

CELlect Range 2016

Featuring the UK's most popular cuvettes and cells for spectroscopy and optical analysis...



...Selected for you and available from
local stock

Welcome to the
CELlect Range
Enabling Optical Analysis
from Hellma UK Ltd

The **CELlect** Range of Cuvettes and Cells

Introduction

At Hellma Analytics we have been manufacturing optical components for spectroscopy for over 90 years. Dedicated to high quality, precision drilling and machining; grinding, polishing, fusing and fabrication in quartz, glass and other optical materials, our range extends from a comprehensive range of cuvettes and cells to micro-volume analysis, reference materials, optical immersion probes and much more.

The **CELlect Range** is a **new** offering of a **full** range of cells and cuvettes designed to meet the requirements of most analysts for sample handling in their spectrophotometers, fluorimeters and other opto-analytical instruments.

Created from detailed research into the most popular cells and cuvettes supplied to our UK end-users, the **CELlect Range** is now available directly from our UK stock.

Manufactured in the Hellma Analytics factory in Mullheim, Germany to the same high standards demanded of all our laboratory and process equipment, and with the same high quality materials required to give you confidence in your results, the **CELlect Range** is only available from our approved and trained Distributors and Partners to ensure the supply is as close to hand as possible, shortening response times and offering the very highest levels of customer service.

The **CELlect Range** is a unique product, with a unique identity that is defined by a special part number. To help confirm your requirements these part numbers are coded to describe the key aspects of the item they refer to, the format for these is detailed on the following page...

Part Numbering System (For Definitions See Technical Section or Click Headings)

Not all options are currently available in the *CELL*ect Range

<u>Type of Measurement</u>	<u>Type of Sampling</u>	<u>Type of Material (wavelength range)</u>	<u>Finish and Beam Height</u>
A = Absorbance	S = Static	1 = OS (320-2500nm)	A = N/A
K = Matched Pair	F = Flow-through	2 = OG (360-2500nm)	B = Black and any BH
F = Fluorescence	H = Hermetic Seal	3 = BF (330-2500nm)	C = Clear and any BH
S = Scatter	M = Microplate	4 = QS/QG (200-2500nm)	D = Black and 15mm BH
V = Validation	R = Reference	5 = UV (260-2500nm)	E = Clear and 15mm BH
C = Cytometry	C = Cleaning	6 = Aluminium	F = Black and 8.5mm BH
D = Dye Laser	T = TrayCell	7 = QX (200-3500nm)	G = Clear and 8.5mm BH
R = Reflectance	I = Immersion	8 = Polymer	
E = ATR	A = N/A	G = Glass filter	
X = Other (Accessories etc.)		L = Liquid filter	
		H = Hellmanex	

A S 4 C - 1 0 K 0 - 3 M 5 0 - L

<u>Path Length in μm with multiplier</u>	<u>Volume in nl with multiplier</u>	<u>Top Finish</u>
0001 = $1\mu\text{m}$	0001 = 1nl	L = Lid
0010 = $10\mu\text{m}$	0010 = 10nl	S = Stopper
0100 = $100\mu\text{m} = 0.1\text{mm}$	0100 = 100nl = $0.1\mu\text{l}$	M = Septum Seal
1K00 = $1000\mu\text{m} = 1\text{mm}$	1K00 = 1000nl = $1\mu\text{l}$	C = Screw Cap
10K0 = 10mm	10K0 = $10\mu\text{l}$	F = FEP Tubing
100K = 100mm	100K = $100\mu\text{l} = 0.1\text{ml}$	P = PTFE Tubing
1M00 = 1 metre	1M00 = $1000\mu\text{l} = 1\text{ml}$	T = Glass Tubes
For fluorescence cuvettes the two path lengths are given in whole mm	10M0 = 10ml	N = None
	100M = 100ml	2 = two path length caps for tray cell

Not all options are currently available in the *CELL*ect Range

Example:

AS4C-10K0-3M50-L = A cuvette for absorbance/transmission measurements and static sampling, made out of QS quartz with a clear body and suitable for any beam height. The path length is 10mm and the fill volume is 3.5ml and it has a PTFE lid.

