smart optics

AUDIOLOGY
CATALOGUE

# #pureScanning

*GERMAN ENGINEERING | ATTENTION TO THE DETAILS | QUALITY | PRECISION | DURABILITY*

## SMART OPTICS

Are you looking for a
smart 3D audiology scanner?
Don't look any further!
smart optics has the right solution.

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# WELCOME

## GERMAN ENGINEERING

"We rely on 'Made in Germany' quality for our scanners. All of our audiology products are maintenance-free, dependable and affordable for businesses of all sizes. We do our best every day to find the ideal solution for our partners and customers. Our work focuses on our own quality requirements and ultimately on the 'satisfied owners of hearing aids'. This is proven by the low repair rate of our 3D scanners. For this reason I am particularly proud of my team, which makes smart optics what it is: competent and purposeful."

Dipl. Ing. Jörg Friemel, CEO
smart optics Sensortechnik Gmbh

# SMART OPTICS

## HOME OF 3D SCANNERS

MANUFACTURER OF DEPENDABLE
3D AUDIOLOGY SCANNERS

### OEM

Would you like your own product design
for one of our models?
We deliver it to you according to your
ideas and specifications.

### MADE IN GERMANY

Our aim is to produce always
the best possible quality
and to enable efficient
work processes for our customers.

### 36-MONTH WARRANTY

A technical failure is always
annoying.  We help quickly,
reliably and competently.

### ISO-CERTIFIED

Guaranteed best quality.
With us you know where you stand,
because smart optics is of course
ISO-certified.

Our products have firmly established themselves in the audiology industry due to their performance and quality. Fulfilling customer requirements and finding new, innovative solutions are our daily challenges and therefore part of our core competence. For us, the EN ISO 13485 standard is not only mandatory for the design and manufacture of medical products but also part of our quality commitment and promise. The voluntary implementation of DIN EN ISO 9001 represents the cornerstone of our business activities. We are convinced of our quality, so that all our products have a 36-month warranty.

## QUALITY

# QUALITY CONTROL

At smart optics, quality and service always comply with the ISO 9001 and 13485 standards.

Quality Management System

Quality Management System for Medical Devices

**ATTENTION TO THE DETAILS**

FREE STAGE ONE                    FREE STAGE TWIN

■ MONO SCAN

Our audiology products free Stage one, free Stage twin, mono Scan, duo Scan and ds Production are 3D scanners for the digitization of ear impressions, precisely tailored to your specific needs. As a HIMSA member company, smart optics equips all scanners with a Noah interface as a matter of course, allowing the scanners' software to be integrated into your Noah system.

■ DUO SCAN

■ DS PRODUCTION

# ▪ FREE STAGE <sup>ONE</sup>

The free Stage one was created for acousticians who are looking for a modern, open store solution. The open view into the measuring area allows the user to demonstrate his customers the complete scanning process in an impressive way. The impressions can be inserted one after the other, remarkable is the nearly noiseless operation at a scanning speed of only 15 seconds.

The open standard output formats allow the files to be processed by industrial manufacturing centers or in all industry-standard CAD software solutions. Compatibility with Noah and winIPRO is also ensured.

The slimly designed 3D scanner can be used in even the smallest branches.

## MEASUREMENT

| | |
|---|---|
| Accuracy | < 9 μm |
| Scan time | 16 seconds*<br>(two impressions simultaneously) |
| Sensor technology | Structured light triangulation with long-life high performance LED |
| Scan quality resolution | variable |
| Output format | STL, ASCII, MSH, PLY |

## FEATURES

### SOFTWARE

- ✔ Annotating and commenting
- ✔ Several naming methods
- ✔ Barcode naming* Required: Barcode scanner
- ✔ 3D calibration*Accessories required
- ✔ Color scan
- ✔ Project export including FTP upload

## DEVICE INFORMATION

| | |
|---|---|
| Size (W × L × H) | 186 × 292 × 348 mm |
| Weight | 6.5 kg |
| Supply voltage | 24 VDC<br>50/60 Hz |
| Connections | 1 USB<br>1 Power |
| Touch sensor | — |
| Open scanning | ✔ |
| Warranty | 36 months |
| Warranty extension | 🔑 12 months |

## DUST COVER



The handmade dust cover is non-transparent and repellent (water, dirt, oil). Slots especially designed to connect devices exist and ensure a perfect fit.

