



Optical Probes and Measuring Cells

FOR UV/VIS/NIR/IR/RAMAN SPECTROSCOPY

FOR LABORATORY, PILOT PLANT AND PROCESS ANALYTICS **(PAT)**

MADE IN GERMANY



YOUR PROCESS – OUR SOLUTIONS

As a leading supplier of high-precision, optical solutions that are 'Made in Germany' from glass, quartz glass and synthetic crystals, Hellma has been a by-word for outstanding quality for more than 95 years.

Hellma Analytics

Optical components and assemblies for use in systems that serve analytical technology.

www.hellma-analytics.com



Hellma Materials

High-quality synthetic crystals for use in the fields of microlithography, optics, laser technology and radiation detection.

www.hellma-materials.com



Hellma Optics

Premium-quality precision optics for use in laser technology as well as all areas of photonics and the optical industry.

www.hellma-optics.com



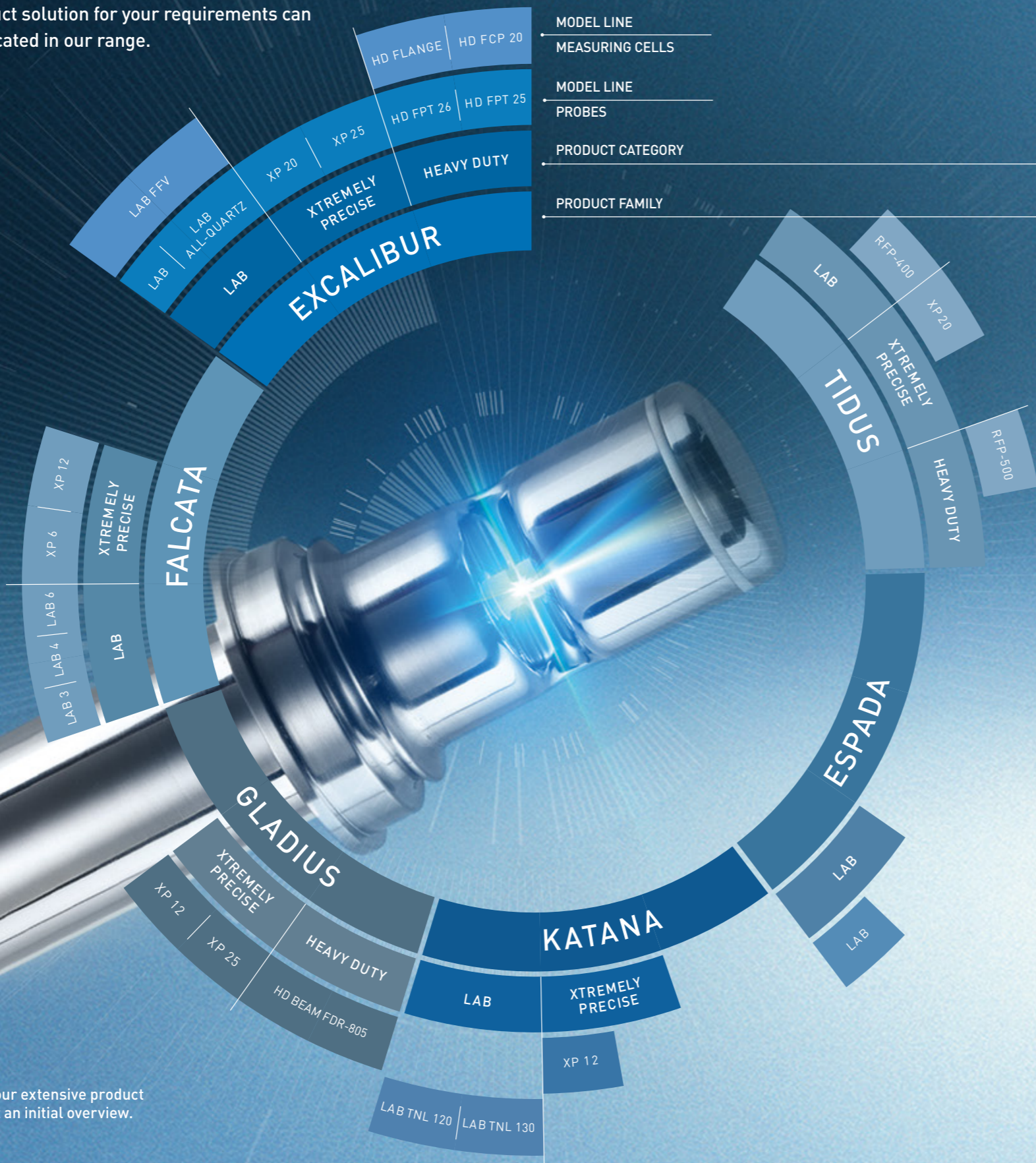
Our wide-ranging experience means that our product solutions are extremely diverse and perfectly designed to meet your needs.

