



Hellma[®]Analytics
High Precision in Spectro-Optics



Product Catalogue BestCellers 2013

OPTICAL COMPONENTS FOR UV/VIS/NIR SPECTROSCOPY

// CELLS

// TRAYCELL[®]
MICRO VOLUME ANALYSIS

// REFERENCE MATERIALS

// OPTICAL IMMERSION PROBES

// QUARTZ MICROPLATES





THE HELLMA *Group*

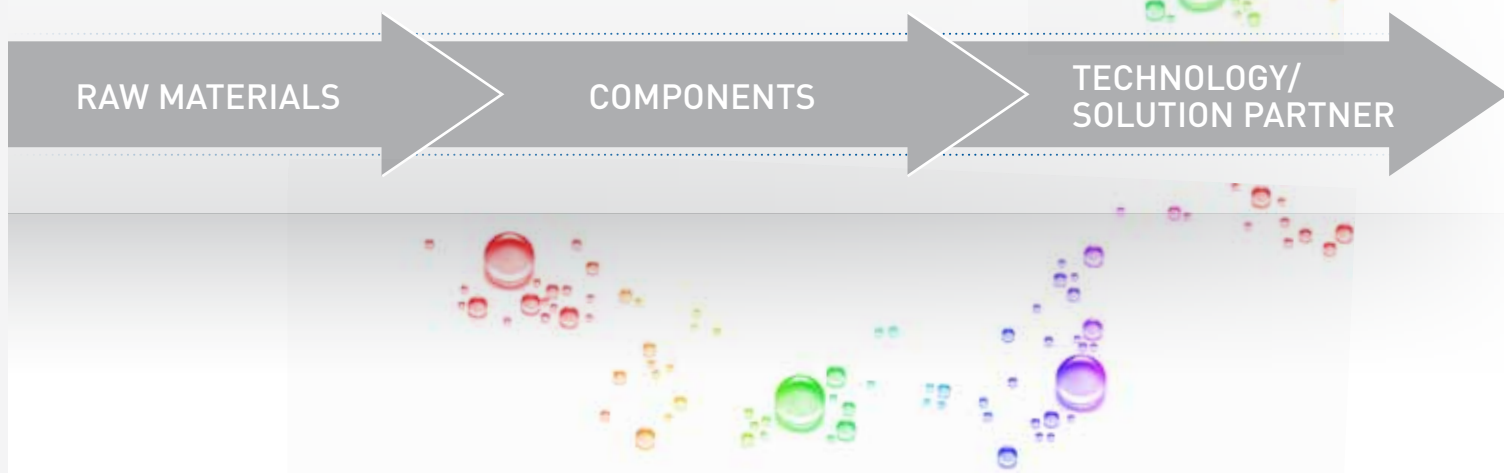
High-tech optical products made of glass, quartz glass and calcium fluoride – these serve as the essential key components in systems, instruments and machines, and therefore ensure the best possible results in highly diverse applications. Hellma has been developing unique products and solutions since 1922, and is the top choice worldwide for the most renowned manufacturers in industry, technology and research.



INTEGRATED RANGE – FROM RAW MATERIALS UP TO COMPLETE SOLUTIONS

Hellma is unique in the market with its integrated product and service range. For many years, industry has trusted in the company's unification of raw material production, component manufacture, technology and solution expertise. Awareness of its responsibilities ensures that the Hellma Group is a competent and reliable partner for their customers.

We take Responsibility[®].



Hellma[®]Materials

// CALCIUM FLUORIDE – RAW MATERIAL
// CALCIUM FLUORIDE FOR LITHOGRAPHY

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Hellma[®]Optics

// CYLINDRICAL OPTICS
// TORIC OPTICS
// FLAT OPTICS
// SPECIAL OPTICS
// OPTICAL GLASS

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Hellma[®]Analytics

// CELLS FOR SPECTROSCOPY AND CYTOMETRY
// REFERENCE MATERIALS FOR SPECTROSCOPY
// MICRO VOLUME ANALYSIS
// OPTICAL IMMERSION PROBES FOR LABORATORY USE AND PROCESS CONTROL

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CONTENT

Product Catalogue BestCellers 2013

CELLS

PAGE 6-21

// FOR ABSORPTION MEASUREMENTS

// FOR FLUORESCENCE MEASUREMENTS

// FOR SPECIAL APPLICATIONS

QUARTZ MICROPLATE

PAGE 22

TRAYCELL® FOR MICRO VOLUME ANALYSIS

PAGE 23

UV/VIS REFERENCE MATERIALS

PAGE 24-27

// GLASS FILTERS - CALIBRATION STANDARDS

// LIQUID FILTERS - CALIBRATION STANDARDS

// REFERENCE PLATES FOR MICROPLATE READER

ACCREDITED TO
DIN EN ISO 17025

OPTICAL IMMERSION PROBES

PAGE 28-31

CLEANING CONCENTRATE FOR CELLS AND OPTICAL PARTS

PAGE 32

PRODUCT RANGE HELLMA GROUP

PAGE 33

Product Catalogue BestCellers 2013

You will find our top BestCellers in this product catalogue. These are the products in our range which are available at short notice and which are most often put into use by our customers. Should you be unable to find a suitable product in this selection, then please contact us or search for the product of your choice on our website with the aid of the cuvette finder or the immersion probe configurator. We will gladly collaborate with you to develop individual and tailor-made solutions for your measurement tasks.

www.hellma-analytics.com/cuvettefinder
www.mypatprobe.com

HOW TO REACH US

Select your local
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Please check your order on completeness acc. to the following points:

- ✓ ARTICLE NUMBER
- ✓ NEEDED QUANTITY
- ✓ TRANSMISSION MATCHED YES/NO
- ✓ POLARIMETRIC CERTIFICATION YES/NO
- ✓ ANTIREFLECTION OR REFLECTIVE COATINGS, IF REQUIRED YES/NO

SPECTRAL AND POLARIMETRIC CHECKING

On request all cells can be spectrally calibrated and assembled into sets of equal transmission values (measuring uncertainty $\pm 1\%$). These cells are provided with a three digit calibration code number containing coded data about the material and the transmission at a wavelength typical for the cell material.

Some cells can be polarimetrically checked on request. They are marked with a »P« and are delivered together with a certificate confirming that the predetermined limit for the rotation angle of 0.01° is not exceeded.

SPECIAL DESIGNS

Within the scope of technical possibilities we will be pleased to make specially designed cells and immersion probes according to your needs and specifications. For price reasons we endeavor to use standard cells or probes as the basis for these whenever possible. If you are interested in special designs please

send us a technical drawing. Before manufacture commences, you will then receive a drawing from Hellma Analytics and once you acknowledge approval, this drawing will serve as an agreed specification for manufacture.

OPTICAL PATH LENGTH AND TOLERANCES

The optical path length is a particularly important parameter for some photometric applications.

Please note the following data for tolerances, shown in relation to optical path length and material of the cells:

MATERIAL	OPTICAL PATH LENGTH	TOLERANCE
Quartz	0.01 mm bis 0.05 mm	± 0.003 mm
Quartz	0.1 mm bis 0.2 mm	± 0.005 mm
Quartz	0.5 mm bis 20 mm	± 0.01 mm
Quartz	30 mm bis 100 mm	± 0.02 mm
Special Optical Glass	0.1 mm bis 20 mm	± 0.01 mm
Special Optical Glass	30 mm bis 100 mm	± 0.02 mm
Optical Glass	10 mm bis 30 mm	± 0.1 mm
Optical Glass	40 mm bis 100 mm	± 0.2 mm

These optical path length tolerances apply to absorption cells.
For fluorescence cells, both for the direction of excitation and emission the tolerance is ± 0.05 mm.

MATERIAL AND TRANSMISSION CURVES

Regarding the transmission curves, please note that the measurements were carried out on empty cells. The maximum transmission values (80 % – 90 %) are caused mainly by reflection losses at the four glass/air boundaries. As the losses by reflection depend solely on the refractive index, the reflection losses of the empty cells can be calculated for each wavelength. For example, at a wavelength of 588 nm we obtain the following values:

WINDOW MATERIAL	REFRACTIVE INDEX	REFLECTION LOSSES	TRANSMISSION	
			THEORETICAL	MEASURED
SUPRASIL®	1.458	13 %	87 %	87 % ± 1 %
HOQ 310H	1.458	13 %	87 %	87 % ± 1 %
Borofloat®	1.473	14 %	86 %	85 % ± 1 %
UK 5/B 270	1.523	16 %	84 %	84 % ± 1 %

The table shows that the measured transmission values within the measuring uncertainty accord with the theoretical values. From this it can be concluded that the absorption in the material at a window thickness of 1.25 mm can be disregarded.

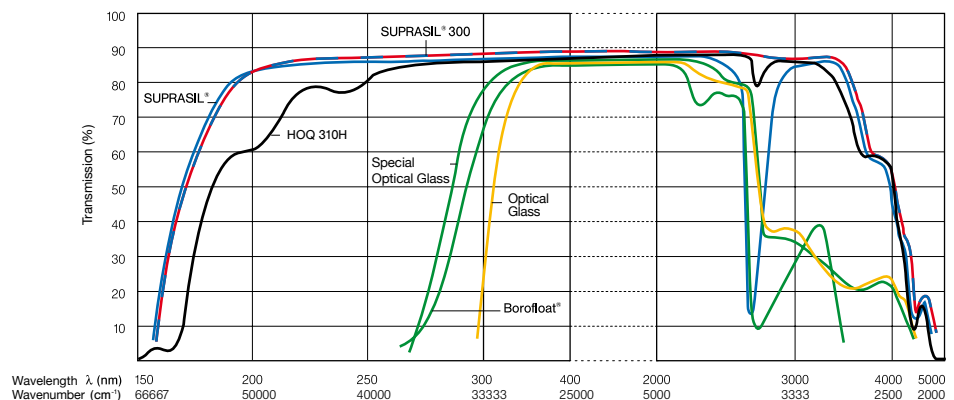
When comparing transmission data, it is absolutely essential that identical measuring conditions prevail. Should a measurement with a clean, empty cell yield significantly higher transmission values, it is likely that this is due to a measuring error.