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Click on the part number to go to a full description, image, specification and price.

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The following cuvettes/cells are also available as transmission matched pairs – see the page number indicated or click the page link for more product details. For technical information on transmission matching see page 30 or follow this [link...](#)

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Part Number: **AS2C-10K0-3M50-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (360 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a square PTFE lid.

AS2C-10K0-3M50-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OG - Optical Glass</i>	Wavelength Range:	<i>visible (360 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS2C-10K0-3M50-L	1 Cuvette	£19.10

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Part Number: **AS2C-20K0-7M00-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (360 to 2500nm). With a 20mm path length and for static sampling, this cuvette will fit a standard 20mm spectrophotometer cell holder, or a suitable adjustable cell holder, and can be used with any beam height. Classified as a macro cell with a sample volume of 7.0ml this cuvette is supplied with a square PTFE lid.

AS2C-20K0-7M00-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OG - Optical Glass</i>	Wavelength Range:	<i>visible (360 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/7.0ml</i>	Optical Path Length:	<i>20mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 22.5mm</i>

Order Part Number	Quantity	Price
AS2C-20K0-7M00-L	1 Cuvette	£23.30

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Part Number: **AS2C-40K0-14M0-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (360 to 2500nm). With a 40mm path length and for static sampling, this cuvette will fit all 40mm or suitable adjustable cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 14ml this cuvette is supplied with a square PTFE lid.

AS2C-40K0-14M0-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OG - Optical Glass</i>	Wavelength Range:	<i>visible (360 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/14ml</i>	Optical Path Length:	<i>40mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 42.5mm</i>

Order Part Number	Quantity	Price
AS2C-40K0-14M0-L	1 Cuvette	£27.10

[Return to Index](#)Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)Part Number: **AS2C-10K0-1M40-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (360 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard 10mm spectrophotometer cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.4ml this cuvette is supplied with a square PTFE lid.

AS2C-10K0-1M40-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OG - Optical Glass</i>	Wavelength Range:	<i>visible (360 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>4mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS2C-10K0-1M40-L	1 Cuvette	£30.30

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Part Number: **AS5C-10K0-3M50-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the UV/ visible wavelength range (260 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard 10mm spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a square PTFE lid. Also available as a matched pair.

AS5C-10K0-3M50-L – Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>UV – Quartz</i>	Wavelength Range:	<i>UV/visible (260 – 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS5C-10K0-3M50-L	1 Cuvette	£47.50
KS5C-10K0-3M50-L	2 Cuvettes (Matched Pair)	£133.00

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS5C-10K0-1M40-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (260 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard 10mm spectrophotometer cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.4ml this cuvette is supplied with a square PTFE lid. Also available as a matched pair.

AS5C-10K0-1M40-L -Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>UV - Quartz</i>	Wavelength Range:	<i>UV/visible (260 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>4mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS5C-10K0-1M40-L	1 Cuvette	£77.40
KS5C-10K0-1M40L	2 Cuvettes (Matched Pair)	£192.80

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-01K0-350K-L**

A 1mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm) for static sampling, this cuvette will fit all standard 1mm path length cell holders (will require adapter [XA6B-013-101](#) for 10mm cell holders), and can be used with any beam height. Classified as a macro cell with a sample volume of 350 μ l this cuvette is supplied with a square PTFE lid.

AS4C-01K0-350K-L - [Cuvette \(Cell\) for Transmission/Absorbance Measurement with PTFE lid.](#)

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/350μl</i>	Optical Path Length:	<i>1mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 3.5mm</i>

Order Part Number	Quantity	Price
AS4C-01K0-350K-L	1 Cuvette	£80.00

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Number: **AS4C-05K0-1M75-L**

A 5mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm) for static sampling, this cuvette will fit all standard 5mm cell holders (will require adapter [XA6B-013-105](#) for 10mm cell holders), and can be used with any beam height. Classified as a macro cell with a sample volume of 1.75ml this cuvette is supplied with a square PTFE lid.

