

SONIC | charm

Simply
natural

charmTM



Charm Specification Guide

 **SONIC**
Everyday Sounds Better

Effortless enjoyment

Simple, natural, and easy-going. Charm has an appeal patients find hard to resist. It's refreshingly straightforward, with just the right amount of features to please. But don't let its simplicity fool you. Charm has all the essentials your patients need. Rich, natural sound. Noise-eliminating technologies. Intuitive operation. Even wireless connectivity. It's the kind of solution you – and your patients – will love. Pure and simple.



Simply natural

Charm pairs sophisticated sound processing technologies with simple operations. So the natural sound Sonic is known for is easy for your patients to experience. Plus Charm is easy for you to fit.

An emphasis on speech clarity **Speech Variable Processing**

preserves the nuances of speech – the soft and loud sounds that occur in every word. These small details enhance overall speech clarity and create rich, full, natural sound.

No more whistle and squeal

The **Adaptive Feedback Canceller** eliminates feedback before it starts. Charm removes offending signals – often before they are even heard – for squeal-free, easy listening.

Technologies to remove unwanted noise

Charm uses multiple systems to identify and reduce sounds that could be noisy distractions.

- **Directional systems** reduce unwanted noise so patients can stay engaged in their surroundings.
- **Speech Priority Noise Reduction** separates speech from surrounding noise, making conversations comfortable and clear.
- **Soft Noise Reduction** reduces the annoyance of low-level sounds like the whir of a fan or hum of a refrigerator.
- **Wind Noise Reduction** makes time spent outdoors more enjoyable by preventing wind sounds from being amplified.

Programmed to please

Charm is not only easy for your patients to use, it's equally simple for you to program with the **EXPRESSfit fitting software**.

Pre-defined **environments** make it simple to configure listening programs for common situations.

- **Data Logging** makes it simple to fine-tune Charm based on actual wear data.
- EXPRESSfit includes support for common **fitting algorithms**, including NAL-NL2, DSL v5.0 m[i/o], and our exclusive Best Fit Fast system.

Feature overview

Charm⁶⁰Charm⁴⁰

Sound Quality		
Signal Processing	◀ Speech Variable Processing ▶	
Frequency Bandwidth	8 kHz	8 kHz
Noise Management		
Adaptive Feedback Canceller	■	■
Wind Noise Reduction ¹	■	■
Soft Noise Reduction	3 levels	3 levels
Speech Priority Noise Reduction	3 levels	2 levels
Directionality ¹		
Fixed Directionality	■	■
Adaptive Directionality	■	
Binaural Coordination		
Volume & Program Change ²	■	
Non-Telephone Ear Control (Manual)	■	
Programming Options		
Universal Environment	■	■
Manual Listening Programs ³	4	3
Environments	10	5
Auto Telephone Program ¹	■	
Data Logging	■	■
nEARcom Wireless Programming ²	●	
Patient Conveniences		
Audible Performance Indicators	■	■
Start-Up Delay	■	■
Auto Telephone Detection ¹	■	

■ STANDARD ● OPTIONAL

(1) BTE, miniBTE, ITEPDW, ITCPDW, ITED, ITCD models

(2) BTE, miniBTE, ITEPDW, ITCPDW models

(3) models with Program Button

Model overview

	IIC*	CIC	CICP	ITCD	ITCPDW*	ITED	ITEPDW*	Nano RITE	miniBTE	BTE
Battery Size	10	10	10	312	312	13	13	312	13	13
Program Button			●	●	●	●	●	■	■	■
Volume Control				●		●		**		■
Telecoil				●	●	●	●	■		■
Auto Telephone*				●	●	●	●	■	■	■
Wireless Accessories*					●		●	●	●	●
DAI/FM									■	■
Earhook									■	■
Thin Tube									■	■
Power Receiver								●		

■ STANDARD ● OPTIONAL * CHARM 60 ONLY

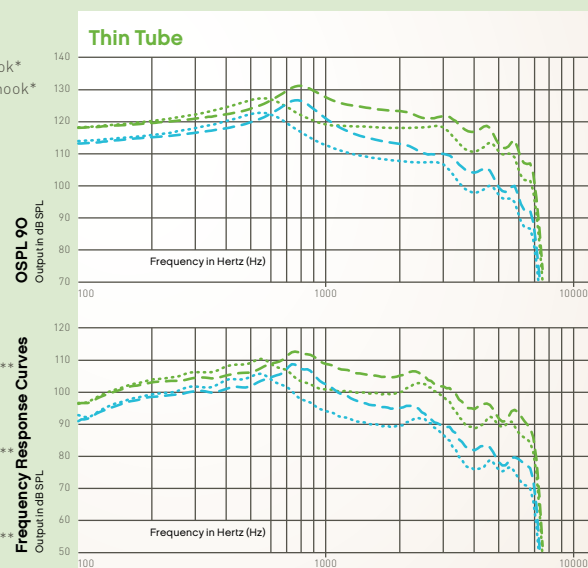
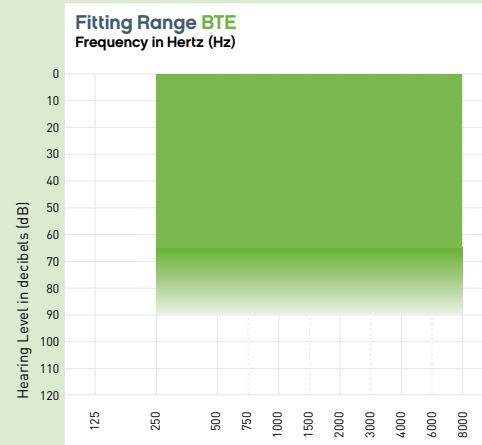
** Program Button can be programmed for volume control use

Charm BTEs will be delivered with an Earhook attached and a separate Thin Tube Adapter.

Charm miniBTEs will be delivered with a Thin Tube Adapter attached and a separate Earhook.

Charm 60

BTE



		BTE with Earhook		BTE with Thin Tube 1.3		BTE with Thin Tube 0.9	
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	130	135 ¹⁾	127	131	123	127
OSPL 90, 1600 Hz	dB SPL	123	131	114	124	109	118
HFA OSPL 90	dB SPL	123	–	115	–	110	–
Full-on gain, peak	dB	63	68	59	63	56	60
Full-on gain, 1600 Hz	dB	54	63	46	55	40	50
HFA full-on gain	dB	55	–	47	–	42	–
Reference test gain	dB	46	56	37	49	32	43
Quiescent current	mA	1.1	1.1	1.1	1.1	1.1	1.1
Operating current	mA	1.2	1.1	1.2	1.1	1.2	1.1
Battery size		13	13	13	13	13	13
Distortion 500/800/1600 Hz	%	<2/<2/<2	<3/<2/<2	<2/<2/<2	<2/<2/<3	<2/<2/<2	<2/<2/<4
Frequency range	Hz	100-6100	–	100-5200	–	100-6100	–
Equivalent input noise ²⁾	dB SPL	14	14	16	16	19	17
Telecoil 1 mA/m 1600 Hz, IEC		82	90	74	84	68	78
Telecoil HFA SPLITS, ANSI		87	–	74	–	73	–

