

## Product Information

saphyr® neo collection sound processor



The Saphyr® neo collection sound processors offers advanced sound processing via the Crystalis<sup>XDP</sup> coding strategy and Voice Track<sup>TM</sup> noise reduction algorithm. An improved design means reinforced reliability, handling and user satisfaction. Neo collection is fitted via DigiMap 3.4.3 (Build 5600). DigiMap 3.4.3 allows transparent and intuitive fitting with input presentation in dB SPL and provides the possibility of using pre-settings (quiet, medium and loud) or personalised fitting.

### Crystalis<sup>XDP</sup>

#### Clear and comfortable hearing

The incoming sound signal is kept free from any distortion/modification up until the post processing phase. This means that unlike most compression systems Crystalis<sup>XDP</sup> compresses in the frequency domain, so that distortion and signal degradation normally associated with compression is completely avoided. The advantage of Crystalis<sup>XDP</sup> is that it compresses the sound without modifying its structure and speech envelope.

#### Multi-band output compression function named 'XDP'

The XDP works with **4 frequencies clusters** (each representing 5 electrodes). These represent the four most important different areas of speech information. On every cluster a **knee point** can be given. For a low volume sound, Crystalis<sup>XDP</sup> amplifies before the knee point, for a high volume sound, Crystalis<sup>XDP</sup> compresses after the knee point. XDP maximises the use of the output dynamic range and therefore the recipient benefits from a clearer and more comfortable presentation of the sound picture.

#### Fitting with Crystalis<sup>XDP</sup>

The fitting process is kept transparent and intuitive as the signal is given at input in **dB SPL**. DigiMap 3.4.3 provides **3 presets** fittings, or the compression can be personalised. The pre-settings are statistically determined to preserve 95% of the speech information in quiet, medium and loud environments. XDP is designed to maximize the speech information while assuring comfort in

noisy and loud conditions. Crystalis<sup>XDP</sup> is compatible with Saphyr® and Saphyr® neo collection, so the benefits can be offered to more users.

### Voice Track<sup>TM</sup>

#### Hear speech in noise!

In noisy environments the important speech signal is masked by various disturbing, unpleasant, steady background noise. The aim of Voice Track<sup>TM</sup> is to reduce this noise, so that the recipient benefits of a better speech understanding, while still being able to detect important background information (like an alarm).

The Voice Track<sup>TM</sup> noise reduction algorithm works in **3 steps**:

1. Automatic sound analysis,
2. Noise reduction in spectral domain (spectral subtraction), meaning reducing the disturbing background noise that could mask speech. Voice Track<sup>TM</sup> lets background information come through at first, and waits for the sound to become steady over time before reduction.
3. Transmission of the cleaned speech signal.

#### Fitting Voice Track<sup>TM</sup>

DigiMap 3.4.3 provides **3 preset** levels (soft, medium or strong) or can be adjusted freely during the fitting session. The Voice Track<sup>TM</sup> is as a default "on" in DigiMap. But for activations it can be deactivated and introduced at a later fitting session, in order not to introduce too many active settings to the recipient at once. Voice Track<sup>TM</sup> is compatible with Saphyr® and Saphyr® neo collection, so that the benefits can be offered to more users.

#### Sound processing and product features

- 4 coding strategies
- Voice Track<sup>TM</sup> noise reduction
- Multiband output compression
- Up to 4 programs
- Volume control
- Led light indicator
- Low battery warning beeps
- Ergonomic shape
- Easy snap soft hook system
- Integrated Telecoil
- Universal Auxiliary socket
- 2 Microphones for omnidirectionality

#### 4 coding strategies:

- MPIS
- MPIS<sup>XDP</sup>
- Crystalis
- Crystalis<sup>XDP</sup>

#### Fitting

- Fitting software, DigiMap 3.4.3 (Build 5600)
- CS45 programming cable
- 3 preset levels for noise reductions
- 3 preset levels for output compression
- Input in dB SPL

oticon  
MEDICAL

neurelec

# Product Overview & Accessories

saphyr® neo collection sound processor

## THE PHYSICAL PRODUCT

1. Easy snap soft hook
2. Microphones
3. Volume control
4. Program selector
5. LED
6. Antenna lead
7. Antenna
8. Magnet
9. Auxiliary socket
10. Connection socket (fittings)
11. Battery door