AS4C-05K0-1M75-L - [Cuvette \(Cell\) for Transmission/Absorbance Measurement with PTFE lid.](#)

Form:	<i>Rectangular</i>	Material:	<i>QS - Quartz Suprasil QG - Quartz Glass</i>	Wavelength Range:	<i>visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/1.75ml</i>	Optical Path Length:	<i>5mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 7.5mm</i>

Order Part Number	Quantity	Price
AS4C-05K0-1M75-L	1 Cuvette	£59.10

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-10K0-3M50-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a square PTFE lid.

AS4C-10K0-3M50-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS4C-10K0-3M50-L	1 Cuvette	£53.00

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Number: **AS4C-20K0-7M00-L**

A 20mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm) for static sampling, this cuvette will fit all long path length (20mm) spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a rectangular PTFE lid.

AS4C-20K0-7M00-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/7ml</i>	Optical Path Length:	<i>20mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 22.5mm</i>

Order Part Number	Quantity	Price
AS4C-20K0-7M00-L	1 Cuvette	£82.30

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-40K0-14M0-L**

A 40mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm) for static sampling, this cuvette will fit all long path length (40mm) spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 14ml this cuvette is supplied with a rectangular PTFE lid.

AS4C-40K0-14M0-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>U/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/14ml</i>	Optical Path Length:	<i>40mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 42.5mm</i>

Order Part Number	Quantity	Price
AS4C-40K0-14M0-L	1 Cuvette	£95.30

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Number: **AS1C-10K0-3M50-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (320 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a square PTFE lid.

AS1C-10K0-3M50-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS1C-10K0-3M50-L	1 Cuvette	£34.30

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS1C-20K0-7M00-L**

A 20mm path length cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (320 to 2500nm) for static sampling, this cuvette will fit all long path length (20mm) spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 7ml this cuvette is supplied with a rectangular PTFE lid.

AS1C-20K0-7M00-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/7ml</i>	Optical Path Length:	<i>20mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 22.5mm</i>

Order Part Number	Quantity	Price
AS1C-20K0-7M00-L	1 Cuvette	£51.50

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Number: **AS1C-40K0-14M0-L**

A 40mm path length cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (320 to 2500nm) for static sampling, this cuvette will fit all long path length (40mm) spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 14ml this cuvette is supplied with a rectangular PTFE lid.

AS1C-40K0-14M0-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/14ml</i>	Optical Path Length:	<i>40mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 42.5mm</i>

Order Part Number	Quantity	Price
AS1C-40K0-14M0-L	1 Cuvette	£66.70

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS1C-50K0-17M5-L**

A 50mm path length cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (320 to 2500nm) for static sampling, this cuvette will fit all long path length (50mm) spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 17.5ml this cuvette is supplied with a rectangular PTFE lid.

AS1C-50K0-17M5-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/17.5ml</i>	Optical Path Length:	<i>50mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 52.5mm</i>

Order Part Number	Quantity	Price
AS1C-50K0-17M5-L	1 Cuvette	£76.20

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-01K0-350K-S**

A 1mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm) for static sampling, this cuvette will fit all standard spectrophotometer cell holders using adapter [XA6B-013-101](#), and can be used with any beam height. Classified as a macro cell with a sample volume of 350µl this cuvette is supplied with a PTFE stopper. This cuvette is also available in matched pairs – see below.

AS4C-01K0-350K-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE Stopper

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/350µl</i>	Optical Path Length:	<i>1mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 3.5mm</i>

Order Part Number	Quantity	Price
AS4C-01K0-350K-S	1 Cuvette	£122.00
KS4C-01K0-350K-S	2 Cuvettes (Matched Pair)	£282.00

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-05K0-1M75-S**

A 5mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm) for static sampling, this cuvette will fit all standard spectrophotometer cell holders using adapter XA6B-013-105, and can be used with any beam height. Classified as a macro cell with a sample volume of 1.75ml this cuvette is supplied with a PTFE Stopper. This cuvette is also available in matched pairs – see below.