## SOFTWARE

| | |
|---|---|
| Scanning software | aural Scan |
| Noah compatible | ✔ |
| IPRO compatible | ✔ |

*Plus Matching time 3-10 seconds, depending on PC configuration.

## SCOPE OF DELIVERY

| | |
|---|---|
| 1 | free Stage one |
| 2 | Object holders |
| 1 | Power cable |
| 1 | USB cable |
| 1 | Scanning software with calibration data |

# **FREE STAGE** TWIN

The free Stage twin turns any workplace into an eye-catcher. The modern, slim design of the 3D scanner combines its elegant look with a robust construction. The open scanner simplifies workflows and gives users the opportunity to let their customers experience the complete scanning process in an impressive way. The free Stage twin can scan two impressions simultaneously. With the help of the coloured needle adapters, the assignment of the impressions is visually simplified. The user can decide whether the 3D data is to be captured monochrome or whether marked textures are to be made visible with the help of a color scan.

The touch sensor of the free Stage twin allows to start the nearly noiseless scanning process directly at the scanner. The open standard output formats enable the files to be processed by industrial manufacturing centers or in all industry-standard CAD software solutions. Compatibility with Noah and winIPRO is also ensured.

The free Stage twin impresses with its high quality, making it the perfect partner for hearing care professionals.

| MEASUREMENT | |
| --- | --- |
| Accuracy | < 9 µm |
| Scan time | 16 seconds[*]<br>(two impressions simultaneously) |
| Sensor technology | Color scan<br>Structured light triangulation with<br>long-life high performance LED |
| Scan quality resolution | variable |
| Output format | STL, ASCII, MSH, PLY |

## 🔧 FEATURES

### SOFTWARE

- ✔ Quick start function
- ✔ Annotating and commenting
- ✔ Several naming methods
- ✔ Barcode naming[* Required: Barcode scanner]
- ✔ 3D calibration[*Accessories required]
- ✔ Color scan
- ✔ Project export including FTP upload

## 🏷 DUST COVER



The handmade dust cover is non-transparent and repellent (water, dirt, oil). Slots especially designed to connect devices exist and ensure a perfect fit.

## 📦 SCOPE OF DELIVERY

| | |
| --- | --- |
| 1 | free Stage twin |
| 2 | Object holders |
| 1 | Power cable |
| 1 | USB cable |
| 1 | Scanning software with calibration data |

| DEVICE INFORMATION | |
| --- | --- |
| Size (W × L × H) | 186 × 292 × 348 mm |
| Weight | 6.5 kg |
| Supply voltage | 24 VDC<br>50/60 Hz |
| Connections | 1 USB<br>1 Power |
| Touch sensor | ✔ |
| Open scanning | ✔ |
| Warranty | 36 months |
| Warranty extension | 🔑 12 months |

| SOFTWARE | |
| --- | --- |
| Scanning software | aural Scan |
| Noah compatible | ✔ |
| IPRO compatible | ✔ |

*Plus Matching time 3-10 seconds, depending on PC configuration.

# MONO SCAN

The mono Scan from smart optics allows to generate 3D data from ear impressions. The handy desktop scanner is the digitization entry-level solution for ENT doctors' offices and smaller shops. It offers a particularly cost-effective basis for creating, digital ear impressions and stands out due to its glossy white appearance.

A single impression can be recorded within a very short time. Standard open output formats facilitate the connection to industrial manufacturing centres or to your own CAD software.