* Measurements are taken with undamped earhook

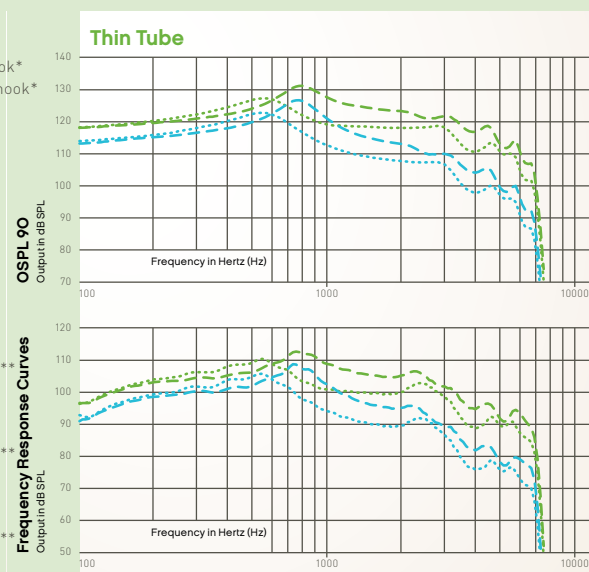
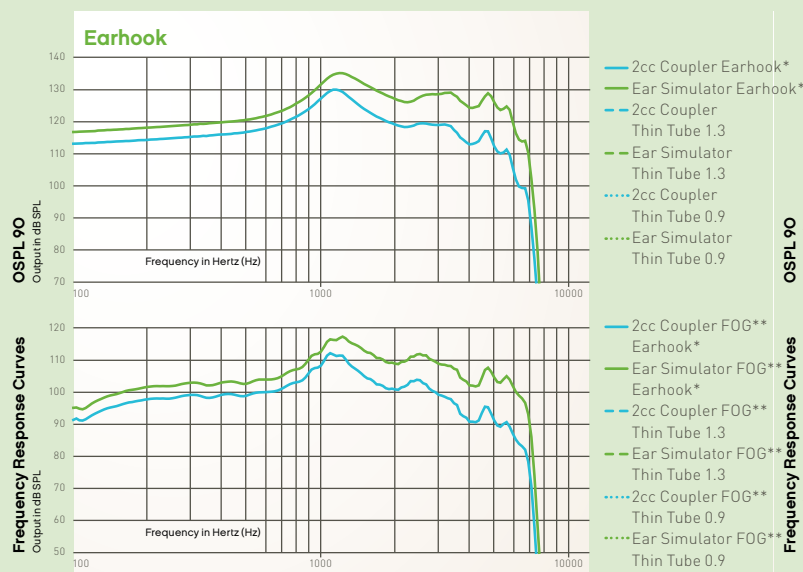
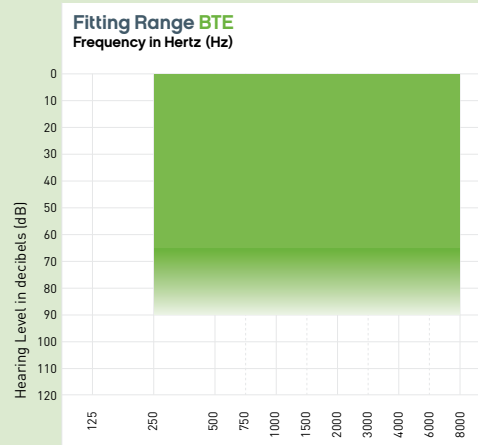
** FOG with 50 dB SPL input

¹⁾ Special care should be taken when fitting and using a hearing instrument with maximum sound pressure capability in excess of 132 dB SPL (IEC 60318-4) since there may be a risk of impairing the remaining hearing of the hearing instrument user.

²⁾ Equivalent input noise A-weighted. Technical data measured with expansion, corresponding to the test box measurement settings.

"2cc" refers to a coupler according to IEC 60318-5. "Ear simulator" refers to a coupler according to IEC 60318-4. Applied versions: IEC 60118-7:2005, IEC 60118-0:1994 and ANSI S3.22:2009.

Charm 40 BTE



		BTE with Earhook		BTE with Thin Tube 1.3		BTE with Thin Tube 0.9	
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	130	135 ¹⁾	127	131	123	127
OSPL 90, 1600 Hz	dB SPL	123	131	114	124	109	118
HFA OSPL 90	dB SPL	123	–	115	–	110	–
Full-on gain, peak	dB	63	68	59	63	56	60
Full-on gain, 1600 Hz	dB	54	63	46	55	40	50
HFA full-on gain	dB	55	–	47	–	42	–
Reference test gain	dB	46	56	37	49	32	43
Quiescent current	mA	1.1	1.1	1.1	1.1	1.1	1.1
Operating current	mA	1.2	1.1	1.2	1.1	1.2	1.1
Battery size		13	13	13	13	13	13
Distortion 500/800/1600 Hz	%	<2/<2/<2	<3/<2/<2	<2/<2/<2	<2/<2/<3	<2/<2/<2	<2/<2/<4
Frequency range	Hz	100-6100	–	100-5200	–	100-6100	–
Equivalent input noise ²⁾	dB SPL	14	14	16	16	19	17
Telecoil 1 mA/m 1600 Hz, IEC		82	90	74	84	68	78
Telecoil HFA SPLITS, ANSI		87	–	74	–	73	–

* Measurements are taken with undamped earhook

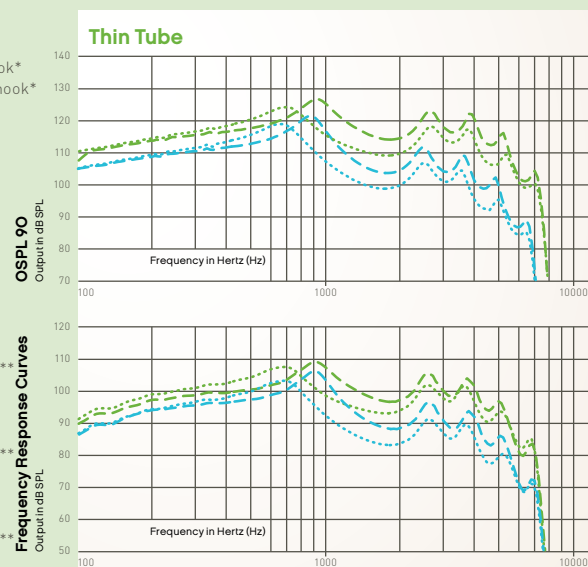
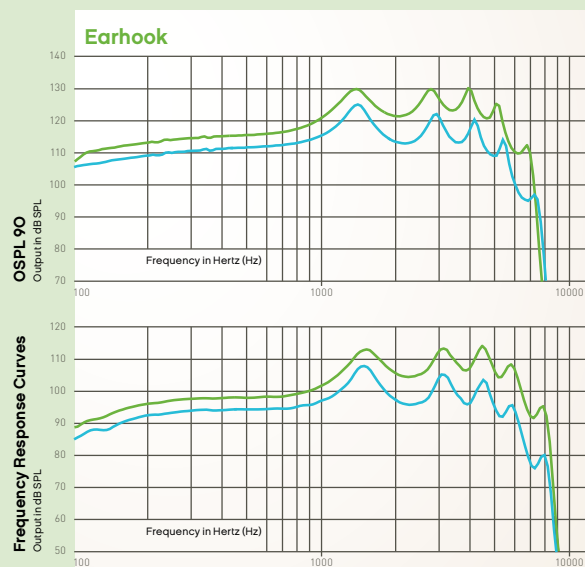
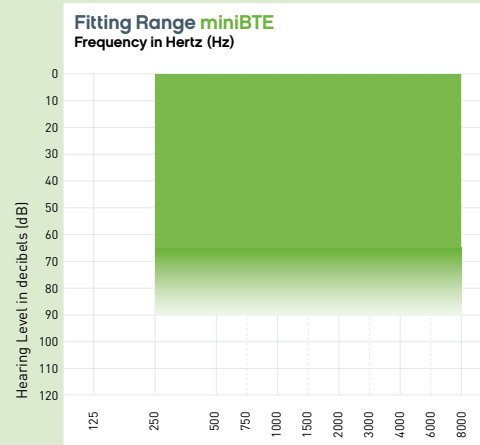
** FOG with 50 dB SPL input

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Charm 60 miniBTE



		miniBTE with Earhook		miniBTE with Thin Tube 1.3		miniBTE with Thin Tube 0.9	
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	125	130	123	127	120	124
OSPL 90, 1600 Hz	dB SPL	117	125	106	115	100	109
HFA OSPL 90	dB SPL	117	–	113	–	106	–
Full-on gain, peak	dB	58	63	56	59	53	57
Full-on gain, 1600 Hz	dB	51	59	39	47	33	43
HFA full-on gain	dB	50	–	46	–	39	–
Reference test gain	dB	40	50	36	39	28	34
Quiescent current	mA	1.0	1.0	1.0	1.0	1.0	1.0
Operating current	mA	1.1	1.1	1.1	1.1	1.1	1.1
Battery size		13	13	13	13	13	13
Distortion 500/800/1600 Hz	%	<2/<1/<1	<2/<2/<1	<1/<1/<1	<1/<1/<1	<1/<1/<1	<1/<1/<1
Frequency range	Hz	100–5790	–	100–5620	–	100–6130	–
Equivalent input noise ¹⁾	dB SPL	18	18	16	18	19	24