AS4C-05K0-1M75-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE Stopper

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quatz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/1.75ml</i>	Optical Path Length:	<i>5mm</i>
Beam Height:	<i>Any</i>	Apperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 7.5mm</i>

Order Part Number	Quantity	Price
AS4C-05K0-1M75-S	1 Cuvette	£122.00
KS4C-05K0-1M75-S	2 Cuvettes (Matched Pair)	£282.00

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Number: **AS4C-10K0-3M50-S**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible U/wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a PTFE Stopper. This cuvette is also available in matched pairs – see below.

AS4C-10K0-3M50-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE Stopper

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quatz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Apperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS4C-10K0-3M50-S	1 Cuvette	£67.30
KS4C-10K0-3M50-S	2 Cuvettes (Matched Pair)	£172.60

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS1C-10K0-3M50-S**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (320 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a PTFE Stopper.

AS1C-10K0-3M50-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE Stopper

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS1C-10K0-3M50-S	1 Cuvette	£50.70

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS7C-01K0-350K-S**

A 1mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible/NIR wavelength range (200 to 3500nm) for static sampling, this cuvette will fit all standard spectrophotometer cell holders with adapter [XA6B-013-101](#), and can be used with any beam height. Classified as a macro cell with a sample volume of 350µl this cuvette is supplied with a PTFE stopper. This cuvette is also available in matched pairs – see below.

AS7C-01K0-350K-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE stopper.

Form:	<i>Rectangular</i>	Material:	<i>QX – Quartz Suprasil 300</i>	Wavelength Range:	<i>UV/visible/NIR (200 - 3500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/350µl</i>	Optical Path Length:	<i>1mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 3.5mm</i>

Order Part Number	Quantity	Price
AS7C-01K0-350K-S	1 Cuvette	£158.10
KS7C-01K0-350K-S	2 Cuvettes (Matched Pair)	£354.30

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS7C-05K0-1M75-S**

A 5mm path length cuvette/cell for Absorbance, transmission and other measurements in the UV/visible/NIR wavelength range (200 to 3500nm) for static sampling, this cuvette will fit all standard spectrophotometer cell holders using adapter [XA6B-013-105](#), and can be used with any beam height. Classified as a macro cell with a sample volume of 1.75ml this cuvette is supplied with a PTFE stopper. This cuvette is also available in matched pairs- see below.

AS7C-05K0-1M75-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE Stopper

Form:	<i>Rectangular</i>	Material:	<i>QX – Quartz Suprasil 300</i>	Wavelength Range:	<i>UV/visible/NIR (200 - 3500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/1.75ml</i>	Optical Path Length:	<i>5mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 7.5mm</i>

Order Part Number	Quantity	Price
AS7C-05K0-1M75-S	1 Cuvette	£142.90
KS7C-05K0-1M75-S	2 Cuvettes (Matched Pair)	£323.90

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A general purpose cuvette/cell for Absorbance, transmission and other measurements in the UV/visible/NIR wavelength range (200 to 3500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a PTFE stopper. This cuvette is also available in matched pairs – see below.

AS7C-10K0-3M50-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QX – Quartz Suprasil 300</i>	Wavelength Range:	<i>UV/visible/NIR (200 - 3500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS7C-10K0-3M50-S	1 Cuvette	£80.00
KS7C-10K0-3M50-S	2 Cuvettes (Matched Pair)	£198.10

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Part Number: **AS1C-10K0-1M40-L**

A general purpose cuvette/cell for Absorbance, transmission and other measurements in the visible wavelength range (320 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.4ml this cuvette is supplied with a square PTFE lid. This cuvette is also available in matched pairs – see below.

AS1C-10K0-1M40-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>4mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS1C-10K0-1M40-L	1 Cuvette	£47.70
KS1C-10K0-1M40-L	2 Cuvettes (Matched Pair)	£133.40

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-10K0-1M40-L**

A reduced volume cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.4ml this cuvette is supplied with a square PTFE lid.