## MEASUREMENT

| | |
|---|---|
| Accuracy | < 9 µm |
| Scan time | 15 seconds* (one impression) |
| Sensor technology | Structured light triangulation with long-life high performance LED |
| Scan quality resolution | variable |
| Output format | STL, ASCII, MSH, PLY |

## 🔧 FEATURES

### SOFTWARE

- ✔ Quick start function
- ✔ Annotating and commenting
- ✔ Several naming methods
- ✔ Barcode naming* Required: Barcode scanner
- ✔ 3Dcalibration *Accessoires required
- ✔ Project export including FTP upload

## DEVICE INFORMATION

| | |
|---|---|
| Size (W × L × H) | 300 × 367 × 145 mm |
| Weight | 7.5 kg |
| Supply voltage | 100 – 240 VAC 50/60 Hz |
| Connections | 1 USB 1 Power |
| Touch sensor | — |
| Open scanning | — |
| Warranty | 36 months |
| Warranty extension | 🔑 12 months |

## 📦 SCOPE OF DELIVERY

- 1   mono Scan
- 1   Object holder
- 1   Power cable
- 1   USB cable
- 1   Scanning software with calibration data

## SOFTWARE

| | |
|---|---|
| Scanning software | aural Scan |
| Noah compatible | ✔ |
| IPRO compatible | ✔ |

*Plus Matching time 3-10 seconds, depending on PC configuration.

# ▪ DUO SCAN

The duo Scan is a reliable 3D scanner for digitizing ear impressions and was designed for daily use in ENT doctors' offices, shops and production. The compact, powerful scanner can be added seamlessly to any workstation.

Its unobtrusive design and the pleasant operating sound level are an advantage when the device is up inside the shop.

The short scanning time ensures a high daily throughput.

## MEASUREMENT

| | |
|---|---|
| Accuracy | < 9 µm |
| Scan time | 18 seconds* (two impressions simultaneously) |
| Sensor technology | Color scan Structured light triangulation with long-life high performance LED |
| Scan quality resolution | variable |
| Output format | STL, ASCII, MSH, PLY |

## FEATURES

### SOFTWARE

- ✔ Quick start function
- ✔ Annotating and commenting
- ✔ Several naming methods
- ✔ Barcode naming* Required: Barcode scanner
- ✔ 3D calibration *Accessories required
- ✔ Color scan
- ✔ Project export including FTP upload

## DEVICE INFORMATION

| | |
|---|---|
| Size (W × L × H) | 300 × 340 × 145 mm |
| Weight | 8 kg |
| Supply voltage | 100 – 240 VAC 50/60 Hz |
| Connections | 1 USB 1 Power |
| Touch sensor | — |
| Open scanning | — |
| Warranty | 36 months |
| Warranty extension | 🔑 12 months |

## SCOPE OF DELIVERY

| | |
|---|---|
| 1 | duo Scan |
| 2 | Object holders |
| 1 | Power cable |
| 1 | USB cable |
| 1 | Scanning software with calibration data |

## SOFTWARE

| | |
|---|---|
| Scanning software | aural Scan |
| Noah compatible | ✔ |
| IPRO compatible | ✔ |

*Plus Matching time 3-10 seconds, depending on PC configuration.

# DS PRODUCTION

The ds Production is characterized by a robust metal housing and the use of high-quality optical and mechanical components. This makes it particularly suitable for continuous use under production conditions.

As the ideal companion for every production chain, the ds Production scores with its precision and short scanning time. The ds Production easily handles large processing quantities and is therefore predestined for continuous use.

Two additional color-coded object holders are included for a quick change of the ear impressions.

## MEASUREMENT

| | |
|---|---|
| Accuracy | < 9 µm |
| Scan time | 16 seconds* (two impressions simultaneously) |
| Sensor technology | Color scan Structured light triangulation with long-life high performance LED |
| Scan quality resolution | variable |
| Output format | STL, ASCII, MSH, PLY |

## 🔧 FEATURES

### SOFTWARE

- ✔ Quick start function
- ✔ Annotating and commenting
- ✔ Several naming methods
- ✔ Barcode naming * Required: Barcode scanner
- ✔ 3D calibration *Accessories required
- ✔ Color scan
- ✔ Project export including FTP upload

## DEVICE INFORMATION

| | |
|---|---|
| Size (W × L × H) | 300 × 340 × 155 mm |
| Weight | 10 kg |
| Supply voltage | 100 – 240 VAC 50/60 Hz |
| Connections | 1 USB 1 Power |
| Touch sensor | — |
| Open scanning | — |
| Warranty | 36 months |
| Warranty extension | 🔑 12 months |