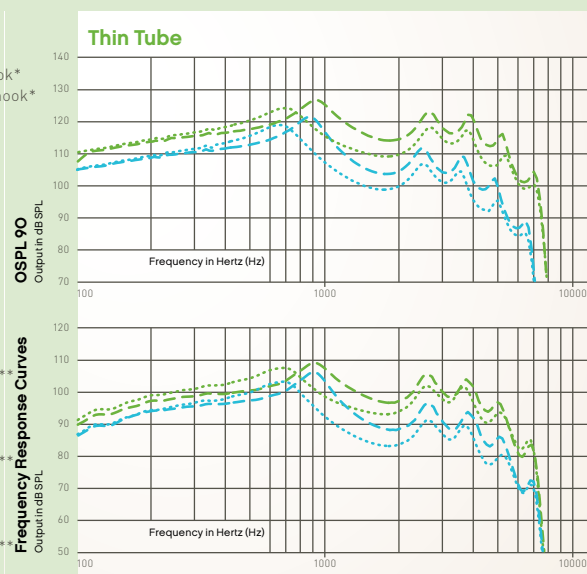
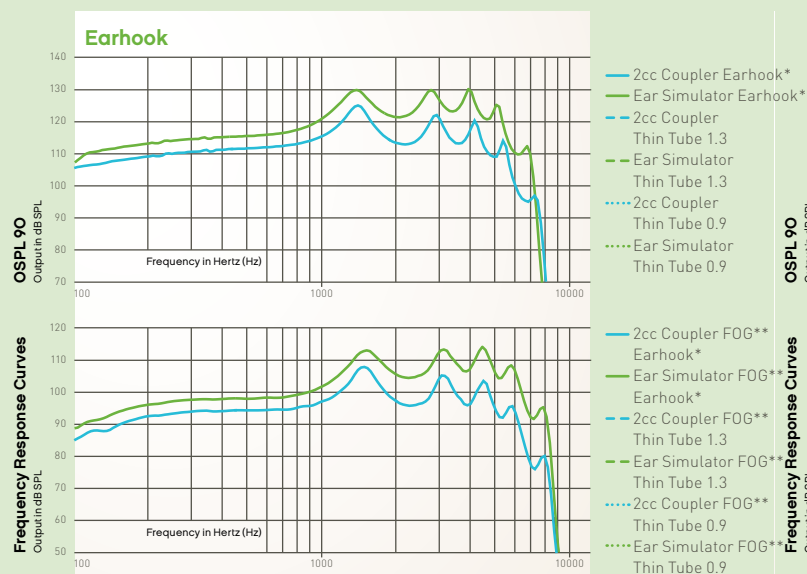
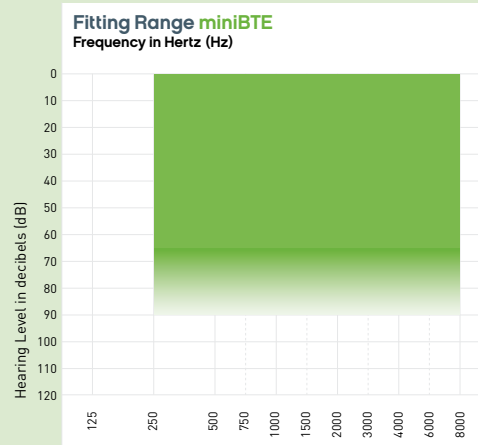
* Measurements are taken with undamped earhook

** FOG with 50 dB SPL input

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Charm 40 miniBTE



		miniBTE with Earhook		miniBTE with Thin Tube 1.3		miniBTE with Thin Tube 0.9	
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	125	130	123	127	120	124
OSPL 90, 1600 Hz	dB SPL	117	125	106	115	100	109
HFA OSPL 90	dB SPL	117	–	113	–	106	–
Full-on gain, peak	dB	58	63	56	59	53	57
Full-on gain, 1600 Hz	dB	51	59	39	47	33	43
HFA full-on gain	dB	50	–	46	–	39	–
Reference test gain	dB	40	50	36	39	28	34
Quiescent current	mA	1.0	1.0	1.0	1.0	1.0	1.0
Operating current	mA	1.1	1.1	1.1	1.1	1.1	1.1
Battery size		13	13	13	13	13	13
Distortion 500/800/1600 Hz	%	<2/<1/<1	<2/<2/<1	<1/<1/<1	<1/<1/<1	<1/<1/<1	<1/<1/<1
Frequency range	Hz	100–5790	–	100–5620	–	100–6130	–
Equivalent input noise ¹⁾	dB SPL	18	18	16	18	19	24

* Measurements are taken with undamped earhook

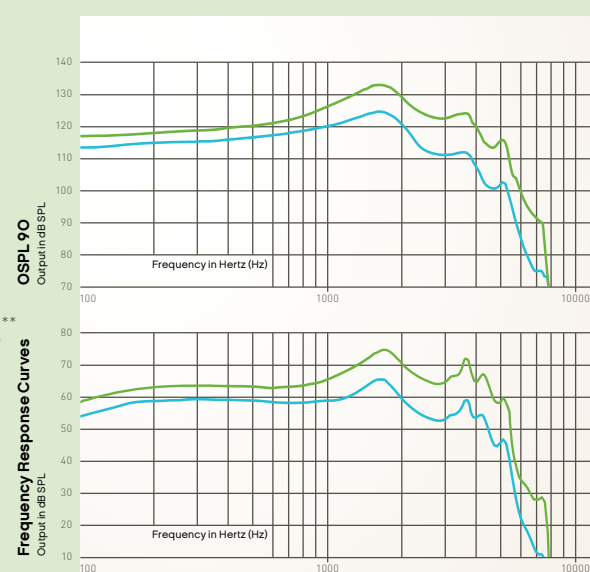
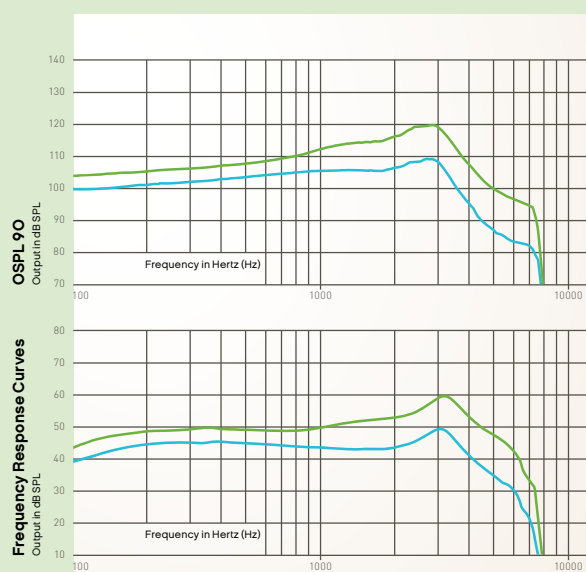
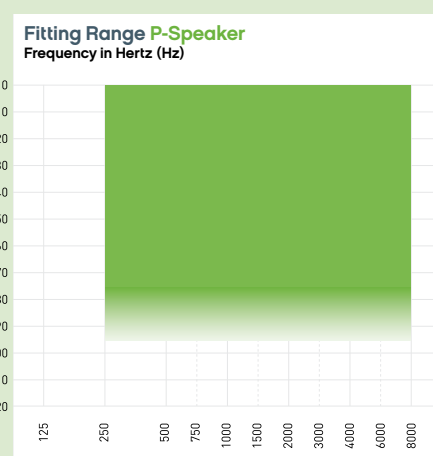
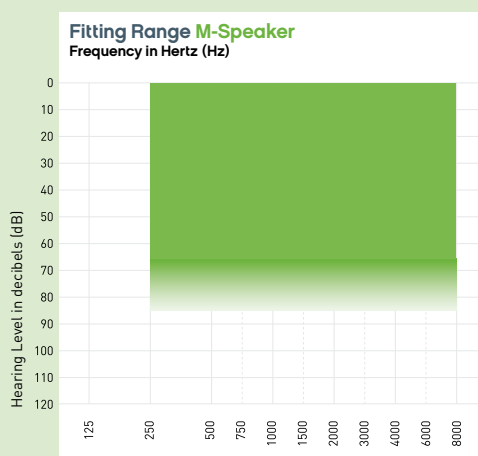
** FOG with 50 dB SPL input