- Probes and measuring cells for UV/Vis/NIR/IR/Raman spectroscopy
- Products for use in liquids, powders, gases, solids and pastes
- Customized technology for lab and process applications
- Patented sealing technology to withstand the harshest process conditions



VARIED PORTFOLIO. CLEAR STRUCTURE.

Hellma's product structure makes it simple to find what you need. The perfect product solution for your requirements can be quickly and easily located in our range.



MODEL LINE
MEASURING CELLS

MODEL LINE
PROBES

PRODUCT CATEGORY

PRODUCT FAMILY

HELLMA
PRODUCT FAMILIES
each presents a measuring principle from our product range

HELLMA
PRODUCT CATEGORIES
facilitate product search by application

- EXCALIBUR**
Measuring principle: Transmission
- FALCATA**
Measuring principle: Transflection
- GLADIUS**
Measuring principle: Reflection
- KATANA**
Measuring principle: Attenuated Total Reflection (ATR)
- ESPADA**
Measuring principle: Fluorescence
- TIDUS**
Measuring principle: Raman

LAB

FIELD OF APPLICATION:
Laboratory

PARTICULARLY SUITABLE FOR:
small volumes

CHARACTERIZED BY:
high transmission

XTREMELY PRECISE

FIELD OF APPLICATION:
Process and pilot plant

PARTICULARLY SUITABLE FOR:
Measurements with high reproducibility

CHARACTERIZED BY:
very high accuracy of path length and excellent transmission

HEAVY DUTY

FIELD OF APPLICATION:
Process analysis (PAT)

PARTICULARLY SUITABLE FOR:
rough process conditions

CHARACTERIZED BY:
high pressure and temperature resistance

This small sample of our extensive product program provides just an initial overview.

A CLEAR PICTURE OF YOUR PERFECT PRODUCT SOLUTION

Our product portfolio is continually growing and developing. The products shown on the following pages represent just a small selection of our pre-assembled range, in order to give you an initial overview of the options we can offer.

You will find the most common products in our new online configuration tool. This can be used to navigate quickly and easily through our continuously expanding product range to find the perfect solution for your needs.

→ configurator.hellma.com

...specially suited for transmission measurements under harsh process conditions.

Excalibur HD FPT 24 Atom Technology

Excalibur HD FPT 25 Atom Technology

Configure individually

EXCALIBUR LAB



Ideally suited for laboratory transmission measurements where low pressure and normal temperatures do not require a special seal in the measuring head area. The optical material of all laboratory probes is quartz glass.

Excalibur Lab Atom Technology Excalibur Lab 'all-quartz' Atom Technology

Configure individually

FALCATA XTREMELY PRECISE



For transmission measurements in process application. The high-performance measuring head enables extremely precise and reliable measurement results.

Falcata XP 6 Atom Technology Falcata XP 12 Atom Technology

Configure individually

FALCATA LAB



Ideally suited for laboratory transfection measurements. Compactly built and flexibly usable by interchangeable path length tips. The optical material of all laboratory probes is quartz glass.

Falcata Lab 3 Atom Technology Falcata Lab 4 Atom Technology Falcata Lab 6 Atom Technology

Configure individually

GLADIUS HEAVY DUTY



The spectrometric measurement of the diffused reflection is a powerful tool for qualitative and quantitative analysis of powdered or granulated solids and compounds. Very robust design for long and reliable use in the process.

Gladius HD Beam FDR-805 Atom Technology

Configure individually

CELLS (1) | PROBES (12)

EXCALIBUR HEAVY DUTY CELLS



With their metal-sealed design, the measuring cells of this category are particularly well suited for transmission measurements under harsh process conditions.

