acoustic data are measured on a Starkey proprietary Real Time Analyzer. 2D polar plots and DI data are measured on a B&K PULSE 3560C in an anechoic chamber. Data may be subject to change with product refinement.

Cierra hearing instruments may be set to Test Mode within PFS by reading the hearing aid and choosing Set to Full On Gain (Test Mode) from the Activity drop down menu. Test data results may vary from these specifications due to adaptive signal processing effects and available measurement equipment.