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Charm 60

Nano RITE



		M-Speaker		P-Speaker	
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	109	121	124	133*
OSPL 90, 1600 Hz	dB SPL	106	115	122	131
HFA OSPL 90	dB SPL	106	–	119	–
Full-on gain, peak	dB	50	61	65	75
Full-on gain, 1600 Hz	dB	43	53	61	70
HFA full-on gain	dB	45	–	59	–
Reference test gain	dB	29	37	43	55
Quiescent current	mA	1.1	1.1	1.1	1.1
Operating current	mA	1.1	1.1	1.4	1.2
Battery size		312	312	312	312
Distortion 500/800/1600 Hz	%	<2/<2/<2	<3/<3/<2	<2/<2/<2	<2/<3/<2
Frequency range ¹⁾	Hz	100–6700	–	100–6900	–
Equivalent input noise ¹⁾	dB (A)	18	20	17	14
Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	70	80	88	97
Telecoil HFA SPLITS	dB SPL	74	–	89	–

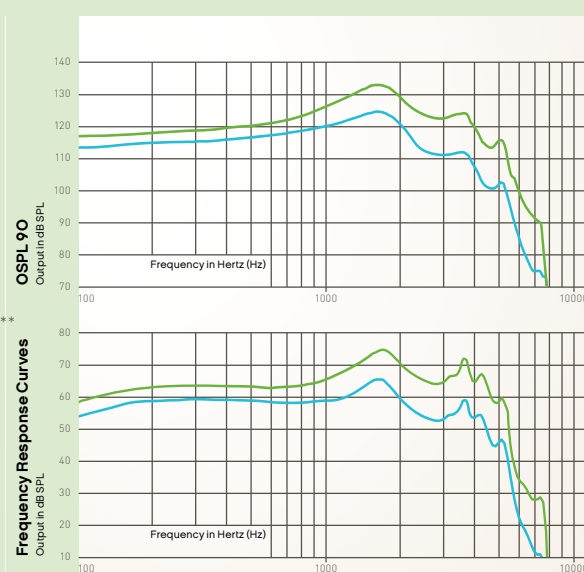
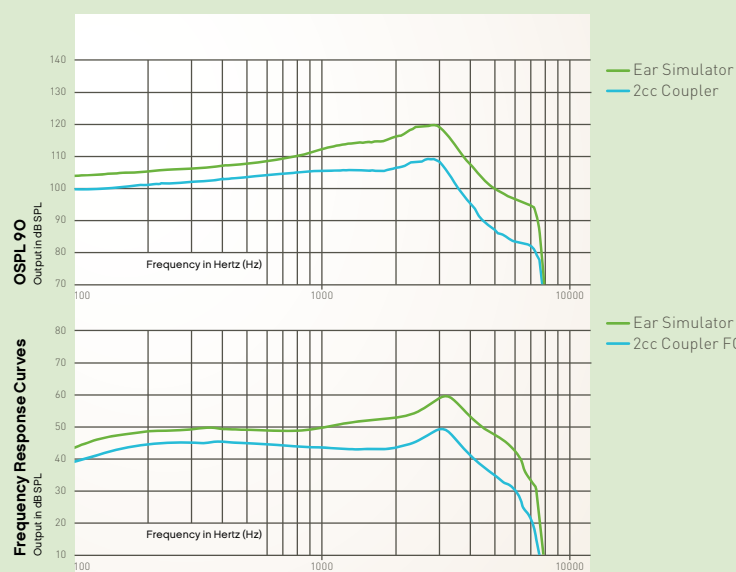
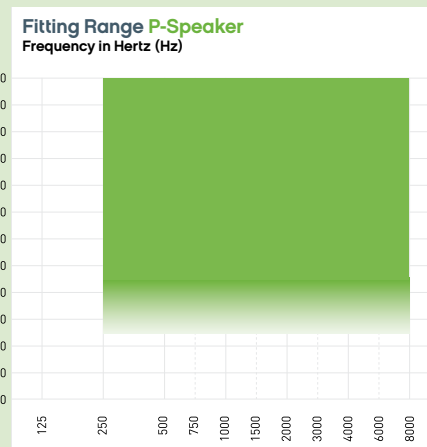
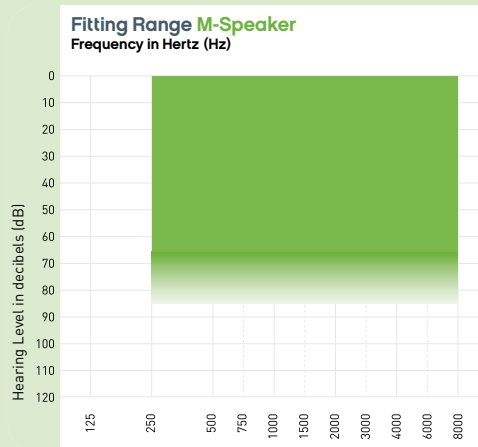
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** FOG with 50 dB SPL input

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Charm 40 Nano RITE



		M-Speaker		P-Speaker	
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	109	120	123	132*
OSPL 90, 1600 Hz	dB SPL	105	114	122	131
HFA OSPL 90	dB SPL	106	–	119	–
Full-on gain, peak	dB	49	60	64	73
Full-on gain, 1600 Hz	dB	44	52	61	69
HFA full-on gain	dB	44	–	58	–
Reference test gain	dB	29	37	43	54
Quiescent current	mA	1.1	1.1	1.1	1.1
Operating current	mA	1.1	1.1	1.4	1.2
Battery size		312	312	312	312
Distortion 500/800/1600 Hz	%	<2/<2/<2	<3/<3/<2	<2/<2/<2	<2/<2/<2
Frequency range ¹	Hz	100–6700	–	100–6900	–
Equivalent input noise ¹⁾	dB (A)	17	19	16	14
Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	70	79	88	95
Telecoil HFA SPLITS	dB SPL	74	–	89	–