Excalibur HD FCP 20 Cell Atom Technology

Configure individually

All our pre-configured probes and measuring cells can also be customized using our new online configuration tool, to make them perfect for your application in every detail.

See pages 12 and 13 for more tips and information!

DIVERSE AND CUSTOMIZABLE. AN OVERVIEW OF OUR PRE-CONFIGURED PRODUCT RANGE:

EXCALIBUR IMMERSION PROBES

Measuring principle: Transmission

LAB

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **LAB | PILOT PLANT**



Immersion Probes in this category are ideally suited for transmission measurements in laboratories, where due to moderate temperatures no special sealing technology is needed. The monolithic quartz measuring head provides excellent results.

EXAMPLE:

Excalibur lab

Article no.
LEIX10UE20AN

Excalibur lab all-quartz

Article no.
LQID10UE20AN

HEAVY DUTY

Axiom Technology

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **PROCESS | PILOT PLANT**



Thanks to metal-sealed optics, the products of this category are particularly suitable for transmission measurements under harsh process conditions. Different diameters are available.

EXAMPLE:

Excalibur HD FPT 25

Article no.
PX5BSSGNAALD240G

Excalibur HD FPT 26

Article no.
PX4BSSGNABLL200G

XTREMELY PRECISE

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **PROCESS | PILOT PLANT**



The elastomer-sealed measuring head with very high transmission enables particularly accurate and reliable measurements. Basic models of this category are available in diameters 20 mm and 25 mm.

EXAMPLE:

Excalibur XP 20

Article no.
PE3BQEZNAASL240N

Excalibur XP 25

Article no.
PE4BQEZNAASL240N



WORKFLOW OPTIMEZED

All probes shown here are usually available to deliver within just a few weeks. The configuration tool also provides precise details of delivery times.



AXIOM TECHNOLOGY

Thanks to the metal-sealed technology, the measuring cells and probes in this category are particularly well suited to performing measurements in harsh process conditions.

EXCALIBUR MEASURING CELLS

Measuring principle: Transmission

LAB

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **LAB | PILOT PLANT**



These compact measuring cells offer a high degree of flexibility. The fiber optic connection allows easy positioning. Optionally, the optical light path can be varied and the cell can be heated.

EXAMPLE:

Excalibur Lab FFV

Article no.
CFWDZZSSNV00NFPXN

HEAVY DUTY

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **PROCESS | PILOT PLANT**



The transmission measuring cells are designed for use in production processes under harsh conditions. They are ideal for installation in pipelines and, depending on the size, can be used in the bypass or main product flow.

EXAMPLE:

Excalibur HD Flange

Article no.
FEBCSSANIC615SLNN

Axiom Technology

Excalibur HD FCP-020

Article no.
CACSGSSSNL002NGDXG

FALCATA IMMERSION PROBES

Measuring principle: Transflection

LAB

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **LAB**



Ideal for transflection measurements in the laboratory. Compact design and flexible use thanks to exchangeable tips (6 mm diameter). The small outside diameters (3 mm, 4 mm, 6 mm) enable installation where space is limited (e.g. laboratory reactors, tablet dissolution tests).

EXAMPLE:

Falcata 3

Article no.
LFCI10UE20AN

Falcata 4

Article no.
LFDI10UE20AN

Falcata 6

Article no.
LFEITSUE20AN

XTREMELY PRECISE

SAMPLE MEDIA: **LIQUID**
WAVELENGTH RANGE: **UV, VIS, NIR**
MEASURING SITE: **PROCESS | PILOT PLANT**



Ideal for transflection measurements in process applications. The compact measuring head allows flexible use, provides extremely precise and reliable measurements. Available in 6 mm and 12 mm diameters.