MATERIAL	TRADEMARKS	WAVELENGTH
Optical glass	OG	360 nm–2500 nm
Borofloat®	BF	330 nm–2500 nm
Special optical glass	OS	320 nm–2500 nm
HOQ 310H	UV	260 nm–2500 nm
Quartz SUPRASIL®	QS	200 nm–2500 nm
Quartz SUPRASIL® 300	QX	200 nm–3500 nm

We can supply, on request, data sheets detailing the physical and chemical properties of the materials used.

SUPRASIL® is a registered trademark of Heraeus Quartz GmbH & Co. KG. DURAN® and Borofloat® are registered trademarks of Schott AG.

Transmission of empty cells made of different materials





ABSORPTION CELLS

MACRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
100-OS	1	45 x 12.5 x 3.5	9.5	1.5	350	100-1-20	glass lid glass lid
	2	45 x 12.5 x 4.5	9.5	1.5	700	100-2-20	
	5	45 x 12.5 x 7.5	9.5	1.5	1750	100-5-20	
	10	45 x 12.5 x 12.5	9.5	1.5	3500	100-10-20	
	20	45 x 12.5 x 22.5	9.5	1.5	7000	100-20-20	
	40	45 x 12.5 x 42.5	9.5	1.5	14000	100-40-20	
	50	45 x 12.5 x 52.5	9.5	1.5	17500	100-50-20	
	100	45 x 12.5 x 102.5	9.5	1.5	35000	100-100-20	
100-QS	1	45 x 12.5 x 3.5	9.5	1.5	350	100-1-40	glass lid glass lid
	2	45 x 12.5 x 4.5	9.5	1.5	700	100-2-40	
	5	45 x 12.5 x 7.5	9.5	1.5	1750	100-5-40	
	10	45 x 12.5 x 12.5	9.5	1.5	3500	100-10-40	
	20	45 x 12.5 x 22.5	9.5	1.5	7000	100-20-40	
	40	45 x 12.5 x 42.5	9.5	1.5	14000	100-40-40	
	50	45 x 12.5 x 52.5	9.5	1.5	17500	100-50-40	
	100	45 x 12.5 x 102.5	9.5	1.5	35000	100-100-40	
100-QX	1	45 x 12.5 x 3.5	9.5	1.5	350	100-1-46	glass lid glass lid
	2	45 x 12.5 x 4.5	9.5	1.5	700	100-2-46	
	5	45 x 12.5 x 7.5	9.5	1.5	1750	100-5-46	
	10	45 x 12.5 x 12.5	9.5	1.5	3500	100-10-46	
	20	45 x 12.5 x 22.5	9.5	1.5	7000	100-20-46	
	40	45 x 12.5 x 42.5	9.5	1.5	14000	100-40-46	
	50	45 x 12.5 x 52.5	9.5	1.5	17500	100-50-46	
	100	45 x 12.5 x 102.5	9.5	1.5	35000	100-100-46	
402.000-OG	10	40 x 23.6 x 15	18.5	2	4500	402-10-10	
	20	40 x 23.6 x 25	18.5	2	9000	402-20-10	
	50	40 x 23.6 x 55	18.5	2	22500	402-50-10	
110-OS	1	52 x 12.5 x 3.5	9.5	1.5	350	110-1-20	from 40 mm with 2 stoppers
	2	52 x 12.5 x 4.5	9.5	1.5	700	110-2-20	
	5	46 x 12.5 x 7.5	9.5	1.5	1750	110-5-20	
	10	46 x 12.5 x 12.5	9.5	1.5	3500	110-10-20	
	50	46 x 12.5 x 52.5	9.5	1.5	17500	110-50-20	
110-QS	1	52 x 12.5 x 3.5	9.5	1.5	350	110-1-40	from 40 mm with 2 stoppers
	2	52 x 12.5 x 4.5	9.5	1.5	700	110-2-40	
	5	46 x 12.5 x 7.5	9.5	1.5	1750	110-5-40	
	10	46 x 12.5 x 12.5	9.5	1.5	3500	110-10-40	
	20	46 x 12.5 x 22.5	9.5	1.5	7000	110-20-40	
	40	46 x 12.5 x 42.5	9.5	1.5	14000	110-40-40	
	50	46 x 12.5 x 52.5	9.5	1.5	17500	110-50-40	
	100	46 x 12.5 x 102.5	9.5	1.5	35000	110-100-40	
110-QX	1	52 x 12.5 x 3.5	9.5	1.5	350	110-1-46	
	2	52 x 12.5 x 4.5	9.5	1.5	700	110-2-46	
	5	46 x 12.5 x 7.5	9.5	1.5	1750	110-5-46	
	10	46 x 12.5 x 12.5	9.5	1.5	3500	110-10-46	
	20	46 x 12.5 x 22.5	9.5	1.5	7000	110-20-46	

WINDOW MATERIAL

- OG ■ Optical Glass
- OS ■ Special Optical Glass

360 nm–2500 nm
320 nm–2500 nm

- QS ■ Quartz SUPRASIL®
- QX ■ Quartz SUPRASIL® 300

200 nm–2500 nm
200 nm–3500 nm



MACRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
404.000-QX	1	47.5 x 23.6 x 3.5	18.5	2.5	700	404-1-46	with 2 stoppers
	2	47.5 x 23.6 x 4.5	18.5	2.5	1400	404-2-46	
	10	47.5 x 23.6 x 12.5	18.5	2.5	7000	404-10-46	
6030-OG	10	45 x 12.5 x 12.5	9.5	1.5	3500	6030-10-10	without lid
	20	45 x 12.5 x 22.5	9.5	1.5	7000	6030-20-10	
	40	45 x 12.5 x 42.5	9.5	1.5	14000	6030-40-10	
	50	45 x 12.5 x 52.5	9.5	1.5	17500	6030-50-10	
6030-UV	10 (± 0.05)	45 x 12.5 x 12.5	9.5	1.5	3500	6030-UV-10-531	without lid

SEMI-MICRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
6040-OG	10	45 x 12.5 x 12.5	4	3.2	1400	6040-10-10	without lid
6040-UV	10 (± 0.05)	45 x 12.5 x 12.5	4	3.2	1400	6040-UV-10-531	without lid
104-OS	10	45 x 12.5 x 12.5	4	3.2	1400	104-10-20	
	50	45 x 12.5 x 52.5	4	3.2	7000	104-50-20	
104-QS	5	45 x 12.5 x 7.5	4	3.2	700	104-5-40	
	10	45 x 12.5 x 12.5	4	3.2	1400	104-10-40	
	50	45 x 12.5 x 52.5	4	3.2	7000	104-50-40	
104-QX	10	45 x 12.5 x 12.5	4	3.2	1400	104-10-46	

WINDOW MATERIAL

■ **OG** Optical Glass
■ **OS** Special Optical Glass
■ **UV** H0Q310H

360 nm–2500 nm
 320 nm–2500 nm
 260 nm–2500 nm

■ **QS** Quartz SUPRASIL®
■ **QX** Quartz SUPRASIL® 300

200 nm–2500 nm
 200 nm–3500 nm



404.000
10 mm



6030
10 mm



6030-UV
10 mm



6040
10 mm



6040-UV
10 mm



104
10 mm



ABSORPTION CELLS

SEMI-MICRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
104B-OS	10	45 x 12.5 x 12.5	4	3.2	1400	104B-10-20	black side walls and base
104B-QS	10	45 x 12.5 x 12.5	4	3.2	1400	104-B-10-40	black side walls and base
108-OS	10	45 x 12.5 x 12.5	4	9	1000	108-000-10-20	
108-QS	10	45 x 12.5 x 12.5	4	9	1000	108-000-10-40	
108B-QS	10	45 x 12.5 x 12.5	4	9	1000	108B-10-40	black side walls and base
114-OS	10	46 x 12.5 x 12.5	4	3.2	1400	114-10-20	
114-QS	10	46 x 12.5 x 12.5	4	3.2	1400	114-10-40	
114B-QS	10	46 x 12.5 x 12.5	4	3.2	1400	114B-10-40	black side walls and base

MICRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
104.002-OS	10	45 x 12.5 x 12.5	2	3.2	700	104-002-10-20	
104.002-QS	10	45 x 12.5 x 12.5	2	3.2	700	104-002-10-40	
104.002B-OS	10	45 x 12.5 x 12.5	2	3.2	700	104002B-10-20	black side walls and base
104.002B-QS	10	45 x 12.5 x 12.5	2	3.2	700	104002B-10-40	black side walls and base
105-QS	10	25 x 12.5 x 12.5	2	1.5	300	105-10-40	
105B-QS	10	25 x 12.5 x 12.5	2	1.5	300	105-B-10-40	black side walls and base
108.002-QS	10	45 x 12.5 x 12.5	2	9	500	108-002-10-40	

WINDOW MATERIAL

■ OS ■ Special Optical Glass

320 nm–2500 nm

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm



104B
10 mm



108
10 mm



108B
10 mm



114
10 mm



114B
10 mm



104.002
10 mm



104.002B
10 mm



105
10 mm



105B
10 mm



108.002
10 mm

MICRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
108.002B-QS	10	45 x 12.5 x 12.5	2	9	500	108002B-10-40	black side walls and base
115-QS	10	40 x 12.5 x 12.5	2	1.25	400	115-10-40	
115B-QS	10	40 x 12.5 x 12.5	2	1.25	400	115B-10-40	black side walls and base

ULTRA-MICRO CELLS

with PE stopper or open with pipette tips

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x W x D mm	APERTURE H x W mm	CHAMBER VOL. µl	FILLING VOL. µl	ARTICLE-NO.
105.200-QS	10	15	45 x 12.5 x 12.5	8 x 2	160	180	105-200-15-40
	10	8.5	45 x 12.5 x 12.5	8 x 2	160	180	105-200-85-40
105.201-QS	10	15	45 x 12.5 x 12.5	5 x 2	100	120	105-201-15-40
	10	8.5	45 x 12.5 x 12.5	5 x 2	100	120	105-201-85-40
105.202-QS	10	15	45 x 12.5 x 12.5	2.5 x 2	50	70	105-202-15-40
	10	8.5	45 x 12.5 x 12.5	2.5 x 2	50	70	105-202-85-40
105.203-QS	10	15	45 x 12.5 x 12.5	∅ 2.5	50	70	105-203-1015-40
	10	8.5	45 x 12.5 x 12.5	∅ 2.5	50	70	105-203-1085-40
105.204-QS	10	15	45 x 12.5 x 12.5	∅ 1.5	20	40	105-204-1015-40
	10	8.5	45 x 12.5 x 12.5	∅ 1.5	20	40	105-204-1085-40
105.020-QS	10	4.5	8.1 x 12.6 x 12.6	6 x 2	120	130	105-020-40
105.025-QS	10	4.5	12 x 12.5 x 12.5	5 x 2	120	320	105-025-40
105.210-QS	5	15	40 x 12.5 x 12.5	∅ 0.8	2.5	5	105210-515-40
	5	8.5	40 x 12.5 x 12.5	∅ 0.8	2.5	5	105210-585-40
	10	15	40 x 12.5 x 12.5	∅ 0.8	5	10	1052101015-40
	10	8.5	40 x 12.5 x 12.5	∅ 0.8	5	10	1052101085-40
660.236-QS	10	4.5	12 x 74.5 x 12.5	2 x 6	120 (8 x)	120 (8 x)	660-236-40