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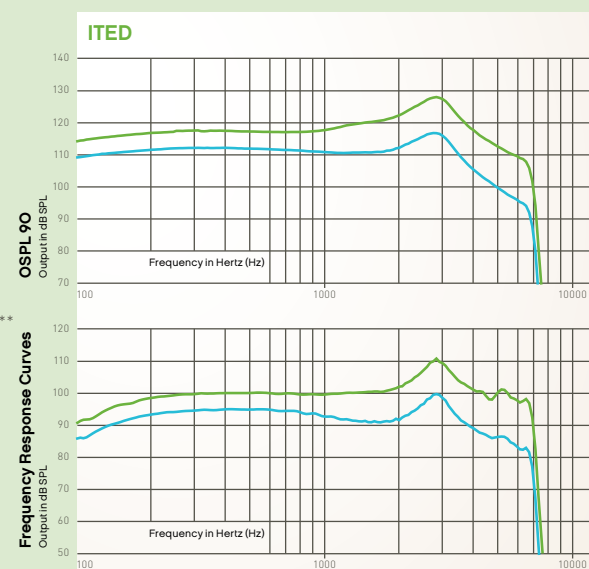
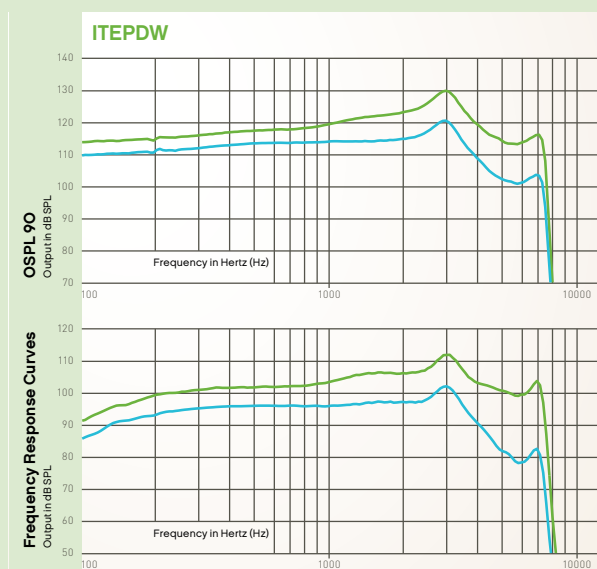
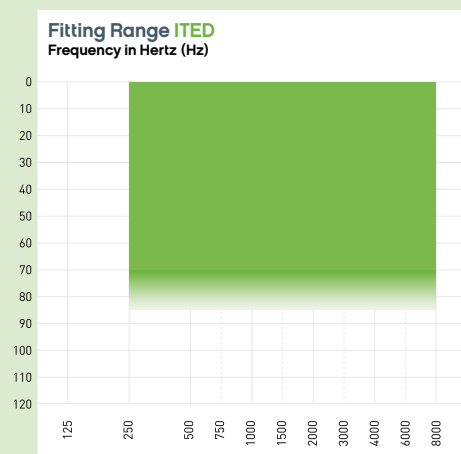
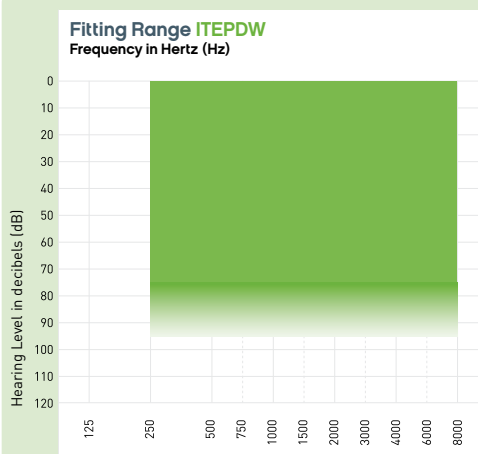
** FOG with 50 dB SPL input

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Charm 60

ITEPDW | ITED



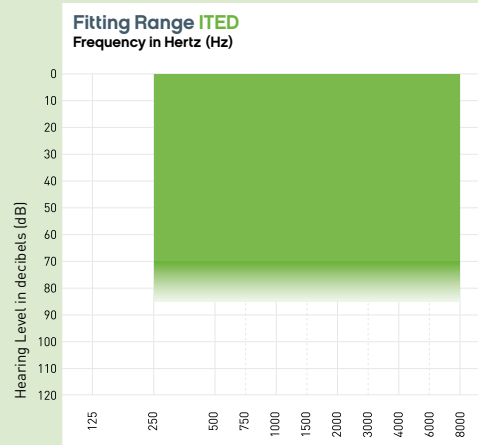
ITEPDW			ITED		
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	121	130	117	128
OSPL 90, 1600 Hz	dB SPL	115	122	111	120
HFA OSPL 90	dB SPL	116	–	112	–
Full-on gain, peak	dB	52	62	50	63
Full-on gain, 1600 Hz	dB	48	56	41	50
HFA full-on gain	dB	48	–	43	–
Reference test gain	dB	36	46	36	44
Quiescent current	mA	1.1	1.1	0.9	0.9
Operating current	mA	1.1	1.1	1.0	0.9
Battery size		13	13	13	13
Distortion 500/800/1600 Hz	%	<1/<1/<1	<1/<1/<1	<2/<2/<2	<2/<2/<2
Frequency range	Hz	100–6880	–	100–7100	–
Equivalent input noise ¹⁾	dB SPL	17	18	19	22
Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	78	87	72	81
Telecoil HFA SPLITS, ANSI	dB SPL	93	–	94	–

** FOG with 50 dB SPL input

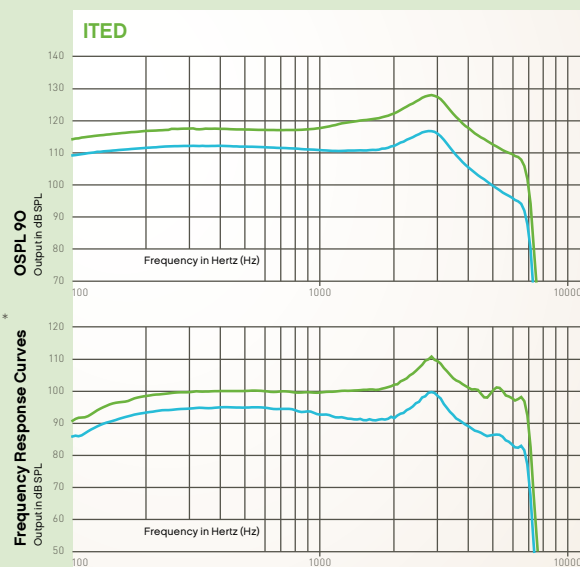
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Charm 40 ITED



— Ear Simulator
— 2cc Coupler



— Ear Simulator FOG**
— 2cc Coupler FOG**

ITED

		2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	117	128
OSPL 90, 1600 Hz	dB SPL	111	120
HFA OSPL 90	dB SPL	112	–
Full-on gain, peak	dB	50	63
Full-on gain, 1600 Hz	dB	41	50
HFA full-on gain	dB	43	–
Reference test gain	dB	36	44
Quiescent current	mA	0.9	0.9
Operating current	mA	1.0	0.9
Battery size		13	13
Distortion 500/800/1600 Hz	%	<2/<2/<2	<2/<2/<2
Frequency range	Hz	100–7100	–
Equivalent input noise ¹¹	dB SPL	19	22
Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	72	81
Telecoil HFA SPLITS, ANSI	dB SPL	94	–

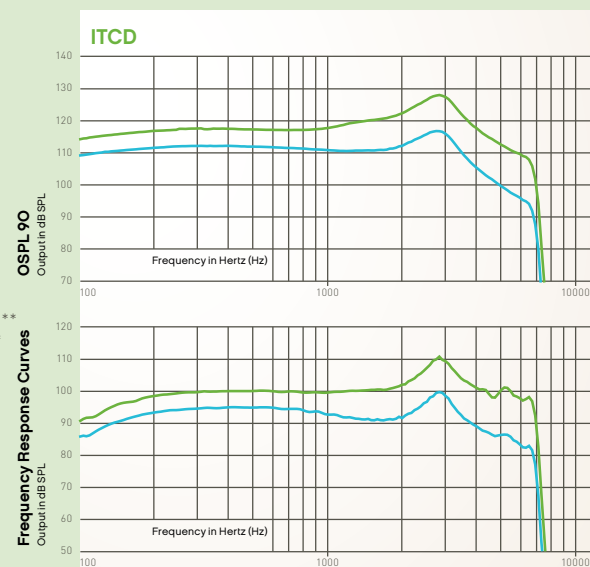
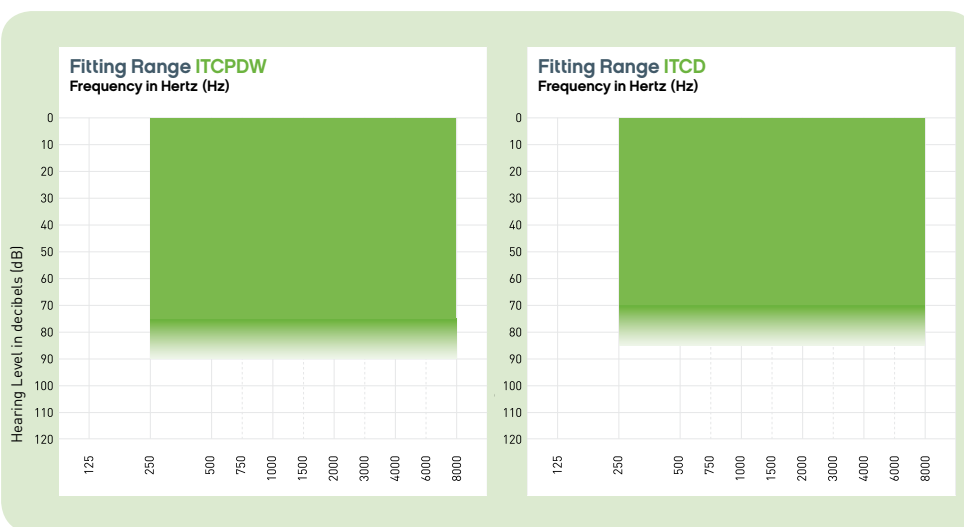
** FOG with 50 dB SPL input

