



Optical Probes and Measuring Cells

FOR UV/VIS/NIR/IR/RAMAN SPECTROSCOPY

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

MADE IN GERMANY



Reliable and Safe Measurement Results in Optical Analytics

For over 100 years **Hellma** has been the world's leading supplier of UV|Vis|NIR spectroscopy cuvettes for laboratory analytics and is now also a solution specialist in process analytical technology for a wide range of applications in research and industry. Products and services of the **Hellma Analytics** and **Hellma Solutions** brands provide the basis for precise and reliable measurement results in laboratory and process and thus safe and high-quality end products in the chemical, pharmaceutical, life science, food and beverage, cosmetics, environment, energy, technology and research industries.

Eight Hellma sales subsidiaries worldwide and over 200 international points of sales are available to customers for direct contact. Hellma is valued worldwide for its high performance, consulting competence and well-proven products.

100% Made in Germany.

www.hellma.com



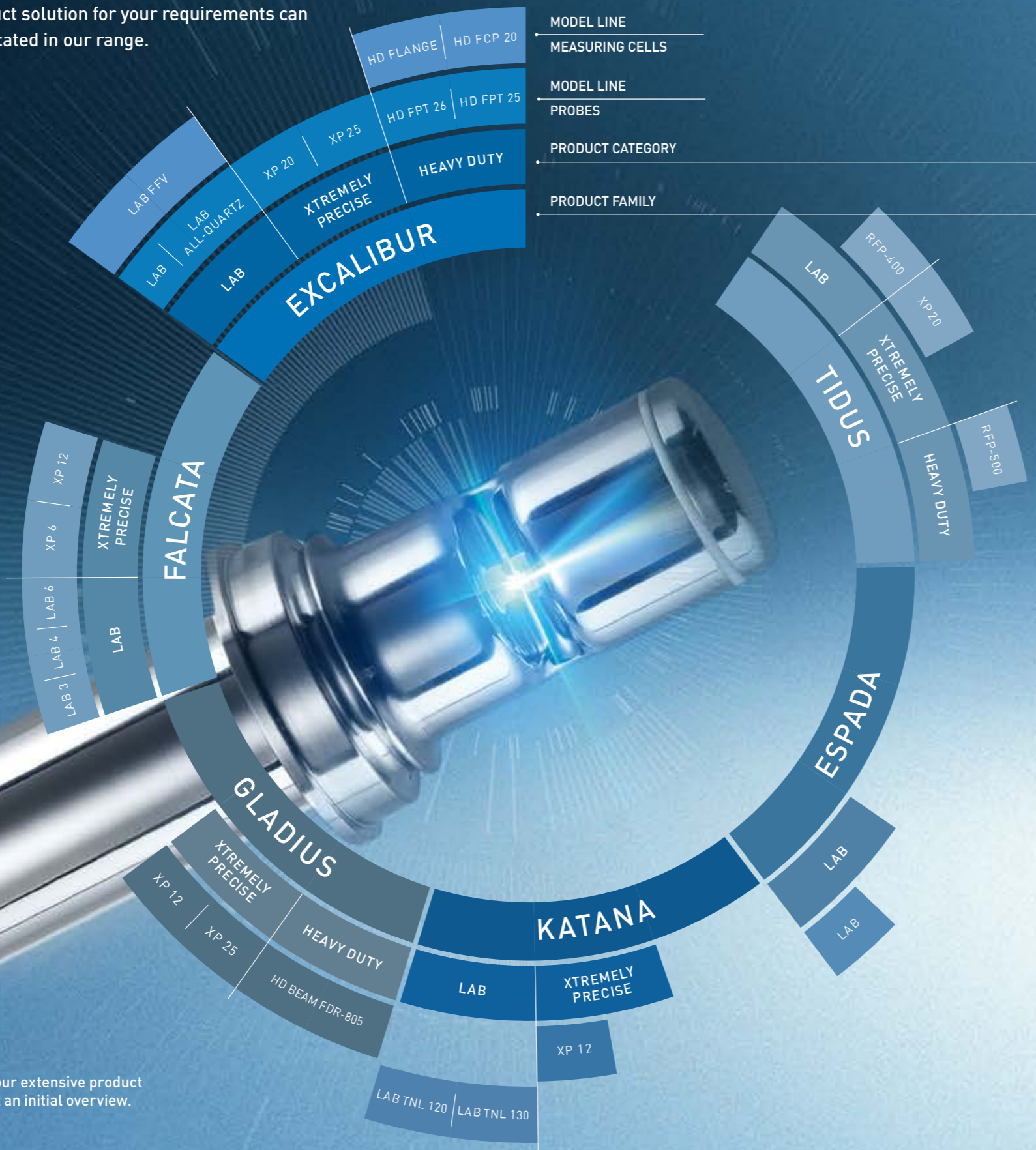
Our wide-ranging experience means that our product solutions are extremely diverse and perfectly designed to meet your needs.

