Serenity DP+/DPC+

Modular hearing protection

Serenity DP+ is a dynamic hearing protection system with level-dependent attenuation. It instantly dampens loud noises such as machine sounds or gun shots down to a comfortable level. Immediately after these noises dissipate, Serenity DP re-adjusts so that normal sounds such as conversations and warning signals can be heard as normal. Serenity DPC+ adds an integrated communication headset with boom microphone, which can be connected to most professional radios.

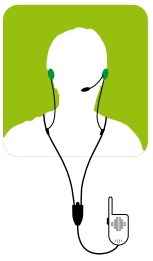
Serenity DP+



Features:

- Electronic, level-dependent protection
- Binaural microphones and speakers within earJacks for localization of warning signals
- Volume control for enhanced perception
- Custom molded (eShells) or generic ear shells
- Protection level verifiable
- Compatible with helmets, masks and glasses

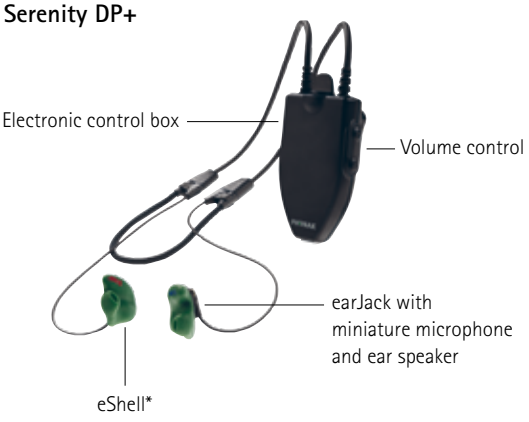
Serenity DPC+
(with communication)



Serenity DPC+ offers the same level-dependent hearing protection features as Serenity DP, plus:

- Communication headset integrated in the earJack
- Clear speech transmission – even in noise
- Excellent speech comprehension in noisy environments
- Connection to professional radios
- PTT integrated in the control box
- Uninterrupted hearing protection during calls

Serenity DP+



Serenity DPC+



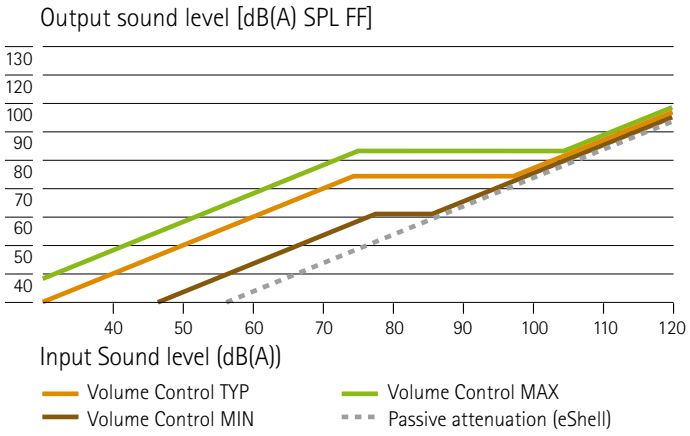
* generic ear shells can also be used

PHONAK communications

General Features

Weight	Serenity DP+	61 g
	Serenity DPC+	113 g
Marking	Unique user ID on each custom molded eShell	
Accessories	Metal detection eShell inserts	
	Tailorable neck cord and cable lengths	
	Rotating attachment clip for control box	
	Radio-specific connector (Serenity DPC only)	

Acoustic Gain Model



Hearing Protection Specifications (Serenity DP+/DPC+)

Serenity DP+ and DPC+ comply with regulation (EU) 2016/425 and are tested and certified according to EN 352-2:2020, EN 352-7:2020 and ANSI S3.19-1974. Serenity DPC+ is also certified according to EN 352-9:2020.

Custom ear shell:

Passive attenuation according to EN 352-2:2020	SNR = 33 dB (electronic attenuation switched off)
Passive attenuation according to ANSI S3.19-1974	NRR = 28 dB (electronic attenuation switched off)
Level-dependent attenuation according to EN 352-7:2020	H : 115 dB / M : 114 dB / L : 112 dB *

Generic ear shell:

Passive attenuation according to EN 352-2:2020	SNR = 29 dB (electronic attenuation switched off)
Passive attenuation according to ANSI S3.19-1974	NRR = 23 dB (electronic attenuation switched off)
Level-dependent attenuation according to EN 352-7:2020	H : 112 dB / M : 108 dB / L : 107 dB *

* High H, medium M and low L criteria levels at which in-ear sound pressure first exceeds 85 dB(A) with electronic attenuation switched on.