## 📦 SCOPE OF DELIVERY

| | |
|---|---|
| 1 | ds Production |
| 4 | Object holders |
| 1 | Power cable |
| 1 | USB cable |
| 1 | Scanning software with calibration data |

## SOFTWARE

| | |
|---|---|
| Scanning software | aural Scan |
| Noah compatible | ✔ |
| IPRO compatible | ✔ |

*Plus Matching time 3-10 seconds, depending on PC configuration.
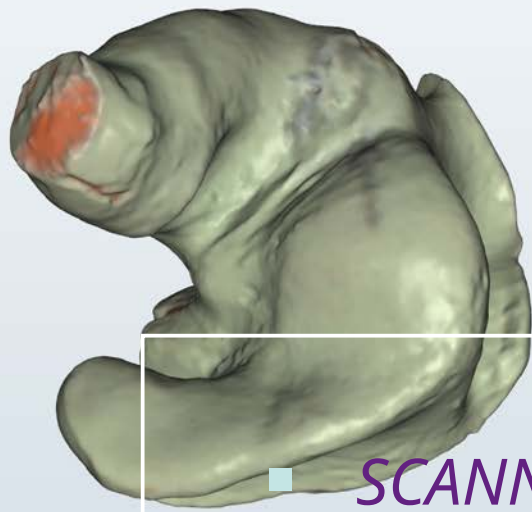
# SCANNING SOFTWARE

## AURAL SCAN

*Precise. Efficient. QM compliant.*
smart optics' 3D audiology scanners are equipped with the aural Scan scanning software. aural Scan was developed in close contact with audiologists to optimize the digitization of ear impressions (individually or in pairs) and to design an efficient workflow.

Does this sound familiar to you?
A desk full of new orders. Your mind is longing for some order. Where the heck is the cutting tool? Hectic work processes and loads can create stress.

aural Scan is a reliable and stable software for the demanding everyday life, with a modern, structured design. It focuses on communication and accuracy. Ear impressions can be digitized quickly with aural Scan. User instructions offer a safe guideline through all work steps.

aural Scan is completed by useful features that facilitate the workflow and save valuable time.

*The digital workflow begins with the scan.* The process starts directly to support fast working. Names can be assigned at any time, automatically, manually or optionally by means of barcodes. The system is flexible and can be adapted to individual specifications.

All software tools are clearly arranged and identified by means of appealing icons. The 3D viewer has variable views of scans and features correction functions. Editing notes can be recorded both as pinpointed annotations and project comments. For jobs where every detail of the surface texture is important, the colored texture scan can be activated.

The export function facilitates order communication: The completed scan project can be saved as a ZIP archive, sent by email or uploaded to an FTP server. A configurable PDF document clearly summarizes the orders' data.
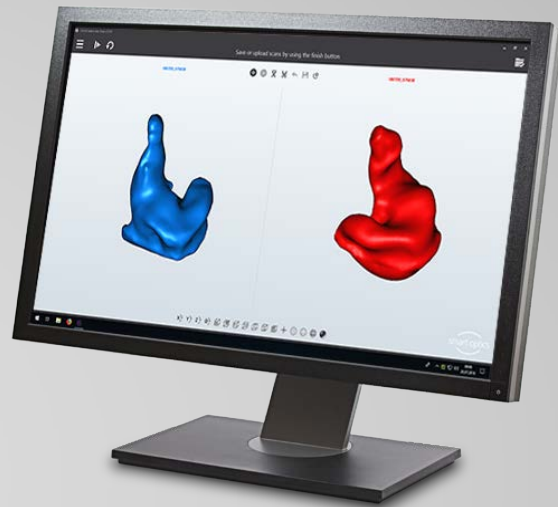
When HIMSA's Noah is in use, the integrated interface allows scanner workstations to be integrated into the Noah system. The Noah patient browser is the starting point for the scanning process: Simply select the patient and start aural Scan. Noah workstations without a scanner can be allowed for using aural Scan to view scans.

aural Scan can be adapted to different needs. Among others, the following can be configured: Language, file formats (STL, MSH, ASCII and PLY), file storage, impression color, scan strategy, quality, automatic cutting or also the impression color. aural Scan can work with individual user profiles.