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm





ABSORPTION CELLS

CELLS FOR MAGNETIC STIRRERS

macro, semi-micro, with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
109.000-QS	10	45 x 12.5 x 12.5	9.5	5	3500	109-000-10-40	
109.004-QS	10	45 x 12.5 x 12.5	4	5	1500	109-004-10-40	
119.000-QS	10	49.5 x 12.5 x 12.5	9.5	5	3500	119-10-40	
119.004-QS	10	49.5 x 12.5 x 12.5	4	5	1500	119-004-10-40	

SEALABLE CELLS

macro, semi-micro, for anaerobic applications

(with ISO thread GL 14 and screw cap with silicone rubber seal)

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
117.100-QS	10	56 x 12.5 x 12.5	9.5	1.5	3500	117-100-10-40	
117.104-QS	10	56 x 12.5 x 12.5	4	1.25	1400	117-104-10-40	

CELLS WITH TUBES

macro, tube Ø 8 mm, tube length 80 mm

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
220-QS	10	40 x 12.5 x 12.5	9.5	1.5	3500	220-10-40	Quartz DURAN® tube

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm



109.000
10 mm



109.004
10 mm



119.000
10 mm



119.004
10 mm



117.100
10 mm



117.104
10 mm



220
10 mm

CYLINDRICAL CELLS

macro, with PTFE stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE-DIAMETER mm	INSIDE-DIAMETER mm	OUTSIDE DEPTH mm	VOL. µl	ARTICLE-NO.	REMARKS
120-OS	10	22	19	12.5	2800	120-10-20	from 50 mm with 2 stoppers
	50	22	19	52.5	14000	120-50-20	
	100	22	19	102.5	28000	120-100-20	
120-QS	1	22	19	3.5	280	120-000-1-40	from 50 mm with 2 stoppers
	2	22	19	4.5	560	120-000-2-40	
	5	22	19	7.5	1400	120-5-40	
	10	22	19	12.5	2800	120-10-40	
	20	22	19	22.5	5600	120-20-40	
	50	22	19	52.5	14000	120-50-40	
	100	22	19	102.5	28000	120-100-40	
120-QX	10	22	19	12.5	2800	120-10-46	
121.000-QS	0.1	22	13	20	160	121-0.10-40	2 ports and stoppers
	0.2	22	13	20	170	121-0.20-40	
	0.5	22	13	20	210	121-0.50-40	
	1	22	13	20	280	121-1-40	

TEMPERATURE CONTROLLED CELLS

macro

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE-DIAMETER mm	INSIDE-DIAMETER mm	OUTSIDE DEPTH mm	VOL. µl	ARTICLE-NO.	REMARKS
165-QS	1	22	9	30	160	165-1-40	2 stoppers 1 port and stopper
	10	22	10	12.5	800	165-10-40	

CELL WITH TWO CHAMBERS

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
238-QS	2 x 4.375	46 x 12.5 x 12.5	9.5	1.5	2 x 1000	238-000-40	with 2 stoppers

WINDOW MATERIAL

■ OS ■ Special Optical Glass
■ QS ■ Quartz SUPRASIL®

320 nm–2500 nm
200 nm–2500 nm

■ QX ■ Quartz SUPRASIL® 300

200 nm–3500 nm



120
1 mm



120
10 mm



120
50 mm



121.000
1 mm



165
1 mm



165
10 mm



238
2 x 4.375 mm



ABSORPTION CELLS

CELLS FOR FLOW-THROUGH MEASUREMENTS

macro, with in/outlet tubes

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x W x D mm	APERTURE H x W mm	VOL. µl	ARTICLE-NO.	REMARKS
130-QS	10		45 x 12.5 x 12.5	33 x 9.5	3200	130-10-40	
137-QS	1		45 x 12.5 x 3.5	20 x 9	260	137-1-40	
	2		45 x 12.5 x 4.5	20 x 9	520	137-2-40	
	5		45 x 12.5 x 7.5	20 x 9	1300	137-5-40	
	10		45 x 12.5 x 12.5	20 x 9	2600	137-10-40	
170-OS	1	all dim.	35 x 12.5 x 12.5	17.5 x 6.5	120	170-000-1-20	
170-QS	1	all dim.	35 x 12.5 x 12.5	17.5 x 6.5	120	170-000-1-40	
	2		35 x 12.5 x 12.5	17.5 x 6.5	240	170-000-2-40	
175.000-OS	10	15	45 x 12.5 x 12.5	11 x 6.5	750	175-85-10-20	
	10	8.5	38.5 x 12.5 x 12.5	11 x 6.5	750	175-000-10-20	
175.000-QS	10	15	45 x 12.5 x 12.5	11 x 6.5	750	175-15-10-40	
	10	8.5	38.5 x 12.5 x 12.5	11 x 6.5	750	175-85-10-40	

COMPACT, WITH 2 SCREW CONNECTORS M 6 X 1 AND FEP TUBES

(outside Ø 1.9 mm, inside Ø 1.1 mm, 500 mm long)

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x W x D mm	APERTURE H x W mm	VOL. µl	ARTICLE-NO.	REMARKS
170.700-QS	0.1	all dim.	35 x 12.5 x 12.5	17.5 x 3.5	6.2	170700-0.1-40	up to 0.5 mm with bypass
	0.2		35 x 12.5 x 12.5	17.5 x 3.5	12.4	170700-0.2-40	
	0.5		35 x 12.5 x 12.5	17.5 x 3.5	31	170700-0.5-40	
	1		35 x 12.5 x 12.5	17.5 x 3.5	62	170-700-1-40	
	2		35 x 12.5 x 12.5	17.5 x 3.5	124	170-700-2-40	

SEMI-MICRO, WITH IN/OUTLET TUBES

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x W x D mm	APERTURE H x W mm	VOL. µl	ARTICLE-NO.	REMARKS
174-QS	10		48 x 12.5 x 12.5	36 x 4	1500	174-10-40	
176.000-QS	10	15	45 x 12.5 x 12.5	11 x 4	450	176-15-10-40	
	10	8.5	38.5 x 12.5 x 12.5	11 x 4	450	176-85-10-40	
	50	15	45 x 12.5 x 52.5	11 x 4	2250	176-50-40	
	50	8.5	38.5 x 12.5 x 52.5	11 x 4	2250	176-50-85-40	

WINDOW MATERIAL

■ OS ■ Special Optical Glass

320 nm–2500 nm

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm

Subject to change without notice.



130
10 mm



137
10 mm



170
1 mm



175.000
10 mm



170.700
1 mm



174
10 mm



176.000
10 mm

CELLS FOR FLOW-THROUGH MEASUREMENTS

compact, with 2 screw connectors M 6 x 1 and FEP tubes

(outside Ø 1.9 mm, inside Ø 1.1 mm, 500 mm long)

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x W x D mm	APERTURE H x W mm	VOL. µl	ARTICLE-NO.	REMARKS
176.700-QS	5	15	35 x 12.5 x 12.5	11 x 3.5	195	1767005-15-40	
	5	8.5	35 x 12.5 x 12.5	11 x 3.5	195	1767005-85-40	
	10	15	35 x 12.5 x 12.5	11 x 3.5	390	1767001510-40	
	10	8.5	35 x 12.5 x 12.5	11 x 3.5	390	1767008510-40	
	50	15	35 x 12.5 x 52.5	11 x 3.5	1950	1767001550-40	
	50	8.5	35 x 12.5 x 52.5	11 x 3.5	1950	1767008550-40	
176.703-QS	10	15	35 x 12.5 x 12.5	8 x 2	160	176703-215-40	
	10	8.5	35 x 12.5 x 12.5	8 x 2	160	176703-10-85-4	

micro, ultra-micro, with in/outlet tubes

178.010-OS	10	15	45 x 12.5 x 12.5	Ø 3	80	1780101015-20	optical path length 50 mm on request
	10	8.5	38.5 x 12.5 x 12.5	Ø 3	80	178010-85-20	
178.010-QS	10	15	45 x 12.5 x 12.5	Ø 3	80	1780101015-40	
	10	8.5	38.5 x 12.5 x 12.5	Ø 3	80	178-010-10-40	
	50	15	45 x 12.5 x 52.5	Ø 3	370	178-010-50-40	
	50	8.5	38.5 x 12.5 x 52.5	Ø 3	370	178010-50-85-40	
178.011-OS	10	15	45 x 12.5 x 12.5	Ø 2	30	178011-15-20	
	10	8.5	38.5 x 12.5 x 12.5	Ø 2	30	178011-85-20	

compact, with 2 screw connectors M 6 x 1 and FEP tubes

(outside Ø 1.9 mm, inside Ø 1.1 mm, 500 mm long)

178.710-OS	10	15	35 x 12.5 x 12.5	Ø 3	80	178-710-20	
	10	8.5	35 x 12.5 x 12.5	Ø 3	80	178-710-10-20	
178.710-QS	10	15	35 x 12.5 x 12.5	Ø 3	80	178-710-10-40	
	10	8.5	35 x 12.5 x 12.5	Ø 3	80	1787108510-40	
	50	15	35 x 12.5 x 52.5	Ø 3	370	1787101550-40	
	50	8.5	35 x 12.5 x 52.5	Ø 3	370	178-710-50-40	
178.711-OS	10	15	35 x 12.5 x 12.5	Ø 2	30	178-711-10-20	
	10	8.5	35 x 12.5 x 12.5	Ø 2	30	1787118510-20	
178.712-OS	10	8.5	35 x 12.5 x 12.5	Ø 1.5	18	178712-10-20	
178.712-QS	10	15	35 x 12.5 x 12.5	Ø 1.5	18	1787121510-40	
	10	8.5	35 x 12.5 x 12.5	Ø 1.5	18	1787128510-40	

WINDOW MATERIAL

■ OS ■ Special Optical Glass

320 nm–2500 nm

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm

Subject to change without notice.