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Charm 60

ITCPDW | ITCD



ITCPDW			ITCD		
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	121	130	117	128
OSPL 90, 1600 Hz	dB SPL	115	122	111	120
HFA OSPL 90	dB SPL	116	–	112	–
Full-on gain, peak	dB	52	62	50	63
Full-on gain, 1600 Hz	dB	48	56	41	50
HFA full-on gain	dB	48	–	43	–
Reference test gain	dB	36	46	36	44
Quiescent current	mA	1.1	1.1	0.9	0.9
Operating current	mA	1.1	1.1	1.0	0.9
Battery size		312	312	312	312
Distortion 500/800/1600 Hz	%	<1/<1/<1	<1/<1/<1	<2/<2/<2	<2/<2/<2
Frequency range	Hz	100–6880	–	100–7100	–
Equivalent input noise ¹⁾	dB SPL	17	18	19	22
Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	78	87	72	81
Telecoil HFA SPLITS, ANSI	dB SPL	93	–	94	–

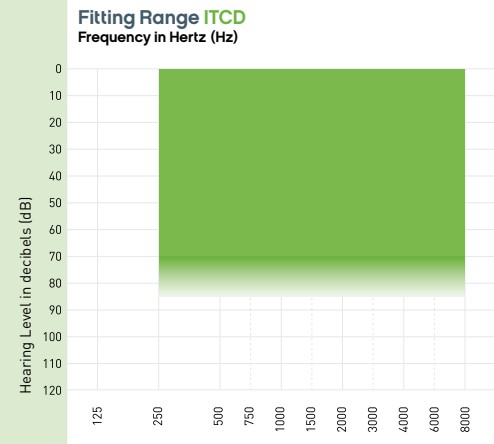
** FOG with 50 dB SPL input

¹⁾ "Equivalent input noise A-weighted. Technical data measured with expansion, corresponding to the test box measurement settings."

"2cc" refers to a coupler according to IEC 60318-5. "Ear simulator" refers to a coupler according to IEC 60318-4. Applied versions: IEC 60118-7:2005, IEC 60118-0:1994 and ANSI S3.22:2009.

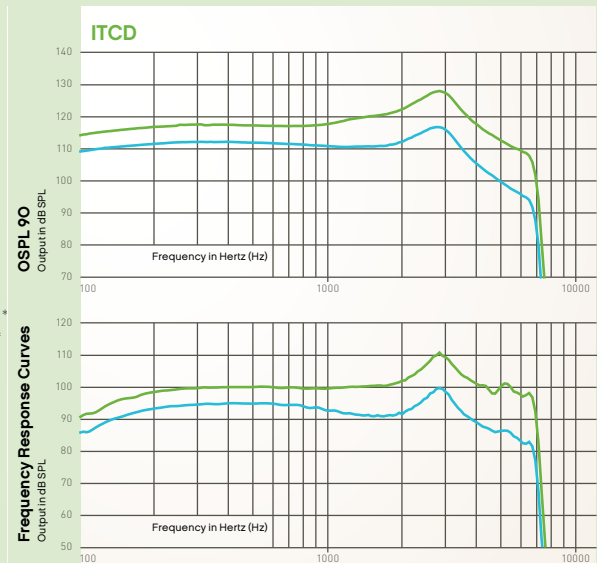
Charm 40

ITCD



— Ear Simulator
— 2cc Coupler

— Ear Simulator FOG*
— 2cc Coupler FOG**



ITCD

		2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	117	128
OSPL 90, 1600 Hz	dB SPL	111	120
HFA OSPL 90	dB SPL	112	–
Full-on gain, peak	dB	50	63
Full-on gain, 1600 Hz	dB	41	50
HFA full-on gain	dB	43	–
Reference test gain	dB	36	44
Quiescent current	mA	0.9	0.9
Operating current	mA	1.0	0.9
Battery size		312	312
Distortion 500/800/1600 Hz	%	<2/<2/<2	<2/<2/<2
Frequency range	Hz	100-7100	–
Equivalent input noise ¹¹	dB SPL	19	22
Telecoil 1 mA/m 1600 Hz, IEC	dB SPL	72	81
Telecoil HFA SPLITS, ANSI	dB SPL	94	–

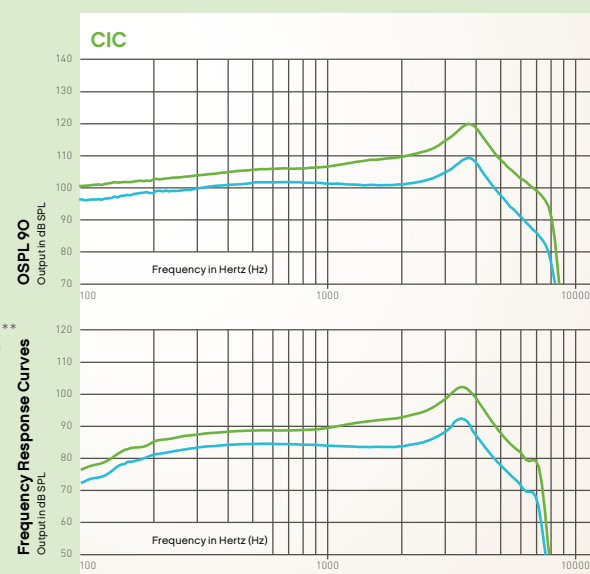
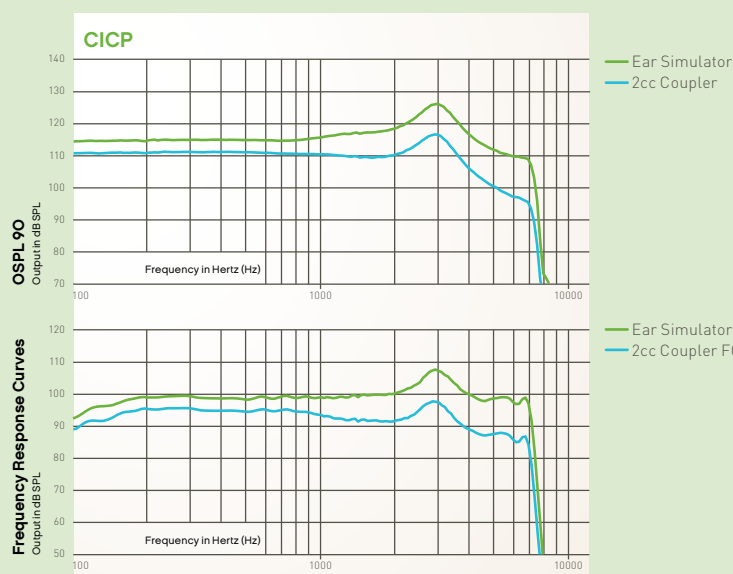
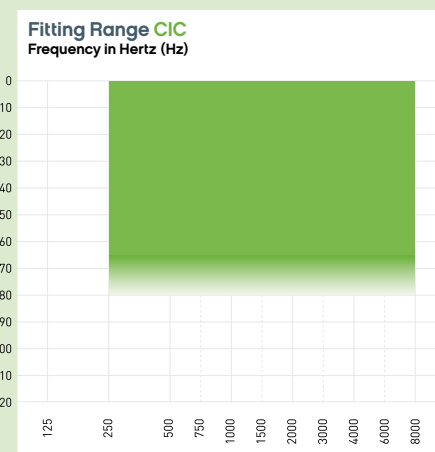
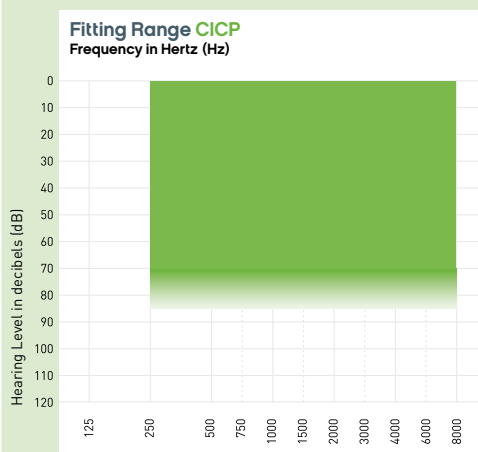
** FOG with 50 dB SPL input

¹¹ "Equivalent input noise A-weighted. Technical data measured with expansion, corresponding to the test box measurement settings."