All aural Scan functions mentioned above are included in the standard scope of delivery (the barcode scanning and rescanning functions are not possible with mono Scan).

smart optics' 3D scanners and software meet the highest quality standards. Thanks to regular axis calibration, scans always achieve a high level of accuracy.

## AURAL SCAN SYSTEM REQUIREMENTS

Recommended
- Windows 11 64-Bit
- Quad Core CPU, i5
- 8 GB RAM
- USB 3.0 Port
- HDD with approx. 80 GB free disk space
- Graphics card with 2 GB RAM

# 3D CALIBRATION

Meet the growing requirements of quality management with the 3D calibration function included in the aural Scan scanning software.

For the highest requirements, e.g. in quality management, smart optics recommends the optional 3D calibration, for which a special 3D calibration object is required (available as an accessory). The extensive process calibrates the sensor, the axes and the mesh calculation. After validation, aural Scan creates a test report that documents the current accuracy.

A video in the smart optics university explains how to use the 3D calibration and where you can access the protocols.

Would you like to learn more about 3D calibration? Our sales team will be happy to support you.

*PRECISION*

## ACCURACY IS
## OUR STRENGTH

Attention to the details, German engineering, quality and accuracy are not just empty words for smart optics, but are part of the company's cornerstone and are responsible for the fact that the 3D scanner manufacturer is a company with heart and mind.

The medium-sized company was founded in Bochum in 1997 and keeps its roots in the field of measurement technology to this day. The first scanners went into series production in the 2000s, and since then, the Bochum-based company has been developing, producing and expanding its product portfolio.

At smart optics, all company areas are united under one roof, ensuring the smooth running of all processes. The 3D scanners Made in Germany set international standards and enjoy the highest level of customer satisfaction.

# BRAINPOWER

## & FUTURE THINKING

Our products have firmly established themselves in the dental and audiology industry, as well as in electronics, due to their performance and quality. Our long-standing experience and the constant exchange with our customers help us to further develop and improve our products in a customer–, quality– and future-oriented manner.

Fulfilling customer requirements and finding new, innovative solutions are our daily challenges and therefore part of our core competence. We concentrate on implementing projects quickly and in a targeted manner, in close cooperation with our customers and development partners.

### *WE ARE HERE FOR YOU*

We focus on people – our customers as well as our employees. Without the commitment of our employees, we would not be able to grow and be successful on the market.

**SHORT FACTS**

☆ ESTABLISHED IN 1997

▥ BOCHUM | GERMANY

👤 > 60 EMPLOYEES

💻 > 2,000* DENTAL SCANNERS
> 1.000* AUDIOLOGY SCANNERS (* YEAR)

🏪 EU ONLINE SHOP SINCE 2020

👥 > 100 INTERNATIONAL RESELLERS

## WE ADVISE YOU ACCORDING TO YOUR NEEDS

Upon request, you will receive detailed advice on our products: on site, by phone or via the Internet. The consultation is primarily about establishing precisely the right focus for your needs. Increase the performance of your company with our solutions.

## WE ARE VERY PARTICULAR ABOUT YOUR NEEDS

OUR SERVICES

- OEM and standard solutions

- Product training for our resellers in the fields of sales and support

- Long-term project planning

- Fulfilment of high quality standards in manufacturing and development

- Support with market approvals for the target markets of our customers

- Development of complex logistics processes

# MORE SMART OPTICS

Would you like more product information? No problem at all. At the smart optics University you can watch tutorials on aural scan and real-time scans of our audiology scanners.

The website provides you with news about products and the company. If you don't want to miss anything, you can subscribe to the smart optics newsletter and receive information about release notes, events and more.

From EU countrys you can conveniently order scanners and software in our online shop. Your advantage: In the event of a sales campaign, the discount is automatically deducted in the online shop.