FLUORESCENCE CELLS

MACRO CELLS

with PTFE lid or stopper, triangular cell

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	NO. OF WINDOWS	ARTICLE-NO.	REMARKS
101-OS	10 x 10	45 x 12.5 x 12.5	10	1.25	3500	4	101-10-20	on request with a polished base
101-QS	10 x 10 10 x 20	45 x 12.5 x 12.5 45 x 12.5 x 22.5	10	1.25 1.25	3500 7000	4 4	101-10-40 101-20-40	on request with a polished base
111-OS	10 x 10	46 x 12.5 x 12.5	10	1.25	3500	4	111-10-20	on request with a polished base
111-QS	10 x 10	46 x 12.5 x 12.5	10	1.25	3500	4	111-10-40	on request with a polished base
111.061-QS		46 x 12.4 x 12.4	10	1.25	1750	3	111-061-40	on request with a polished base

SEMI-MICRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
104F-OS	10 x 4	45 x 12.5 x 12.5	4	1.25	1400	104F-10-20	on request with a polished base
104F-QS	10 x 4	45 x 12.5 x 12.5	4	1.25	1400	104F-10-40	on request with a polished base
108F-QS	10 x 4	45 x 12.5 x 12.5	4	9	1000	108-F-10-40	on request with a polished base
114F-QS	10 x 4	46 x 12.5 x 12.5	4	1.25	1400	114F-10-40	on request with a polished base

MICRO CELLS

with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. µl	ARTICLE-NO.	REMARKS
104.002F-QS	10 x 2	45 x 12.5 x 12.5	2	1.25	700	104002F-10-40	on request with a polished base
108.002F-QS	10 x 2	45 x 12.5 x 12.5	2	9	500	108002F-10-40	on request with a polished base
115F-QS	10 x 2	40 x 12.5 x 12.5	2	1.25	400	115-F-10-40	on request with a polished base

WINDOW MATERIAL

OS ■ Special Optical Glass

320 nm–2500 nm

QS ■ Quartz SUPRASIL®

200 nm–2500 nm



101
10x10mm



111
10x10mm



111.061



104F
10x4mm



108F
10x4mm



114F
10x4mm



104.002F
10x2mm



108.002F
10x2mm



115F
10x2mm

MICRO CELLS

with and without PTFE stopper

TYPE/ WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x B x D mm	INSIDE DIM. H x B x D mm	BASE- PATH mm	VOL. µl	NO. OF WINDOWS	ARTICLE-NO.	REMARKS
101.015-QS	3 x 3		21 x 5.4 x 5.4	19.9 x 3 x 3	1.1	130	5	101-015-40	
013.013		15 8.5	50.5 x 12.5 x 12.5 44 x 12.5 x 12.5					013-013-15-71 013-013-85-71	holder for cell type 101.015
101.016-QS	5 x 5		33.5 x 6.9 x 6.9	32.7 x 5 x 5	0.8	600	5	101-016-40	
013.016			44 x 12.5 x 12.5					013-016-71	holder for cell type 101.016
101.057-QS	5 x 5		45 x 7.5 x 7.5	43.75 x 5 x 5	1.25	850	5	101-057-40	
111.057-QS	5 x 5		46 x 7.5 x 7.5	38.75 x 5 x 5	1.25	850	5	111-057-40	
013.011			44 x 12.5 x 12.5					013-011-71	holder for cell type 111.057 and 101.057

ULTRA-MICRO CELLS

with PE stopper

TYPE/ WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H x B x D mm	APERTURE H x D mm	CAMBER VOLUME µl	FILLING VOLUME µl	NO. OF WINDOWS	ARTICLE-NO.
105.250-QS	10 x 2 10 x 2	15 8.5	45 x 12.5 x 12.5 45 x 12.5 x 12.5	5 x 2 5 x 2	100 100	120 120	3 3	105-250-15-40 105-250-85-40
105.251-QS	3 x 3 3 x 3	15 8.5	45 x 12.5 x 12.5 45 x 12.5 x 12.5	5 x 3 5 x 3	45 45	70 70	3 3	105-251-15-40 105-251-85-40
105.252-QS	1.5 x 1.5 1.5 x 1.5	15 8.5	45 x 12.5 x 12.5 45 x 12.5 x 12.5	5 x 1.5 5 x 1.5	12 12	30 30	3 3	105-252-15-40 105-252-85-40
105.253-QS	10 x 2 10 x 2	15 8.5	45 x 12.5 x 12.5 45 x 12.5 x 12.5	5 x 2 5 x 2	100 100	120 120	3 3	105-253-15-40 105-253-85-40
105.254-QS	3 x 3 3 x 3	15 8.5	45 x 12.5 x 12.5 45 x 12.5 x 12.5	5 x 3 5 x 3	45 45	70 70	3 3	105-254-15-40 105-254-85-40

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm



101.015
3 x 3 mm

101.016
5 x 5 mm

101.057
5 x 5 mm

111.057
5 x 5 mm

013.011
013.013
013.016

105.250
10 x 2 mm

105.251
3 x 3 mm

105.252
1.5 x 1.5 mm

105.253
10 x 2 mm

105.254
3 x 3 mm



FLUORESCENCE CELLS

FLUORESCENCE CELLS FOR MAGNETIC STIRRERS

macro, semi-micro, with PTFE lid or stopper

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. μ l	NO. OF WINDOWS	ARTICLE-NO.
109.000F-QS	10 x 10	45 x 12.5 x 12.5	10	5	3500	4	109000F-10-40
119.000F-QS	10 x 10	49.5 x 12.5 x 12.5	10	5	3500	4	119F-10-40
109.004F-QS	10 x 4	45 x 12.5 x 12.5	4	5	1500	4	109004F-10-40
119.004F-QS	10 x 4	49.5 x 12.5 x 12.5	4	5	1500	4	119004F-10-40

SEALABLE CELLS

macro, semi-micro, for anaerobic applications

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. μ l	NO. OF WINDOWS	ARTICLE-NO.
117.100F-QS	10 x 10	56 x 12.5 x 12.5	10	1.25	3500	4	117100F-10-40
117.104F-QS	10 x 4	56 x 12.5 x 12.5	4	1.25	1400	4	117104F-10-40

With ISO thread GL 14 and screw cap with silicone rubber seal.

CELLS WITH TUBES QUARTZ/DURAN®

macro, tube \varnothing 8 mm, tube length 80 mm

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	BASE THICKN. mm	VOL. μ l	NO. OF WINDOWS	ARTICLE-NO.
221-QS*	10 x 10	40 x 12.5 x 12.5	10	1.25	3500	4	221-10-40
221.001-QS**	10 x 10 Tol.+/- 0.2	40 x 12.5 x 12.5	10	1.25	3500	4	221001-10-80

* on request with a polished base

** for measurements at high and low temperatures

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL® 200 nm–2500 nm



109.000F
10 x 10 mm



119.000F
10 x 10 mm



109.004F
10 x 4 mm



119.004F
10 x 4 mm



117.100F
10 x 10 mm



117.104F
10 x 4 mm



221
10 x 10 mm



221.001
10 x 10 mm

CELLS FOR FLOW-THROUGH MEASUREMENTS

macro, with in/outlet tubes

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H × W × D mm	APERTURE H × W mm	VOL. μl	NO. OF WINDOWS	ARTICLE-NO.	REMARKS
131-QS	10 x 10	45 x 12.5 x 12.5	33 x 10	3300	4	131-10-40	base and lid 6 mm

semi-micro, with in/outlet tubes

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H × W × D mm	APERTURE H × W mm	VOL. μl	NO. OF WINDOWS	ARTICLE-NO.
176.050-QS	10 x 4 10 x 4	15 8.5	45 x 12.5 x 12.5 38.5 x 12.5 x 12.5	11 x 4 11 x 4	450 450	3 3	176-050-40 176050-10-85-40

compact, with 2 screw connectors M 6 x 1 and FEP tubes

(outside Ø 1.9 mm, inside Ø 1.1 mm, 500 mm long)

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm	OUTSIDE DIM. H × W × D mm	APERTURE H × W mm	VOL. μl	NO. OF WINDOWS	ARTICLE-NO.
176.751-QS	3 x 3 3 x 3	15 8.5	35 x 12.5 x 12.5 35 x 12.5 x 12.5	11 x 3 11 x 3	100 100	3 3	176-751-15-40 176-751-85-40
176.754-QS	10 x 2.5 10 x 2.5	15 8.5	35 x 12.5 x 12.5 35 x 12.5 x 12.5	11 x 2.5 11 x 2.5	275 275	4 4	176-754-10-15-40 176-754-10-85-40

DYE-LASER CELL

macro, with PTFE stoppers

TYPE/WINDOW MATERIAL	OUTSIDE DIM. H × W × D mm	INSIDE CROSS SECTION mm	VOL. μl	NO. OF WINDOWS	ARTICLE-NO.	REMARKS
111.070-QS	46 x 12.5 x 12.5	10 x 10	3500	4	111-070-40	on request with a polished base

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL® 200 nm–2500 nm

Subject to change without notice.