"2cc" refers to a coupler according to IEC 60318-5. "Ear simulator" refers to a coupler according to IEC 60318-4. Applied versions: IEC 60118-7:2005, IEC 60118-0:1994 and ANSI S3.22:2009.

Charm 60

CICP | CIC



CICP			CIC		
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	116	127	109	120
OSPL 90, 1600 Hz	dB SPL	108	117	101	109
HFA OSPL 90	dB SPL	110	–	102	–
Full-on gain, peak	dB	48	59	42	52
Full-on gain, 1600 Hz	dB	42	51	34	42
HFA full-on gain	dB	42	–	35	–
Reference test gain	dB	33	44	24	34
Quiescent current	mA	0.9	0.9	0.7	0.7
Operating current	mA	1.0	1.0	0.8	0.7
Battery size		10	10	10	10
Distortion 500/800/1600 Hz	%	<1/<1/<1	<2/<2/<2	<1/<1/<1	<2/<2/<2
Frequency range	Hz	100–7290	–	100–6879	–
Equivalent input noise ¹⁾	dB SPL	22	23	21	24

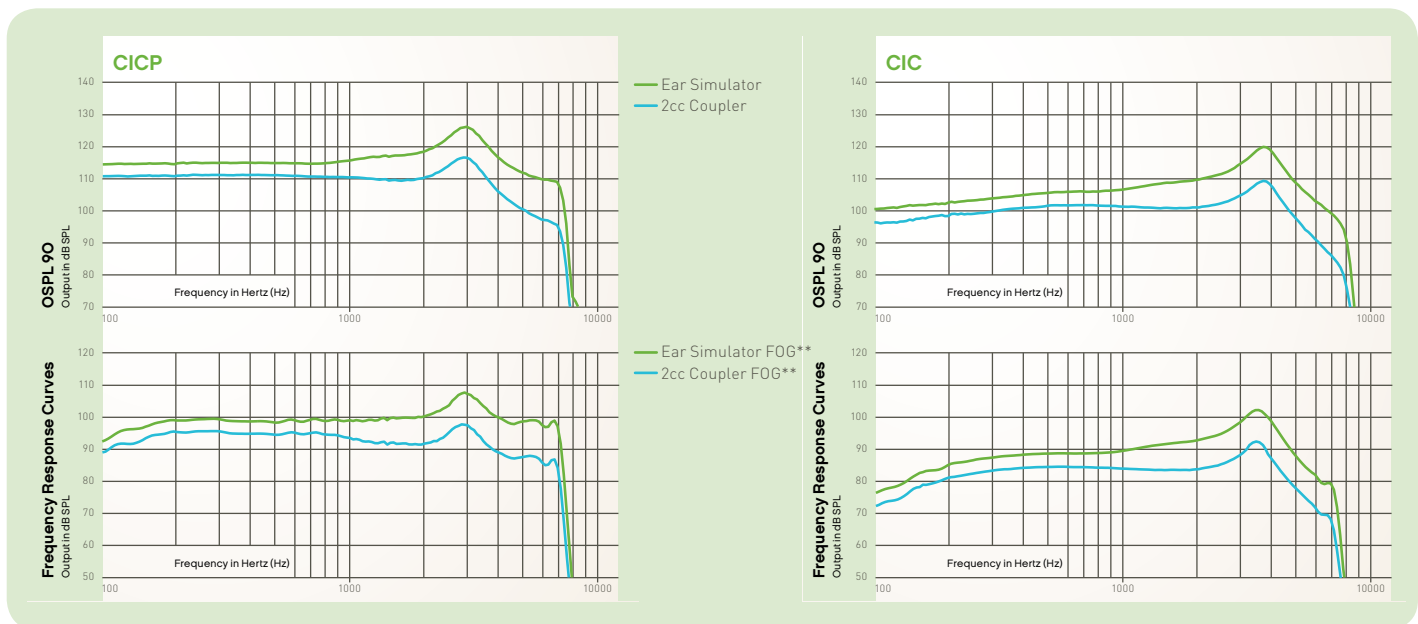
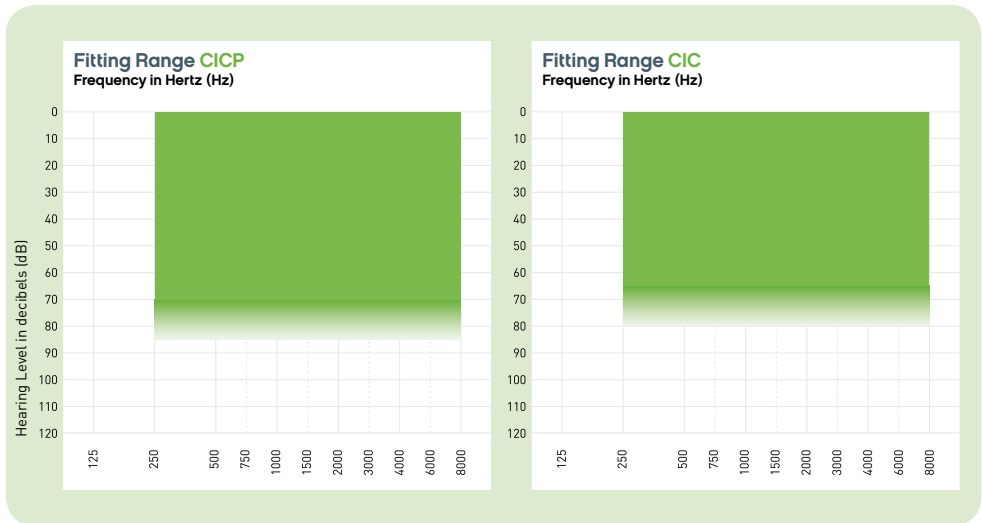
** FOG with 50 dB SPL input

¹⁾ "Equivalent input noise A-weighted. Technical data measured with expansion, corresponding to the test box measurement settings."

"2cc" refers to a coupler according to IEC 60318-5. "Ear simulator" refers to a coupler according to IEC 60318-4. Applied versions: IEC 60118-7:2005, IEC 60118-0:1994 and ANSI S3.22:2009.