Finding tutorials, reading news
or ordering scanners is very
easy with us!
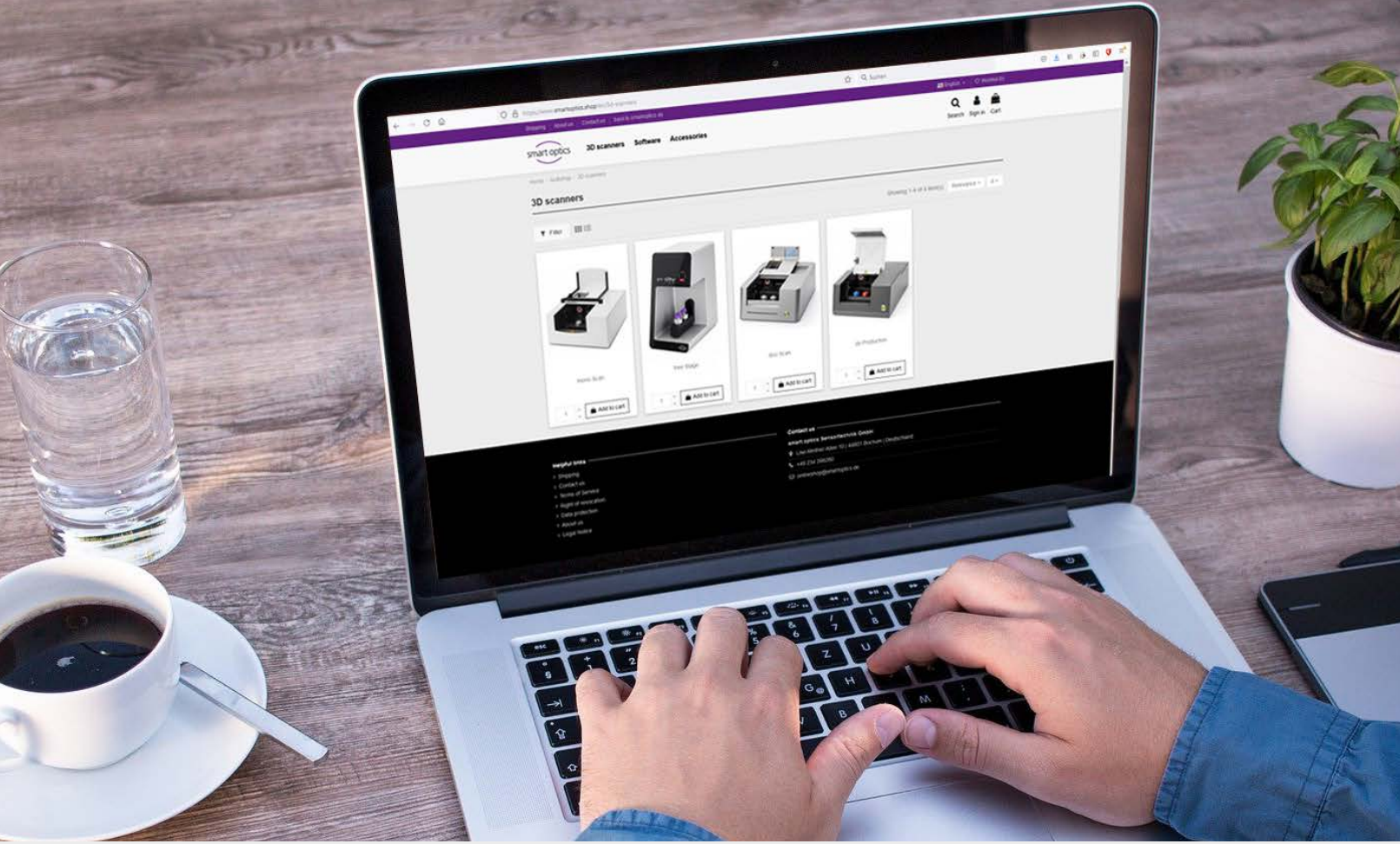


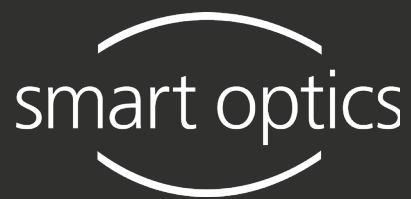Tutorials
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Newsletter
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Orders
smartoptics.de/ashe

# NOTES

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