Phonak Serenity DP+ and DPC+ Custom ear shells

SNR (dB)	33	H	33	M	30	L	28	NRR (dB)	28
SNR_m (dB)	36.7	H_m	36.5	M_m	35.0	L_m	33.8		
SNR_s (dB)	4.1	H_s	3.3	M_s	4.6	L_s	5.6		

CE Certification data according to EN 352-2:2020

F (Hz)	63	125	250	500	1000	2000	4000	8000
MA (dB)	28.3	32.6	33.5	35.2	35.5	37.4	37.4	39.9
SD (dB)	4.9	7.6	7.5	6.3	5.0	4.2	5.2	4.1
APV (dB)	23.4	25.0	26.0	28.9	30.5	33.2	32.2	35.8

Certification data according to ANSI S3.19-1974

F (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
MA (dB)	37.2	37.3	38.4	37.3	38.8	43.8	38.2	45.3	40.8
SD (dB)	5.8	7.1	5.6	4.2	3.0	6.0	4.6	3.4	4.1

Maximum time exposure recommended for Serenity DPC+ with Custom ear shells	
EN 352-9: 2020 Hearing protectors - Safety requirements - Part 9: Earplugs with safety-related audio input. Below table specifies the times taken to reach the specified noise exposure per day in function of the communication device output level in use with the headset.	
Criterion input voltage:	101,0 mVrms (-19,5 dBVrms)
Sound output level for maximum input voltage:	103,5 dB(A) at 3,01 Vrms
Usage time for the maximum input voltage that correspondents to an equivalent sound output level of 82 dB(A) over 8h:	0,06 h at 3,01 Vrms
The relationship between sound output level and input signal in 5 dB steps from a sound output level ca. 70 dB(A) up to the maximum input voltage:	See tables below

Relationship between sound output level and input voltage

SPL [dB(A)]	70	75	80	85	90	95	100	103.5
Input voltage [mVrms]	30.0	50.0	86.0	146.0	244.0	411.0	1431.0	3085.0
Maximum time exposure	126h. 47min.	40h. 5min.	12h. 40min.	4h. 0min.	1h. 16min.	0h. 24min.	0h. 7min.	0h. 3min.

Phonak Serenity DP+ and DPC+ Generic Silicon eartips

SNR (dB)	29	H	29	M	26	L	26	NRR (dB)	23
SNR_m (dB)	31.7	H_m	31.5	M_m	29.9	L_m	29.7		
SNR_s (dB)	2.6	H_s	2.1	M_s	3.5	L_s	3.7		

CE Certification data according to EN 352-2:2020

F (Hz)	63	125	250	500	1000	2000	4000	8000
MA (dB)	26.7	30.6	30.1	29.2	30.0	32.2	33.3	35.6
SD (dB)	3.4	3.0	3.7	4.8	4.5	3.1	2.7	6.0
APV (dB)	23.3	27.6	26.4	24.4	25.5	29.1	30.6	29.6

Certification data according to ANSI S3.19-1974

F (Hz)	125	250	500	1000	2000	3150	4000	6300	8000
MA (dB)	31.1	30.5	29.9	29.7	32.5	33.5	33.5	35.3	36.1
SD (dB)	3.1	3.7	3.9	3.3	2.2	3.5	2.9	4.2	6.6

Maximum time exposure recommended for Serenity DPC+ with Generic Silicon eartips	
EN 352-9: 2020 Hearing protectors - Safety requirements - Part 9: Earplugs with safety-related audio input. Below table specifies the times taken to reach the specified noise exposure per day in function of the communication device output level in use with the headset.	
Criterion input voltage:	65,0 mVrms (-23,7 dBVrms)
Sound output level for maximum input voltage:	108,1 dB(A) at 3,01 Vrms
Usage time for the maximum input voltage that correspondents to an equivalent sound output level of 82 dB(A) over 8h:	0,02 h at 3,01 Vrms
The relationship between sound output level and input signal in 5 dB steps from a sound output level ca. 70 dB(A) up to the maximum input voltage:	See tables below

Relationship between sound output level and input voltage

SPL [dB(A)]	70	75	80	85	90	95	100	105	108.1
Input voltage [mVrms]	17.0	31.0	52.0	90.0	152.0	254.0	434.0	1731.0	3085.0
Maximum time exposure	126h. 47min.	40h. 5min.	12h. 40min.	4h. 0min.	1h. 16min.	0h. 24min.	0h. 7min.	0h. 2min.	0h. 1min.

Technical Specifications

Serenity DP+ and Serenity DPC+	
Max. level of ambient sound at ear speaker	82 dB(A) free field equivalent
Attack / Release time	0 ms / 130 ms
Volume control range	-15 dB - +6 dB vs. natural hearing
Typical power consumption	2 mA / max. 2.5 mA
Battery size, supply voltage, life	LR03 (AAA), 1.2 V, min. 500 h
Operational temperature range	-20°C - +60°C
Housing category	IP 54
Cable pull force	50 N
Cord opening force (security break)	25 N
Electromagnetic compatibility (EMC)	EN 55032:2015 / A11:2020, EN 55035:2017 / A11:2020
Inflammability	EN 13819-1

Additional Serenity DPC+ specifications	
Sound output level for maximum input voltage (EN352-9:2020)	Custom ear shell: 103,5 dB(A) at 3,01 Vrms Generic ear shell: 108,1 dB(A) at 3,01 Vrms
Transmission microphone	Electret, close talk, noise canceling (mountable on left or right ear shell)
Microphone sensitivity	-44 (±3) dB re. 1 V/Pa at 1 kHz
Microphone feed voltage	1.5 V - 10 V
Power consumption from radio	Typical 3.8 mA
Radio supply voltage	3.4 V - 10 V

2024-07