AS4C-10K0-1M40-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>4mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS4C-10K0-1M40-L	1 Cuvette	£70.50
KS4C-10K0-1M40-L	2 Cuvettes (Matched Pair)	£179.10

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4C-10K0-700K-L**

A micro-volume cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a micro cell with a sample volume of 700µl this cuvette is supplied with a square PTFE lid.

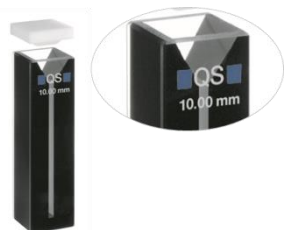
AS4C-10K0-700K-L - Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>micro/700µl</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>2mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS4C-10K0-700K-L	1 Cuvette	£91.50

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4B-10K0-700K-L**

A self-masking, micro volume cuvette/cell for Absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a micro cell with a sample volume of 700µl and with a black, self-masking surround, this cuvette is supplied with a square PTFE lid. This cell is also available as matched pairs.

AS4B-10K0-700K-L – Cuvette (Cell) for Transmission/Absorbance Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 – 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>2mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS4B-10K0-700K-L	1 Cuvette	£162.00
KS4B-10K0-700K-L	2 Cuvettes (Matched Pair)	£362.00

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AS4D-10K0-70K0-S**

A self-masking, ultra-micro volume cuvette/cell for absorbance, transmission and other measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with a 15mm beam height. Classified as an ultra-micro cell with a sample volume of just 70 μ l this cuvette has a black, self-masking surround and is supplied with a PE stopper.

AS4D-10K0-70K0-S - Cuvette (Cell) for Transmission/Absorbance Measurement with PE stopper

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Ultra-micro/70μl</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>15mm</i>	Aperture Width:	<i>2.5 x 2mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AS4D-10K0-70K0-S	1 Cuvette	£228.60

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AH4C-10K0-1M40-M**

A hermetically sealable cuvette/cell for Absorbance and transmission measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length and for static sampling, this cuvette will fit all standard cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.4ml it is supplied with a screw cap with integral silicone seal. The cap is open to form a septum seal for injection/extraction for pressures up to 3 bar.

AH4C-10K0-1M40-M - Cuvette (Cell) for Transmission/Absorbance Measurement with Sealed Screw Cap

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>4mm</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AH4C-10K0-1M40-M	1 Cuvette	£203.90

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AF4D-10K0-390K-F**

A self-masking, reduced volume absorbance/transmission cell for flow-through measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length this cuvette will fit all standard spectrophotometer cell holders, and can be used with a 15mm beam height. Classified as a semi-micro cell with a sample volume of just 390µl this cuvette is supplied with 2 x M6 screw-in connectors each with 500mm lengths of FEP tubing.

AF4D-10K0-390K-F – Cuvette (Cell) for Flow-through Transmission/Absorbance Measurements

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Flow</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>15mm</i>	Aperture Width:	<i>11 x 3.5mm</i>	Outside Dim HxWxD:	<i>35 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AF4D-10K0-390K-F	1 Cuvette	£285.80

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AF4C-10K0-1M50-T**

A quartz Absorbance/transmission cell for flow-through measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm path length this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.5ml this cuvette has inlet/outlet ports for the connection of silicone or similar tubing

AF4C-10K0-1M50-T - Cuvette (Cell) for Flow-through Transmission/Absorbance Measurements

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Flow</i>	Sample Volume:	<i>Semi-micro/1.5ml</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>36 x 4mm</i>	Outside Dim HxWxD:	<i>48 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
AF4C-10K0-1M50-T	1 Cuvette	£257.20

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **AF1F-10K0-18K0-N**

A compact, ultra-micro, Absorbance/transmission cell for flow-through measurements in the visible wavelength range (320 to 2500nm). With a 10mm path length this cuvette fits all standard spectrophotometer cell holders, and can be used with a beam height of 8.5mm. Classified as an ultra-micro cell with a tiny sample volume of 18µl the 'T' design enables easy connection of the optional [screw-in tubing kits](#) and enables rapid filling and flushing to minimise fill-time and carryover.