*Pictures show saphyr® neo collection.  
External features are identical on saphyr®SP  
and CX neo collection.*



MECHANICAL PROPERTIES	
Operational temperatures	0°C to 55°C
Resistance to humidity	0% to 90%
Storage temperature	(-)20°C to 55°C
Dimensions	Max. dimensions: 50,5 x 50 x 10,6mm
Weight	7.7g without battery 11g with 2 Zinc Air batteries
Colors	7

SIGNAL PROCESSING	
Coding strategy	MPIS/ MPIS <sup>XD</sup> /CRYSTALIS / CRYSTALIS <sup>XD</sup> /
Control of gain	Yes
Numerical analogue conversion	16 bits
Sampling	16 667 Hz - 2 channels
Band width	Up to 8333Hz

CONTROLS	
Settings	Selector wheel on processor
Program selector	4 positions

AUDIO ENTRIES	
Telecoil	Integrated
Auxiliary socket	Universal

CONTROL OPTION	
Light indicator	Bicolor LED (green/red) Can be deactivated
Warning beeps	Changing the program Warning beeps for low batteries. Can be deactivated

BATTERIES	
Power	2 P675 Zinc Air batteries or option of rechargeable batteries (contact Neurelec)
Battery life	Saphyr® SP: 4 days Saphyr® CX: 2 to 3 days

MICROPHONES	
Number	2
Directionality	Omnidirectional
Input dynamic range	25 dB SPL – 105 dB SPL

SOUND PROCESSOR & IMPLANT COMPATIBILITY	
saphyr® CX neo collection	saphyr® SP neo collection
	
Digisonic® DX 10	Digisonic® SP
Digisonic® Convex	Digisonic® SP Binaural
Digisonic® ABI	Digisonic® SP ABI
	Digisonic® SP EVO

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## COLOR SELECTION



\* "SP" and "CX" in the article numbers refers to Saphyr SP et Saphyr CX. Please, check the implant compatibility table on page 2.

### ANTENNA new



- Available in 3 colors
- 
- Black/ Brown/ Silver*

Non-contractual photos

### MAGNET new



- Available in 3 colors
- 
- Black/Brown/Silver*
- 6 Magnet Strengths
  - Tool-free removal

### ANTENNA LEAD new



- Available in 3 colors
- 
- Black/ Brown/ Silver*
- Available in 3 lengths  
6cm/10cm/25cm
  - Reinforced connectors

## OPTIONS AND ACCESSORIES

### Audio and phone connection

The teleloop Silhouette (1) is provided in all Saphyr® neo collection packaging. Silhouette connects directly to the mobile phone or the MP3s player and offers clear inductive transmission for the sound. Monaural and binaural versions are available.

### Wireless capabilities

Saphyr® neo collection sound processor is compatible with the Heartl Media system (2), from the company Phonic Ear offering a wireless connection to mobile smart phones and TV. Heartl Media has to be ordered directly from Phonic Ear.



(1)



(2)

Better speech understanding in noise  
Voice Track™ & Crystalis<sup>XDP</sup>

Comfortable and intuitive

Wireless capabilities



#### ABOUT OTICON MEDICAL / NEURELEC

Oticon Medical combines more than a century of experience in audiology and sound processing with decades of pioneering experience in hearing implant technology.

As a business within the William Demant Group, Oticon Medical enjoys valuable resources including the power to invest in the further development of hearing implant systems and unique access to knowledge, resources and technology of leading hearing solution manufacturer Oticon.

Oticon Medical's "People First" philosophy is a direct heritage from Oticon. Every product Oticon Medical creates – from sound processors and surgical components to fitting, counseling and support tools – is designed with user needs in mind.

With a strong focus on creating lifelong users outcomes, Oticon Medical's starting point will always be the patient's everyday challenges and how to overcome them. Oticon Medical aims to empower all users of hearing implant systems to realize their full potential and live life to the fullest.

Neurelec newly becoming a part of Oticon Medical is sharing the same ideas, and adds to the group 25 years of experience and commitment in the Cochlear implantation business.

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