EXAMPLE:

Falcata XP 6

Article no.
PF1FQSZNEASL240N

Falcata XP 12

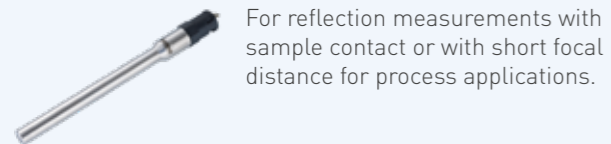
Article no.
PF2FQSZNEASL240N

GLADIUS IMMERSION PROBES

Measuring principle: Reflection

XTREMELY PRECISE

SAMPLE MEDIA: **PASTE | SUSPENSION**
 WAVELENGTH RANGE: **UV, VIS, NIR**
 MEASURING SITE: **LAB | PROCESS | PILOT PLANT**

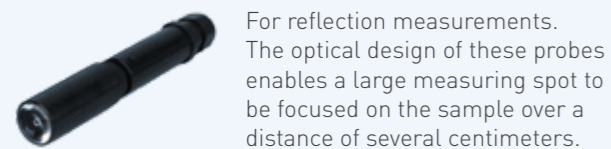


EXAMPLE:

Gladius XP 12	Gladius XP 25
Article no. PG2BSSEJEASM240N	Article no. PG4BSSEJEASM240N

HEAVY DUTY

SAMPLE MEDIA: **PASTE | POWDER**
 WAVELENGTH RANGE: **UV, VIS, NIR**
 MEASURING SITE: **PROCESS | PILOT PLANT**



EXAMPLE:

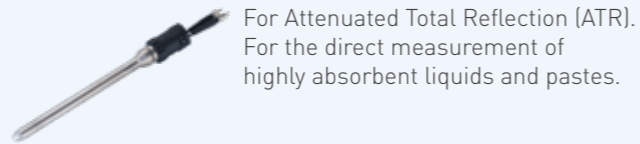
Gladius HD FDR-805
Article no. PB7VFAIRGASZ000N

KATANA IMMERSION PROBE

Measuring principle: Attenuated Total Reflection (ATR)

XTREMELY PRECISE

SAMPLE MEDIA: **LIQUID | PASTE**
 WAVELENGTH RANGE: **UV, VIS, NIR**
 MEASURING SITE: **LAB | PROCESS | PILOT PLANT**



EXAMPLE:

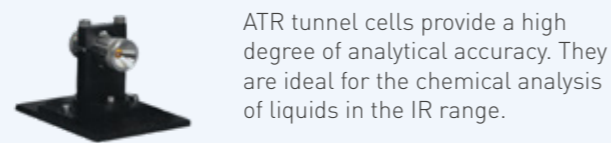
Katana XP 12
Article no. PK2KSSZUEASM240N

KATANA MEASURING CELLS

Measuring principle: Attenuated Total Reflection (ATR)

LAB

SAMPLE MEDIA: **LIQUID**
 WAVELENGTH RANGE: **IR**
 MEASURING SITE: **LAB | PILOT PLANT**



EXAMPLE:

Katana TNL 120	Katana TNL 130
Article no. CKHZZSEIA00WNNAN	Article no. CKDZZSEIA00WNNAN



AXIOM TECHNOLOGY

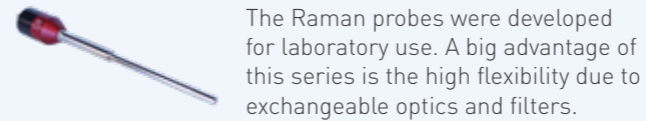
Thanks to the metal-sealed technology, the measuring cells and probes in this category are particularly well suited to performing measurements in harsh process conditions.

TIDUS IMMERSION PROBES

Measuring principle: Raman

LAB

SAMPLE MEDIA: **LIQUID**
 EXCITATION WAVELENGTH: **VIS**
 MEASURING SITE: **LAB | PILOT PLANT**

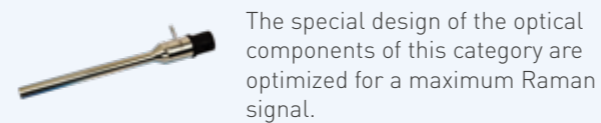


EXAMPLE:

Tidus Lab RFP-442
Article no. RA2ASSHDKALH200N

XTREMELY PRECISE

SAMPLE MEDIA: **LIQUID**
 EXCITATION WAVELENGTH: **VIS**
 MEASURING SITE: **PROCESS | PILOT PLANT**

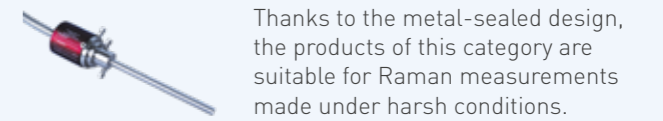


EXAMPLE:

Tidus XP 20
Article no. RB3JSSYFRASL240N

HEAVY DUTY Axiom Technology

SAMPLE MEDIA: **LIQUID**
 EXCITATION WAVELENGTH: **VIS**
 MEASURING SITE: **PROCESS**



EXAMPLE:

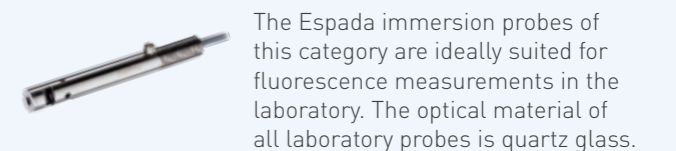
Tidus HD RFP-540
Article no. RD3LSSGDKALE300Y

ESPADA IMMERSION PROBE

Measuring principle: Fluorescence

LAB

SAMPLE MEDIA: **LIQUID**
 WAVELENGTH RANGE: **UV, VIS**
 MEASURING SITE: **LAB**



EXAMPLE:

Espada Lab
Article no. LDIX03UE20AN

HELLMA IMMERSION PROBE AND MEASURING CELL CONFIGURATION TOOL



Dr. Oliver Mandal, Product Manager for Sample Interfaces for Spectroscopy, explains the fastest way to find the product solutions you need.

Our configuration tool makes it even more straightforward for clients to find their way around our range. It significantly streamlines the process of finding and ordering products.



FLEXIBLE SEARCH OPTIONS:

Search for products based on key parameters and operating conditions

BASIC PARAMETERS

MEDIUM

Solid Liquid Gas

Paste, emulsion, suspension

MEASURING PRINCIPLE

Transmission Transfection Reflection ATR

Raman Fluorescence

You can use simple key parameters to quickly display a range of suitable products, before narrowing down the selection by entering specific operating conditions.

- SAMPLE MEDIUM
- MEASURING PRINCIPLE
- WAVELENGTH RANGE
- MEASUREMENT SITE
- MAXIMUM/MINIMUM PRESSURE
- LOWEST/HIGHEST TEMPERATURE
- ATEX SPECIFICATIONS

Search for products from the pre-configured range

ASSORTMENT

Make your choice from our assortment of pre-configured products.

Show products

If you already know which products you are interested in, or want to see a complete overview, you can choose to display all products available in the configuration tool.

Search for products by article number

ARTICLE NO.

Enter article No. to see corresponding product details.

Article number

Show product

You can call up a specific pre-configured product directly by entering the article number, e.g. from a product you already have.

STILL HAVEN'T FOUND THE RIGHT PRODUCT?

Configure your product

For every product, you can choose a basic version which comes pre-configured with standard parameters. But if this doesn't meet your needs, the products can be adapted or fully custom-configured.

PROBE TYPE
Excalibur XP 20

CONFIGURATION

- ✓ Outer Diameter: 20 mm | 3...
- ✓ Optical Path Length / Focu...
- ✓ Optical Material: Quartz GL...
- ✓ Body Material: Stainless St...
- ✓ Sealing Technology: Kalrez...
- ✓ Spectral Range: NIR
- ✓ Optical Connection: F-SMA...

ONLINE FOR YOU
configurator.hellma.com





High-quality maintenance ensures that your immersion probes and measuring cells continue to perform reliably.

WHY REGULAR MAINTENANCE HELPS YOU RELAX

Plant efficiency and process reliability are crucial for you – this is why you use products from Hellma. Hellma’s high quality products are designed for precision, reliability and durability. However, under extreme conditions and after prolonged operation, it is important to keep an eye out for signs of wear. We have an effective programme to support you with this. Regular maintenance minimizes the risk of sudden product failure, which could result in high process costs and time loss. With a maintenance contract, you are taking active precautions while saving time and money, enabling you to focus on more important matters instead.



It is better to act than to react. Maintenance is important!



- Increased process reliability and plant efficiency
- Significantly reduced process risk
- Prevention of downtimes and associated process costs
- Compliance with legal requirements and standards
- Longer product lifetime
- Warranty on all work performed
- Extended warranty



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