AF1F-10K0-18K0-N – 'T' Type Cuvette (Cell) for Flow-through Transmission/Absorbance Measurements

Form:	<i>Rectangular</i>	Material:	<i>QS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Flow</i>	Sample Volume:	<i>Ultra-micro/18µl</i>	Optical Path Length:	<i>10mm</i>
Beam Height:	<i>8.5mm</i>	Aperture Width:	<i>1.5mm diameter</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm Top 17 x 12.5mm</i>

Order Part Number	Quantity	Price
AF1F-10K0-18K0-N	1 Cuvette	£228.60

[Return to Index](#)Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)Part Number: **FH4C-1010-3M50-C**

A Fluorescence /Absorbance/transmission cuvette hermetically sealed with screw cap and silicone seal, made from QS quartz with a clear body and suitable for any beam height. With 10 x 10mm path lengths, this cuvette has 4 optical windows so can be used for both Fluorescence and Absorbance measurements it has a 3.5ml fill volume and fully sealed screw cap.

FH4C-1010-3M50-C – Sealed Cuvette (Cell) with screw cap for Fluorescence/Absorbance Measurements

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Sealed</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10 x 10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm</i>	Outside Dim HxWxD:	<i>56 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
FH4C-1010-3M50-C	1 Cuvette	£212.00

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Part Number: **FF4D-1001-110K-F**

A special all-quartz flow-through cuvette for Absorbance, transmission and Fluorescence measurements in the UV/visible wavelength range (200 to 2500nm). With a 10mm and 1mm path length when used for absorbance, this cuvette will fit all standard spectrophotometer cell holders, and can be used with a 15mm beam height. Classified as a micro cell with a sample volume of 110 μ l this cuvette is supplied with 2 x M6 screw connectors each with 500mm of FEP tubing. When disconnected this cuvette can be autoclaved.

FF4D-1001-110K-F – All-Quartz Cuvette (Cell) for Flow-through T%/Abs/Fluoro Measurements with 2 P/L

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Flow</i>	Sample Volume:	<i>Micro/110μl</i>	Optical Path Length:	<i>10mm and 1mm</i>
Beam Height:	<i>15mm</i>	Aperture Width:	<i>11 x 1 and 11 x 6mm</i>	Outside Dim HxWxD:	<i>35 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
FF4D-1001-110K-F	1 Cuvette	£546.70

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A general purpose cuvette/cell for Fluorescence measurements in the visible wavelength range (320 to 2500nm). With a 10 x 10mm path length and for static sampling with 4 clear windows, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a square PTFE lid.

FS1C-1010-3M50-L - Cuvette (Cell) for Fluorescence Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>OS – Special Optical Glass</i>	Wavelength Range:	<i>visible (320 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10 x 10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm (4 windows)</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
FS1C-1010-3M50-L	1 Cuvette	£89.60

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Part Number: **FS4C-1010-3M50-L**

A general purpose cuvette/cell for Fluorescence measurements in the UV/visible wavelength range (200 to 2500nm). With a 10 x 10mm path length, 4 optical windows and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a square PTFE lid.

FS4C-1010-3M50-L - Cuvette (Cell) for Fluorescence Measurement with PTFE lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10 x 10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm (4 windows)</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
FS4C-1010-3M50-L	1 Cuvette	£106.70

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Number: **FS4C-1010-3M50-S**

A general purpose cuvette/cell for Fluorescence measurements in the UV/visible wavelength range (200 to 2500nm). With a 10 x 10mm path length, 4 optical windows and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a macro cell with a sample volume of 3.5ml this cuvette is supplied with a PTFE stopper.

FS4C-1010-3M50-S - Cuvette (Cell) for Fluorescence Measurement with PTFE Stopper.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Macro/3.5ml</i>	Optical Path Length:	<i>10 x 10mm</i>
Beam Height:	<i>Any</i>	Aperture Width:	<i>9.5mm (4 windows)</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
FS4C-1010-3M50-S	1 Cuvette	£141.00

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **FS4C-1004-1M40-L**

A general purpose cuvette/cell for Fluorescence measurements in the UV/visible wavelength range (200 to 2500nm). With a 10 x 4mm path length, 4 optical windows and for static sampling, this cuvette will fit all standard spectrophotometer cell holders, and can be used with any beam height. Classified as a semi-micro cell with a sample volume of 1.4ml this cuvette is supplied with a PTFE Lid.