- 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.



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



HELLMA PRODUCT FAMILIES

each presents a measuring principle from our product range

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



HELLMA PRODUCT CATEGORIES

facilitate product search by application

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

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

Excilbur HD FPT 24
Excilbur HD FPT 25
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.
Excilbur Lab
Excilbur Lab 'all-quartz'
Configure individually

FALCATA XTREMELY PRECISE
For transfection measurements in process application. The high-performance measuring head enables extremely precise and reliable measurement results.
Falcata XP 6
Falcata XP 12
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
Falcata Lab 4
Falcata Lab 6
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
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.
Excilbur HD FCP 20 Cell
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

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.

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.
CFWZZSSNV00NFPXN

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

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**



For reflection measurements with sample contact or with short focal distance for process applications.

EXAMPLE:

Gladius XP 12

Article no.
PG2BSSEJEASM240N

Gladius XP 25

Article no.
PG4BSSEJEASM240N

HEAVY DUTY

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



For reflection measurements. The optical design of these probes enables a large measuring spot to be focused on the sample over a distance of several centimeters.

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**



For Attenuated Total Reflection (ATR). For the direct measurement of highly absorbent liquids and pastes.

EXAMPLE:

Katana XP 12

Article no.
PK2KSSZUEASM240N

KATANA MEASURING CELL

Measuring principle: Attenuated Total Reflection (ATR)

LAB

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



ATR tunnel cells provide a high degree of analytical accuracy. They are ideal for the chemical analysis of liquids in the IR range.

EXAMPLE:

Measuring cell produced to meet customer requirements

TIDUS IMMERSION PROBES

Measuring principle: Raman

LAB

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



The Raman probes were developed for laboratory use. A big advantage of this series is the high flexibility due to exchangeable optics and filters.

EXAMPLE:

Measuring cell produced to meet customer requirements

XTREMELY PRECISE

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



The special design of the optical components of this category are optimized for a maximum Raman signal.

EXAMPLE:

Measuring cell produced to meet customer requirements

ESPADA IMMERSION PROBE

Measuring principle: Fluorescence

LAB

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



The Espada immersion probes of this category are ideally suited for fluorescence measurements in the laboratory. The optical material of all laboratory probes is quartz glass.

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:

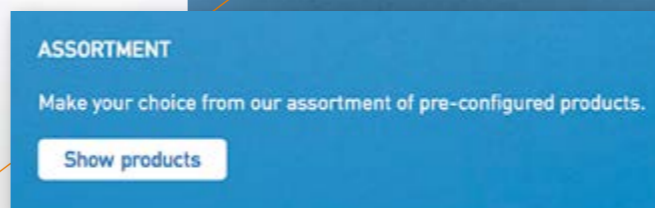
Search for products based on key parameters and operating conditions



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

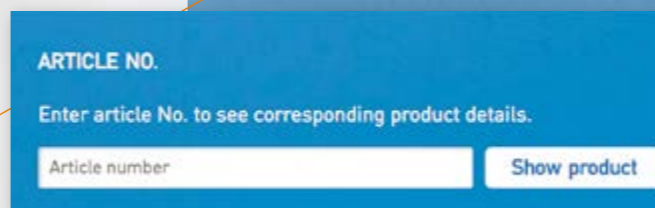
- SAMPLE MEDIUM
- MEASURING PRINCIPLE
- WAVELENGTH RANGE
- MEASUREMENT SITE
- MAXIMUM/MINIMUM PRESSURE
- LOWEST/HIGHEST TEMPERATURE
- ATEX SPECIFICATIONS

Search for products from the pre-configured range



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

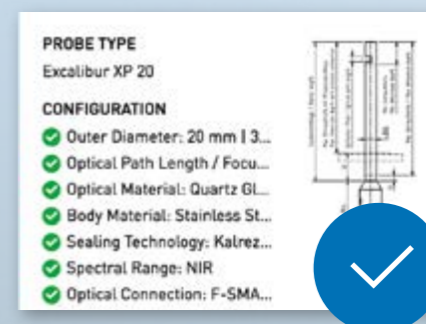


You can call up a specific pre-configured product directly by entering the article number, e.g. from a product you already have.

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.



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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