131
10 x 10 mm



176.050
10 x 4 mm



176.751
3 x 3 mm



176.754
10 x 2,5 mm



111.070
10 x 10 mm



CELLS AND OPTICAL ELEMENTS FOR SPECIAL APPLICATIONS

CELL FOR CYTOMETRY

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE CROSS SECTION mm	VOL. µl	ARTICLE-NO.	REMARKS
131.050-QS	0.25 x 0.25	20.3 x 4.2 x 4.2	0.25 x 0.25	1.3	131-050-40	flow channel surfaces polished

CELLS FOR LIGHT-SCATTERING MEASUREMENTS

with PTFE stoppers

TYPE/WINDOW MATERIAL	OUTSIDE DIM. H x DIAMETER mm	INSIDE DIM. H x DIAMETER mm	VOL. µl	ARTICLE-NO.	REMARKS
540.110-QS	75 x 10	74 x 8	2800	540-110-80	
540.111-QS	75 x 10	74 x 8	2800	540-111-80	polished outer cylinder
540.114-QS	75 x 25	73 x 22.6	22000	540-114-80	
540.115-QS	75 x 25	73 x 22.6	22000	540-115-80	polished outer cylinder
540.135-QS	75 x 20	74 x 18	14000	540-135-20-40	

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm



CELL FOR TURBIDITY MEASUREMENTS

rectangular cell

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE DIM. H x W x D mm	VOL. µl	ARTICLE-NO.	REMARKS
402.013-OG	25 x 25	70 x 30 x 30	67 x 25 x 25	25000	402-013-10	25 ml marking, 5 windows

CELLS FOR REFLECTION MEASUREMENTS

cylindrical cells, without lids

TYPE/WINDOW MATERIAL	OUTSIDE DIM. H x DIAMETER mm	INSIDE DIM. H x DIAMETER mm	VOL. µl	ARTICLE-NO.	REMARKS
692.091-OG	25 x 34	23 x 31.6	12000	692-091-12	
692.103-BF	30 x 50	27.5 x 45	32000	692-103-23	
692.104-BF	40.5 x 60	39 x 55.6	73000	692-104-23	

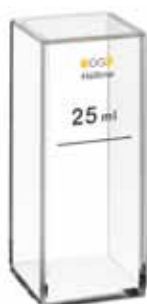
WINDOW MATERIAL

■ OG ■ Optical Glass

360 nm–2500 nm

■ BF ■ Borofloat®

330 nm–2500 nm



402.013



692.091



692.103



692.104



CELLS AND OPTICAL ELEMENTS FOR SPECIAL APPLICATIONS

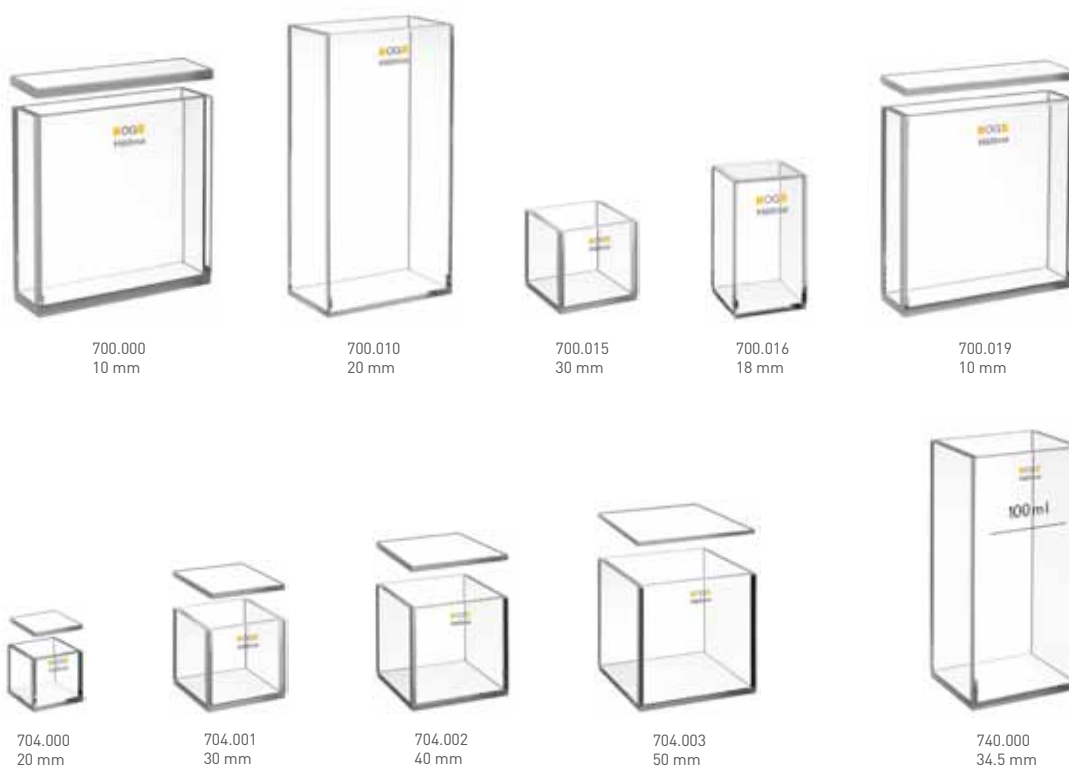
LARGE CELLS

with glass lids

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	INSIDE WIDTH mm	VOL. μ l	ARTICLE-NO.	REMARKS
700.000-OG	10 \pm 0.2	53 x 55 x 15	50 x 50 x 10	20000	700-000-10-10	
	20 \pm 0.2	53 x 55 x 25	50 x 50 x 20	40000	700-000-20-10	
700.010-OG	20 \pm 0.2	82 x 44.4 x 24.4	80 x 40 x 20	56000	700-010-20-10	without lid
700.015-OG	28 \pm 0.2	35 x 35 x 32	33 x 31 x 28	22000	700-015-10	without lid
700.016-OG	18 \pm 0.2	38 x 22 x 22	36 x 18 x 18	10000	700-016-10	without lid
700.019-OG	10 \pm 0.2	55 x 55 x 15	52.5 x 50 x 10	20000	700-019-10	
704.000-OG	20 \pm 0.2	22.5 x 25 x 25	20 x 20 x 20	6000	704-000-20-10	
704.001-OG	30 \pm 0.2	32.5 x 35 x 35	30 x 30 x 30	22500	704-001-30-10	
704.002-OG	40 \pm 0.2	42.5 x 45 x 45	40 x 40 x 40	56000	704-002-40-10	
704.003-OG	50 \pm 0.5	52.5 x 55 x 55	50 x 50 x 50	88000	704-003-50-10	
740.000-OG	34.5 \pm 0.2	100 x 50 x 39.5	97 x 44 x 34.5	100000	740-000-10	without lid

WINDOW MATERIAL

OG Optical Glass 360 nm–2500 nm



DEMOUNTABLE CELLS

cells with detachable windows

TYPE/WINDOW MATERIAL	OPTICAL PATH LENGTH mm	OUTSIDE DIM. H x W x D mm	PATH mm	INSIDE WIDTH mm	VOL. µl	ARTICLE-NO.	REMARKS
106-QS	0.01 ± 0.003	45 x 12.5	2.5	9	2.6	106-0.01-40	
	0.1 ± 0.005	45 x 12.5	2.6	9	26	106-0.10-40	
	0.2 ± 0.005	45 x 12.5	2.7	9	52	106-0.20-40	
	0.5 ± 0.010	45 x 12.5	3	9	130	106-0.50-40	
013.000		45 x 12.5 x 12.5				013-000-71	holder for cells with detachable windows, for cell type 106
124-QS	0.1 ± 0.005	∅ 22	2.6	∅ 15	18	124-0.1-40	
020.001	0.01 - 1					020-001-761	for cell type 124 and 201

FLAT OPTICS

TYPE/WINDOW MATERIAL	THICKNESS mm	OUTSIDE-DIAMETER mm	DIMENSION H x B mm	ARTICLE-NO.	REMARKS
201	1 ± 0.01	∅ 21		201-1-23	for Spring clamp 020.001
201	2.5 ± 0.01	∅ 21		201-2.5-23	for Spring clamp 020.001
202-QS	1.25	∅ 22		202-40	
202-QX	1.25	∅ 22		202-46	
020.001	0.01 - 1			020-001-761	for cell type 124 + 201/202
020.002	2 - 2.5			020-002-761	for cell type 201/202
665.000-QS	1.25		45 x 12.5	665-000-40	
665.000-QX	1.25		45 x 12.5	665-000-46	

OTHER ACCESSORIES

TYPE/WINDOW MATERIAL	DESCRIPTION	ARTICLE-NO.	REMARKS
013.101	Aluminium spacer 38 x 12.5 x 9 mm	013-101-71	to fit cells with 1 mm optical path length into 10 mm cell holder
013.102	Aluminium spacer 38 x 12.5 x 8 mm	013-102-71	to fit cells with 2 mm optical path length into 10 mm cell holder
013.105	Aluminium spacer 38 x 12.5 x 5 mm	013-105-71	to fit cells with 5 mm optical path length into 10 mm cell holder

WINDOW MATERIAL

■ QS ■ Quartz SUPRASIL®

200 nm–2500 nm

■ QX ■ Quartz SUPRASIL® 300

200 nm–3500 nm



106 013.000



020.001 124-QS



020.002 201 Duran 202



665.000 013.101 013.102 013.105



QUARTZ MICROPLATES

QUARTZ MICROPLATES

TYPE/WINDOW MATERIAL	DESCRIPTION	OUTSIDE DIM. H x B x L mm	BASE mm	WELLS			ARTICLE-NO.
				DIAMETER mm	DEPTH mm	VOLUME µl	
730.009-QG	Quartz Microplate** with 96 wells Base: Synthetic Quartz Glass	14.5 x 127 x 85.5	2*	6.6	12.5	300	730-009-44
730.009B-QG	Black Quartz Microplate** with 96 wells Base: Synthetic Quartz Glass	14.5 x 127 x 85.5	2*	6.6	12.5	300	730009-B-44

QG is synthetic quartz glass with a transmission over 80% between 200 nm and 2500 nm for an empty cell.

* On request base with reduced thickness down to 0.5 mm.

** Available made of Borofloat® on request.



730.009-QG



730.009B-QG

MICRO VOLUME ANALYSIS

Fibre-Optic Ultra-Micro Measuring Cell for Sample Volumes of 0.5 µl – 10 µl



TYPICAL APPLICATIONS ARE:

- » Nucleic acid analysis
- » Determination of the incorporation frequency of fluorescent dye labels (FOI)
- » Protein analysis (A280, BCA, Lowry etc.)
- » All UV/Vis analysis utilizing the wavelength range of 190 – 1100 nm

TYPE	WINDOW MATERIAL	OPTICAL PATH LENGTH mm	CENTER HEIGHT mm*	EXTERNAL HEIGHT mm*	VOL. µl	ARTICLE-NO.
105.800-UVS	Quartz SUPRASIL®	0.2 (±0.02) (Factor 50)	8.5	68.5	0.7 – 4	105800-A3-V1-46
			15	75		
			20	80		
105.810-UVS	Quartz SUPRASIL®	0.2 (±0.02) (Factor 50)	8.5	53.0	0.7 – 4	105810-A3-V1-46
			15	59.5		
			20	64.5		
105.800-UVS	Quartz SUPRASIL®	1 (±0.02) (Factor 10)	8.5	68.5	3 – 5	105800-A3-V1-46
			15	75		
			20	80		
105.810-UVS	Quartz SUPRASIL®	1 (±0.02) (Factor 10)	8.5	53.0	3 – 5	105810-A3-V1-46
			15	59.5		
			20	64.5		



105.800-UVS



105.810-UVS

Width and depth of the TrayCell are equivalent to a standard cell. It is supplied as standard with caps for both 0.2 mm and 1 mm optical path length and adapters for 8.5 mm, 15 mm and 20 mm center height.