Charm 40

CICP | CIC



CICP			CIC		
		2cc Coupler	Ear Simulator	2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	116	127	109	120
OSPL 90, 1600 Hz	dB SPL	108	117	101	109
HFA OSPL 90	dB SPL	110	–	102	–
Full-on gain, peak	dB	48	59	42	52
Full-on gain, 1600 Hz	dB	42	51	34	42
HFA full-on gain	dB	42	–	35	–
Reference test gain	dB	33	44	24	34
Quiescent current	mA	0.9	0.9	0.7	0.7
Operating current	mA	1.0	1.0	0.8	0.7
Battery size		10	10	10	10
Distortion 500/800/1600 Hz	%	<1/<1/<1	<2/<2/<2	<1/<1/<1	<2/<2/<2
Frequency range	Hz	100–7290	–	100–6879	–
Equivalent input noise ¹¹	dB SPL	22	23	21	24

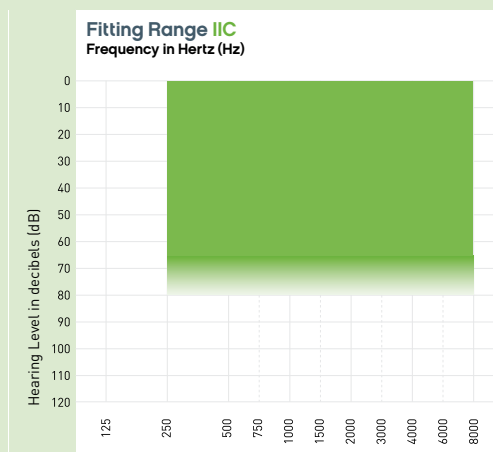
** FOG with 50 dB SPL input

¹¹ "Equivalent input noise A-weighted. Technical data measured with expansion, corresponding to the test box measurement settings."

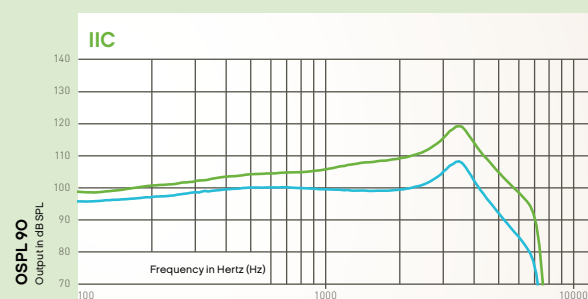
"2cc" refers to a coupler according to IEC 60318-5. "Ear simulator" refers to a coupler according to IEC 60318-4. Applied versions: IEC 60118-7:2005, IEC 60118-0:1994 and ANSI S3.22:2009.

Charm 60

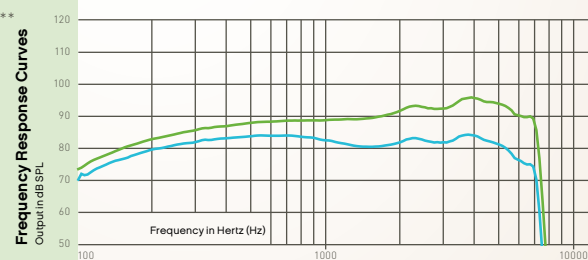
IIC



— Ear Simulator
— 2cc Coupler



— Ear Simulator FOG**
— 2cc Coupler FOG**



IIC

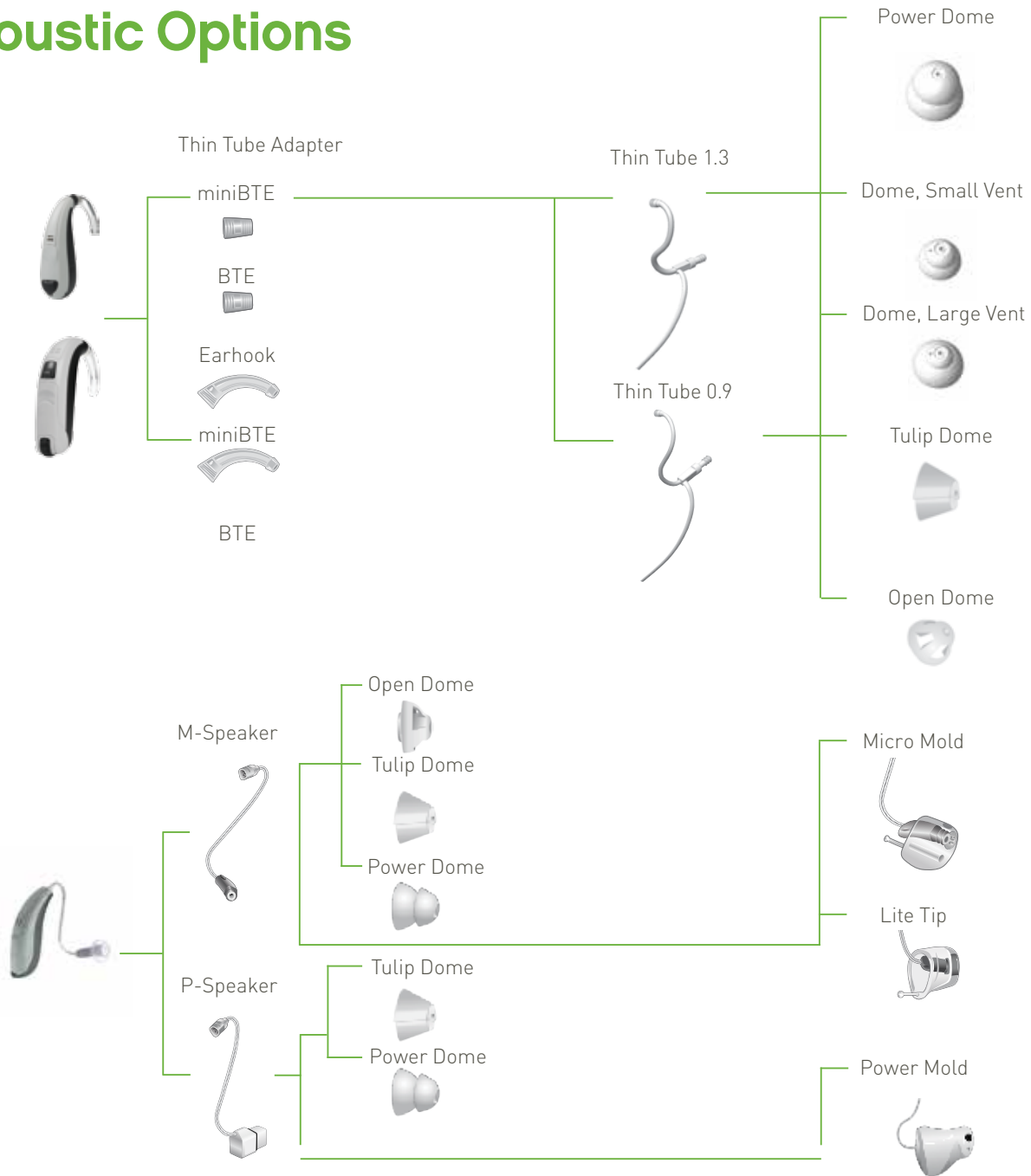
		2cc Coupler	Ear Simulator
OSPL 90, peak	dB SPL	108	119
OSPL 90, 1600 Hz	dB SPL	99	108
HFA OSPL 90	dB SPL	100	–
Full-on gain, peak	dB	35	46
Full-on gain, 1600 Hz	dB	31	40
HFA full-on gain	dB	32	–
Reference test gain	dB	23	33
Quiescent current	mA	0.8	0.8
Operating current	mA	0.8	0.8
Battery size		10	10
Distortion 500/800/1600 Hz	%	<2/<2/<2	<2/<2/<2
Frequency range	Hz	100-7300	–
Equivalent input noise ¹⁾	dB SPL	20	22

** FOG with 50 dB SPL input

¹⁾ "Equivalent input noise A-weighted. Technical data measured with expansion, corresponding to the test box measurement settings."

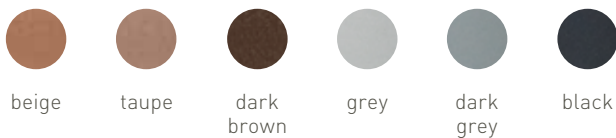
"2cc" refers to a coupler according to IEC 60318-5. "Ear simulator" refers to a coupler according to IEC 60318-4. Applied versions: IEC 60118-7:2005, IEC 60118-0:1994 and ANSI S3.22:2009.

Acoustic Options

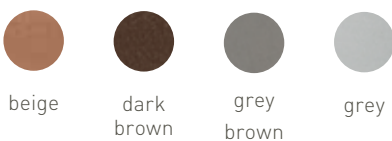


Color Options

Charm BTE and miniBTE



Charm Nano RITE



Charm custom instruments