* Please state the center height you require so that we can adjust the TrayCell to fit your photometer. Please check which external height you require. If you are uncertain, please tell us the make and model of your instrument and we will then recommend the suitable TrayCell.

CAPS FOR TRAYCELL

Available individually – flexible selection of the optical path length

TYPE	MATERIAL	OPTICAL PATH LENGTH mm	ARTICLE-NO.	REMARK
665.703	Cap with mirror made of Quartz SUPRASIL® with aluminium mirror layer	1 (Factor 10) 3 – 5 µl	665-703-1-40	for 105.800-UVS and 105.810-UVS
665.704	Cap with mirror made of Quartz SUPRASIL® with aluminium mirror layer	0.2 (Factor 50) 0.7 – 4 µl	665-704-0.2-40	
665.705	Cap with mirror made of Quartz SUPRASIL® with aluminium mirror layer	2 (Factor 5) 6 – 10 µl	665-705-2-40	
665.706	Cap with mirror made of Quartz SUPRASIL® with aluminium mirror layer	0.1 (Factor 100) 0.5 – 3 µl	665-706-0.1-40	



665.703



665.704



665.705



665.706

Additional optical path lengths on request in special manufacture.
For detailed information please visit www.hellma-analytics.com/traycell



UV/VIS CERTIFIED REFERENCE MATERIALS CALIBRATION STANDARDS

With certified reference materials from Hellma Analytics you ensure that your equipment qualifications fulfill the Pharmacopoeia's specifications and that you meet your internal quality standards ideally – at the same time, you achieve the international comparability of measurement results. The certified reference materials

(calibration standards) from the Hellma Analytics' Calibration Laboratory (accredited according to DIN EN ISO 17025) are traceable to primary references of NIST (National Institute of Standards and Technology) and are in accordance with the most important Pharmacopoeias (EP, DAB, USP).



DIN EN ISO 17025



GLASS FILTERS WITH DAKKS CALIBRATION CERTIFICATE

Filter Set for Spectrophotometer

TYPE	USAGE	CONSISTING OF	MATERIAL	WAVELENGTH nm	ARTICLE-NO.
666.000	Checking the wavelength and photometric accuracy	666-F1 666-F2 666-F3 666-F4 666-F0	Holmium Oxide Glass Filter Neutral Density Glass Filter NG 11 Neutral Density Glass Filter NG 5 Neutral Density Glass Filter NG 4 Empty Filter Mount	279; 361; 453; 536; 638; 440 465; 546.1; 590; 635; 440 465; 546.1; 590; 635 440; 465; 546.1; 590; 635	666-000

Single Filter

TYPE	USAGE	MATERIAL	WAVELENGTH nm	ARTICLE-NO.
666-F0	Empty Filter Mount			666-F0-71
666-F1	To check the wavelength accuracy	Holmium Oxide Glass Filter	279; 361; 453; 536; 638	666-000F1-339
666-F2	To check the photometric accuracy (nominal absorbance 0.25)	Neutral Density Glass Filter NG 11	440; 465; 546.1; 590; 635	666-000F2-39
666-F201	To check the photometric accuracy (nominal absorbance 0.3)	Neutral Density Glass Filter NG 11	440; 465; 546.1; 590; 635	666-F201-39
666-F3	To check the photometric accuracy (nominal absorbance 0.5)	Neutral Density Glass Filter NG 5	440; 465; 546.1; 590; 635	666-000F3-38
666-F4	To check the photometric accuracy (nominal absorbance 1.0)	Neutral Density Glass Filter NG 4	440; 465; 546.1; 590; 635	666-000F4-37
666-F202	To check the photometric accuracy (nominal absorbance 1.5)	Neutral Density Glass Filter NG 3	440; 465; 546.1; 590; 635	666-000F202-36
666-F203	To check the photometric accuracy (nominal absorbance 2.0)	Neutral Density Glass Filter NG 4	440; 465; 546.1; 590; 635	666-000F203-36
666-F7	To check the photometric accuracy To check the wavelength accuracy	Didymium Glass Filter BG 36	270; 280; 297; 320; 340 329; 472; 512; 681; 875	666-000F7-323

Outside dimensions: H x W x D: 48 mm x 12.5 mm x 12.5 mm



LIQUID FILTERS WITH DAKKS CALIBRATION CERTIFICATE

Filter Sets for spectrophotometer

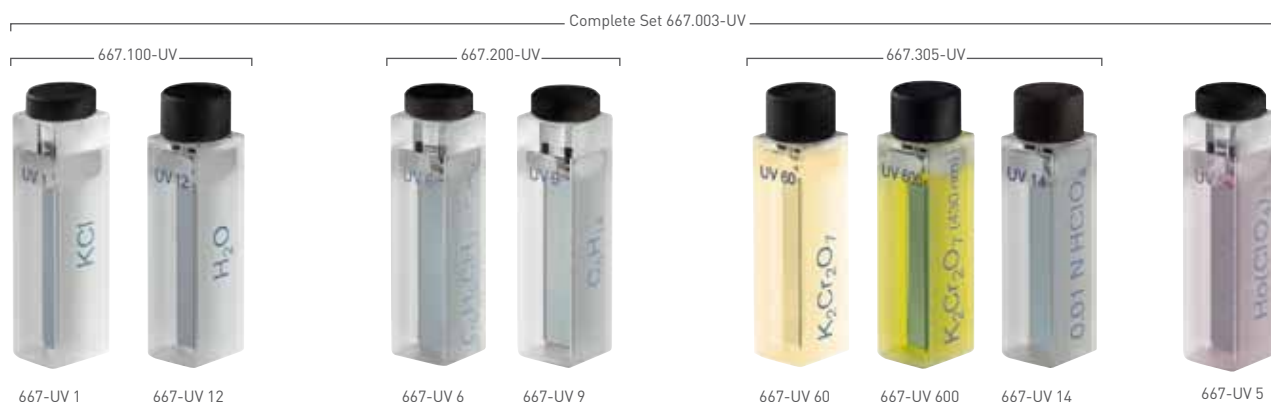
TYPE	USAGE	CONSISTING OF	CONTENT	WAVELENGTH nm	ARTICLE-NO.
667.003-UV	Checking the photometer according to Ph. Eur	667.100-UV 667.200-UV 667.305-UV 667-UV5	Potassium Chloride + blank Toluene in Hexane + blank Potassium Dichromate in HClO ₄ + blank Holmium Perchlorate in Perchloric Acid	200 (cut-off) 265–270 235; 257; 313; 350; 430 241; 287; 361; 536; 640	667-003-UV-40

TYPE	USAGE	CONSISTING OF	CONTENT	WAVELENGTH nm	ARTICLE-NO.
667.100-UV	Set to check for stray light according to Ph. Eur	667-UV1 667-UV12	Potassium Chloride Ultrapure Water (blank)	200 (Cut-Off) 198; 200 (certified)	667-100-UV-40
667.200-UV	Set to check spectral resolution according to Ph. Eur.	667-UV6 667-UV9	Toluene in n-Hexane n-Hexane (blank)	265 – 270	667-200-UV-40
667.305-UV	Set to check photometric accuracy according to Ph. Eur	667-UV60 667-UV600 667-UV14	60 mg Potassium Dichromate in HClO ₄ 600 mg Potassium Dichromate in HClO ₄ Perchloric Acid (blank)	235; 257; 313; 350 430	667-305-UV-40
667-UV5	Filter to check the wavelength accuracy according to Ph. Eur	667-UV5	Holmium Perchlorate in Perchloric Acid	241; 287; 361; 536; 640	667-005-UV-40
667.101-UV	Set to check for stray light	667-UV10 667-UV12	Sodium Iodide Ultrapure Water (blank)	259 (Cut-Off) 220 (certified)	667-101-UV-40
667.102-UV	Set to check for stray light	667-UV11 667-UV12	Sodium Nitrite Ultrapure Water (blank)	385 (Cut-Off) 340; 370 (certified)	667-102-UV-40
667.400-UV	Set to check the wavelength accuracy	667-UV5 667-UV14	Holmium Perchlorate in Perchloric Acid Perchloric Acid (blank)	241; 287; 361; 536; 640	667-400-UV-40
667.301-UV	Set to check photometric accuracy	667-UV60 667-UV14	60 mg Potassium Dichromate in HClO ₄ Perchloric Acid (blank)	235; 257; 313; 350	667-301-UV-40
667.307-UV	Set to check the linearity of absorption	667-UV20 667-UV40 667-UV60 667-UV80 667-UV100 667-UV14	20 mg Potassium Dichromate in HClO ₄ * 40 mg Potassium Dichromate in HClO ₄ * 60 mg Potassium Dichromate in HClO ₄ * 80 mg Potassium Dichromate in HClO ₄ * 100 mg Potassium Dichromate in HClO ₄ * Perchloric Acid (blank)	235; 257; 313; 350	667-307-UV-40

Outside Dim. H x w x d: 48 mm x 12.5 mm x 12.5 mm

* in Perchloric Acid

All liquid filters are available individually





RECOMMENDATION FOR RECERTIFYING REFERENCE MATERIALS

Recommendation for recertifying reference materials. Like any measuring device, reference materials that are being used to qualify spectrophotometers, must be checked and recertified within regular intervals. Thus you make sure that you are able to fulfill your internal quality standards as well as the high accuracy and security of your measurements.

It is generally recommended to have an inspection and recalibration of glass filters carried out every 12 months for the first two years of use, after that every 24 months. An inspection and recalibration of the liquid filters should be carried out not later than every 12 months.

The periods indicated are based on our experience and are supposed to be seen as reference values.

RECERTIFICATION OF YOUR FILTERS AT HELLMA ANALYTICS:

- // Fill in return form
- // Enclose copy of current calibration certificate
- // Send filter to the Hellma Analytics Calibration Laboratory
- // Filter will be cleaned and recertified
- // You will receive your filter with a new DAkkS Calibration Certificate (DAkkS is the national accreditation body for the Federal Republic of Germany)

RECERTIFYING OF THE FILTERS WITH DAKKS CERTIFICATE

Glass Filters

TYPE	SERVICE	ARTICLE-NO.
666.000	Recertifying glass filter set 666.000	666-000-RE
666-F1	Recertifying Holmium Oxide Glass Filter 666-F1	666-F1-RE-339
666-F2	Recertifying Neutral Density Glass Filter 666-F2 (0.25 absorbance)	666-F2-RE-39
666-F201	Recertifying Neutral Density Glass Filter 666-F201 (0.3 absorbance)	666-F201-RE-39
666-F3	Recertifying Neutral Density Glass Filter 666-F3 (0.5 absorbance)	666-F3-RE-38
666-F4	Recertifying Neutral Density Glass Filter 666-F4 (1.0 absorbance)	666-F4-RE-37
666-F202	Recertifying Neutral Density Glass Filter 666-F202 (1.5 absorbance)	666-F202-RE-36
666-F203	Recertifying Neutral Density Glass Filter 666-F203 (2.0 absorbance)	666-F203-RE-36
666-F7	Recertifying Didymium Glass Filter BG 36	666-F7-RE-323



Liquid Filters

TYPE	SERVICE	ARTICLE-NO.
667.003-UV	Recertifying complete set 667.003-UV for checking the photometer according to Ph. Eur.	667003-UV-RE-40
667.100-UV	Recertifying filter set 667.100-UV to check for stray light according to Ph. Eur.	667100-UV-RE-40
667.200-UV	Recertifying filter set 667.200-UV to check spectral resolution according to Ph. Eur.	667200-UV-RE-40
667.305-UV	Recertifying filter set 667.305 to check photometric accuracy according to Ph. Eur.	667305-UV-RE-40
667-UV5	Recertifying filter set 667-UV5 to check the wavelength accuracy according to Ph. Eur.	667-005UV-RE-40
667.101-UV	Recertifying filter set 667.101-UV to check stray light	667101-UV-RE-40
667.102-UV	Recertifying filter set 667.102-UV to check stray light	667102-UV-RE-40
667.400-UV	Recertifying filter set 667.400 to check wavelength accuracy	667400-UV-RE-40
667.301-UV	Recertifying filter set 667.301 to check photometric accuracy	667301-UV-RE-40
667.307-UV	Recertifying filter set 667.307-UV to check the linearity of absorption	667-307-UV-RE-40



REFERENCE PLATES FOR QUALIFYING MICROPLATE READERS

With reference plates from Hellma Analytics you can check the photometric and wavelength accuracy of microplate readers. They have the same dimensions as a microplate with 96 wells and a 6.6 mm diameter per window (height 14.5 x width 125 x length 85.5 mm).



Reference plate type 666.013 consists of an aluminum frame with 5 neutral density glass strips and one reference range, thus every 16 windows an absorption value will be measured. Reference plate type 666.113 consists of an aluminum frame with 4 neutral density glass strips (per 16 windows), 1 holmium oxide glass stripe (16 windows) and one reference range (16 windows).

All reference plates come with a DAkKS Calibration Certificate.

TYPE	USAGE	MATERIAL	WAVELENGTH	ARTICLE-NO.
		Nominal value of absorption	nm	
666.013	to check photometric accuracy	Neutral Density Glass Filter NG 11 (0.25), NG 5 (0.5), NG 4 (1.0), NG 3 (1.5), (2.5)	405, 450, 490, 650	666-013
666.113	to check photometric accuracy and wavelength accuracy	Neutral Density Glass Filter NG 5 (0.5), NG 4 (1.0), NG 3 (1.5), (2.0) Holmium Oxide glass filter	405; 450; 490; 650 270; 361; 453; 536; 638	666-113

Recertifying of Reference Plates

TYPE	SERVICE	MATERIAL	ARTICLE-NO.
666.013	Recertifying Reference Plate for Microplate Reader	Neutral Density Glass Filter NG 11, NG 5, NG 4, NG 3	666-013-RE
666.113	Recertifying Reference Plate for Microplate Reader	Neutral Density Glass Filter NG 5, NG 4, NG 3, Holmium Oxide glass filter	666-113-RE



**DAkKS CALIBRATION CERTIFICATE
FROM HELLMA ANALYTICS
SAFETY FOR CERTIFIED
REFERENCE MATERIALS**



OPTICAL IMMERSION PROBES

USAGE

Immersion Probes support engineers, researchers and analysts in several fields where process efficiency is required.

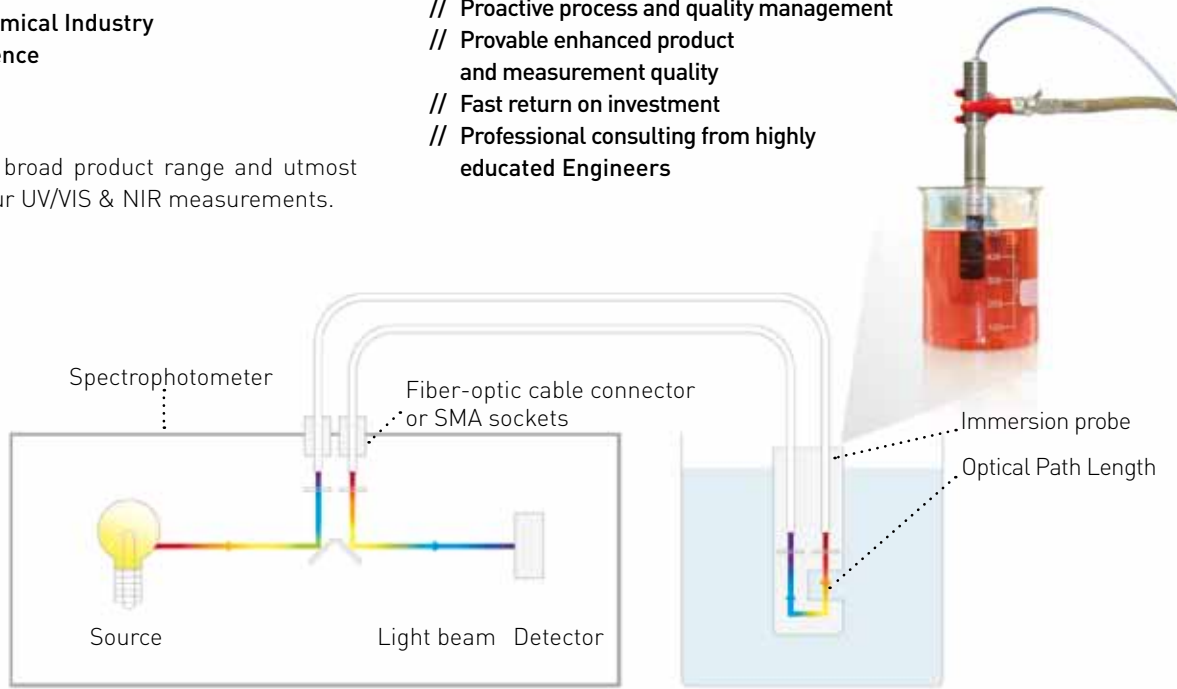
For example:

- // Chemical and Petrochemical Industry
- // Pharmacy and Life Science
- // Food and Beverage
- // Polymers

Hellma Analytics offers a broad product range and utmost competence to support your UV/VIS & NIR measurements.

BENEFITS

- // Higher process efficiency and performance
- // Simple and safe process monitoring
- // Optimal control of complex reaction processes
- // Proactive process and quality management
- // Provable enhanced product and measurement quality
- // Fast return on investment
- // Professional consulting from highly educated Engineers



EXCALIBUR STANDARD IMMERSION PROBE

All-Round Probe

This classic transmission probe features a broad range of possible applications. Whether for use in the lab, for online monitoring in process environment or even for TDA -measurements – it is always the right choice.

Optical Path Length mm (tolerance ± 0.01)	1 mm, 2 mm, 5 mm, 10 mm, 20 mm
Outer Diameter	probe head 15 mm probe shaft 20 mm protective sleeve 20 mm
Optical Material	Quartz
Probe Body Material	Stainless steel 1.4404 (316 L)
Sealing Technology	Kalrez® 6375 Kalrez® 4079
Spectral Range	UVS/Vis approx. 40 % in air above 300 nm NIR approx. 40 % in air above 400 nm
Fiber Optical Connection	1.80 m external fiber optical cables with SMA connectors
Temperature Range	5 °C to 150 °C
Pressure Range	-1 bar to 6 bar
Immersion Depth	100 mm (10 mm optical path length)



	UVS	NIR
Path Length mm	ARTICLE-NO.	
1	661-002-1-S-46	661-002-1-N-46
2	661-002-2-S-46	661-002-2-N-46
5	661-002-5-S-46	661-002-5-N-46
10	661-002-10-S-46	661-002-10-N-46
20	661-002-20-S-46	661-002-20-N-46

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 Configuration, requests, ordering
 and much more information.
www.myPATprobe.com

EXCALIBUR STANDARD IMMERSION PROBE

All-Quartz Probe

These Hellma Analytics all-quartz probes are outstanding due to its unique design which makes additional sealing material superfluous. This makes them the ideal tool for measuring aggressive samples even at the lowest temperatures – measuring beyond the limits.



Optical Path Length mm (tolerance ± 0.01)	1 mm, 2 mm, 5 mm, 10 mm, 20 mm
Outer Diameter	Probe head: 15 mm Quartz barrel: 18 mm
Optical Material	Quartz
Probe Body Material	Quartz
Sealing Technology	Directly fused
Spectral Range	UVS/Vis approx. 40 % in air above 300 nm NIR approx. 40 % in air above 400 nm
Fiber Optical Connection	1.80 m external fiber optical cables with SMA connectors
Temperature Range	5 °C to 150 °C [-180 °C to 150 °C with vacuum jack]
Pressure Range	-1 bar to 6 bar
Immersion Depth	210 mm (10 mm optical path length)

	UVS	NIR
Path Length mm	ARTICLE-NO.	
1	661-302-1-S-46	661-302-1-N-46
2	661-302-2-S-46	661-302-2-N-46
5	661-302-5-S-46	661-302-5-N-46
10	661-302-10-S-46	661-302-10-N-46
20	661-302-20-S-46	661-302-20-N-46

WITH VACUUM JACK FOR LOW TEMPERATURE APPLICATIONS

	UVS	NIR
Path Length mm	ARTICLE-NO.	
1	661-202-1-S-46	661-202-1-N-46
2	661-202-2-S-46	661-202-2-N-46
5	661-202-5-S-46	661-202-5-N-46
10	661-202-10-S-46	661-202-10-N-46
20	661-202-20-S-46	661-202-20-N-46

EXCALIBUR STANDARD IMMERSION PROBE

All-Quartz Probe Tapered version with ground glass joint NS 19/35

Optical Path Length mm (tolerance ± 0.01)	1 mm, 2 mm, 5 mm, 10 mm, 20 mm
Outer Diameter	15.5 mm (probe head) Taper NS 19/35
Optical Material	Quartz
Probe Body Material	Quartz
Sealing Technology	Directly fused
Spectral Range	UVS/Vis approx. 40 % in air above 300 nm NIR approx. 40 % in air above 400 nm
Fiber Optical Connection	1.80 m external fiber optical cables with SMA connectors
Temperature Range	5 °C to 150 °C
Pressure Range	-1 bar to 6 bar
Immersion Depth	130 mm (10 mm optical path length)



	UVS	NIR
Path Length mm	ARTICLE-NO.	
1	661-500-1-S-46	661-500-1-N-46
2	661-500-2-S-46	661-500-2-N-46
5	661-500-5-S-46	661-500-5-N-46
10	661-500-10-S-46	661-500-10-N-46
20	661-500-20-S-46	661-500-20-N-46



OPTICAL IMMERSION PROBES

These transflection immersion probes have been specifically designed for laboratories and small volume analyses. They are available with fixed path lengths and very small outer diameters e.g. 3.2 mm/4 mm/6 mm. The 6 mm version offers increased flexibility due to interchangeable path length tips.

FALCATA STANDARD IMMERSION PROBE

with 3.2 mm and 4 mm diameter

These micro immersion probes have been specifically developed for measurements in small volumes. Due to their slim form, less sample material is required for a measurement to be taken.



Optical Path Length mm (tolerance ± 0.02)	5 mm, 10 mm
Outer Diameter	3.2 mm/4 mm
Optical Material	Quartz
Probe Body Material	Stainless steel 1.4404 (316 L)
Sealing Technology	Epoxy glue
Spectral Range	UVS/VIS approx. 30 % in air above 300 nm NIR approx. 30 % in air above 400 nm
Fiber Optical Connection	1.80 m external fiber optical cables with SMA connectors
Temperature Range	5 °C to 150 °C
Pressure Range	-1 bar to 6 bar
Immersion Depth	75 mm/130 mm (10 mm path length)

FALCATA STANDARD IMMERSION PROBE 3.2 mm DIAMETER

	UVS	NIR
Path Length mm	ARTICLE-NO.	
5	661-610-5-S-46	661-610-5-N-46
10	661-610-10-S-46	661-610-10-N-46

FALCATA STANDARD IMMERSION PROBE 4 mm DIAMETER

	UVS	NIR
Path Length mm	ARTICLE-NO.	
5	661-611-5-S-46	661-611-5-N-46
10	661-611-10-S-46	661-611-10-N-46

FALCATA STANDARD IMMERSION PROBE

with 6 mm diameter

Increased flexibility due to interchangeable path length tips.



Optical Path Length mm (tolerance ± 0.02)	1 mm, 2 mm, 5 mm, 10 mm, 20 mm through interchangeable tips
Outer Diameter	6 mm
Optical Material	Quartz
Probe Body Material	Stainless Steel 1.4435 (316 L)
Sealing Technology	Epoxy glue
Spectral Range	UVS/VIS approx. 40 % in air above 300 nm NIR approx. 40 % in air above 400 nm
Fiber Optical Connection	1.80 m external fiber optical cables with SMA connectors
Temperature Range	5 °C to 150 °C
Pressure Range	-1 bar to 6 bar
Immersion Depth	175 mm (10 mm optical path length)

	UVS	NIR
Path Length mm	ARTICLE-NO.	
1/2/5/10/20	661-622-set-S-46	661-622-set-N-46
1	661-622-1-S-46	661-622-1-N-46
2	661-622-2-S-46	661-622-2-N-46
5	661-622-5-S-46	661-622-5-N-46
10	661-622-10-S-46	661-622-10-N-46
20	661-622-20-S-46	661-622-20-N-46

ACCESSORIES INTERCHANGEABLE PATH LENGTH TIPS

	Path Length Tips
Path Length mm	ARTICLE-NO.
1	665-622-1-40
2	665-622-2-40
5	665-622-5-40
10	665-622-10-40
20	665-622-20-40

ACCESSORIES

EXTERNAL CELL HOLDER

The external cell holder is useful when the spectrophotometer does not have an internal cell holder or when measurements with cells are to be made at some distance from the spectrophotometer e.g. in a fume hood. To connect this cell holder properly to your system you will require 2 x 1m fiber optic cables in the corresponding spectral range. You should select the option "SMA-Collimator".



Material	Aluminium, Black Anodised
Dimensions	123 mm x 40 mm x 45 mm
Temperature of solution in cell	Max. 120 °C (Quartz Cells Only)
Ambient temperature	Max. 50 °C
Fiber Optic Cables	These must be ordered separately.
Notes	Suitable for cells with path length 1 mm to 20 mm
ARTICLE-NO.	664-15-71

FIBER OPTIC CABLES

Fiber optic cables can be supplied with either SMA connectors or special collimating lenses to suit the application that they are being used for.

Core Diameter	600 µm
Numerical Aperture	0.22
Beam Diameter (lens)	3.7 mm
Max. Temperature	150 °C



FIBER OPTIC INTERFACE

This accessory is to be used when SMA sockets are not available on your spectrophotometer. To connect this interface properly to your system you will require, in addition to your probe, 2 x 1m fiber optic cables in the corresponding spectral range. You should select the option "SMA-Collimator". The SMA end is connected to your probe via a small SMA/SMA adapter and the collimating ends are plugged into the interface.



Effective Aperture	4 mm Diameter
Outside Dimension	60 mm x 12.5 mm x 12.5 mm
Center Height	8.5/15/20 mm
Wavelength Range	190 nm to 2300 nm, depends on cables used
Notes	Other center heights on request
ARTICLE-NO.	662-85-UVNIR-46 662-15-UVNIR-46 662-20-UVNIR-46

ACCESSORIES SMA/SMA ADAPTER

ARTICLE-NO.	041-500-74
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WAVELENGTH	LENGTH	SMA – SMA	SMA – COLLIMATOR
NIR		ARTICLE-NO.	ARTICLE-NO.
	1 m	ALN001LSS	ALN001LSC
	2 m	ALN002LSS	ALN002LSC
	3 m	ALN003LSS	ALN003LSC
	4 m	ALN004LSS	ALN004LSC
	5 m	ALN005LSS	ALN005LSC
	6 m	ALN006LSS	ALN006LSC
	7 m	ALN007LSS	ALN007LSC
UV	8 m	ALN008LSS	ALN008LSC
	1 m	ALU001LSS	ALU001LSC
	2 m	ALU002LSS	ALU002LSC
	3 m	ALU003LSS	ALU003LSC
	4 m	ALU004LSS	ALU004LSC
	5 m	ALU005LSS	ALU005LSC
	6 m	ALU006LSS	ALU006LSC
	7 m	ALU007LSS	ALU007LSC
UVS	8 m	ALU008LSS	ALU008LSC
	1 m	ALS001LSS	ALS001LSC
	2 m	ALS002LSS	ALS002LSC
	3 m	ALS003LSS	ALS003LSC
	4 m	ALS004LSS	ALS004LSC
	5 m	ALS005LSS	ALS005LSC
	6 m	ALS006LSS	ALS006LSC
	7 m	ALS007LSS	ALS007LSC
8 m	ALS008LSS	ALS008LSC	



CLEANING CONCENTRATE FOR CELLS AND OPTICAL COMPONENTS

CLEANING

of cells and optical components

TYPE	DESCRIPTION	ARTICLE-NO.
320.003	Hellmanex® III Liquid cleaning concentrate, for glass, quartz cells and optical components Selling unit: 1.3 kg PE bottle (1.0 l)	9-307-011-4-507
325.000	SAVE-a-CELL plastic cell holder for 4 cells with 10 mm optical path length for cleaning purposes	325.000



320.003



325.000

APPLICATION

Hellmanex® III is an alkaline liquid concentrate which must simply be mixed with water to yield an effective cleaning solution of quartz and glass cells. It can also be used to clean other sensitive optical components made of glass, quartz, sapphire and porcelain.

CHARACTERISTICS

Hellmanex® III significantly reduces the surface tension of water. The removal of dirt particles is also assured by the good wetting action of Hellmanex® III aqueous solution, whilst its high emulsifying and dispersing capabilities prevent the redeposition of the loosened particles. Special surface-active substances facilitate the residue-free rinsing of the optical components once they have been cleaned.

CLEANING AND DILUTION

The optimal dilution depends on several factors, such as the hardness of the water, the degree and type of contamination, the temperature etc. The use of demineralised water improves the cleaning characteristics.

CONCENTRATION (% BY VOL.)	TEMPERATURE (°C)	TIME (MINUTES)
0.5-2	20-25	120-180
0.5-2	30-35	30-40
0.5-2	50-60 (Quartz only)	10-15
0.5-2	70-80 (Quartz only)	< 5

Our brochures provide detailed information about the appropriate product groups and in addition, offer thematic information as well as handling advice.

Hellma Analytics

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www.hellma-analytics.com/download

PRODUCT BROCHURES



Product Catalogue
BestCellers 2013



Optical Immersion Probes
Fiber Optical Flow Cells

THEMATIC INFORMATION



Flow Channels for Cytometry



UV/VIS Calibration
Standards



TrayCell
Ultra-Micro-Cell



Hellmanex III
Cleaning Concentrate



Technology Expertise

Hellma Optics

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PRODUCT BROCHURES



Cylindrical Optics
Toric Optics

Flat Optics
Special Optics

Hellma Materials

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PRODUCT BROCHURES



Calcium Fluoride
Raw material and optical components



NOTES

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