FS4C-1004-1M40-L - Cuvette (Cell) for Fluorescence Measurement with PTFE Lid.

Form:	<i>Rectangular</i>	Material:	<i>QS – Quartz Suprasil QG – Quartz Glass</i>	Wavelength Range:	<i>UV/visible (200 - 2500nm)</i>
Sampling:	<i>Static</i>	Sample Volume:	<i>Semi-micro/1.4ml</i>	Optical Path Length:	<i>10 x 4mm</i>
Beam Height:	<i>Any</i>	Apperture Width:	<i>4mm (4 windows)</i>	Outside Dim HxWxD:	<i>45 x 12.5 x 12.5mm</i>

Order Part Number	Quantity	Price
FS4C-1004-1M40-L	1 Cuvette	£163.90

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Hellmanex III is a cleaning concentrate for cleaning glass, quartz, sapphire and ceramic materials as used in cuvettes and other optical components. Supplied in a 1 litre bottle that when diluted can make from 50 and 200 litres of working solution. Simply soaking in the working dilution is sufficient for most cleaning procedures with typical cleaning times of 3 hours to just 5 minutes depending on dilution and temperature.

XHCA-320-003- Hellmanex III Cleaning Concentrate 1 litre bottle.

Form:	<i>1 litre bottle Concentrate</i>	Dilution Rate:	<i>0.5 to 2.0% Solution</i>	Working Temperature:	<i>20 to 80°C (quartz) 20 to 35°C (glass)</i>
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Order Part Number	Quantity	Price
XHCA-320-003	1 Litre Bottle	£42.00

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Part Number: **XHCA-325-000**

SAVE-a-CELL enables 4 x 10mm path length cells to be lowered into a beaker of diluted Hellmanex III. For quick, easy and safe handling of cuvettes during the washing and cleaning process. Will fit most beakers from around 150ml capacity.

XHCA-325-000 Save-a-cell cleaning rack for 4 x 10mm path length cells

Form:	<i>Plastic cell holder for easy handling and cleaning</i>	Package:	<i>1 rack for 4 x 10mm path length cells</i>	Dimensions:	<i>Max dia. 57mm Max height 157mm</i>
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Order Part Number	Quantity	Price
XHCA-325-000	1 Rack for 4 x 10mm cuvettes	£48.40

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)
Part Numbers: **XA6B-013-101 and XA6B-013-102 and XA6B-013-105**

Spacers to enable short path length cuvettes/cells to be used in a standard 10mm path length cuvette holder as supplied on most laboratory spectrophotometers.

XA6B-013-101 is a 9mm spacer for use with 1mm path length cuvettes

XA6B-013-102 is an 8mm spacer for use with 2mm path length cuvettes

XA6B-013-105 is a 5mm spacer for use with 5mm path length cuvettes

XA6B-013-101 and XA6B-013-102 and XA6B-013-105 Spacers for Short Path Length Cuvettes.

Form:	<i>Black Aluminium Spacer – any beam height</i>	Compatible Path Lengths:	<i>101 for 1mm cell 102 for 2mm cell 105 for 5mm cell</i>	Dimensions:	<i>38 x 12.5 x 9mm 38 x 12.5 x 8mm 38 x 12.5 x 5mm</i>
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Order Part Number	Quantity	Price
XA6B-013-101	1 Spacer	£39.30
XA6B-013-102	1 Spacer	£39.30
XA6B-013-105	1 Spacer	£39.30

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 Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Part Number: **XF8A-040-111-F and XF8A-040-222-P**

FEP and PTFE tubing sets for use with flow-through cuvettes with M6 screw connectors. Each set includes two tubes, 500mm long (in the respective material) with one long and one short screw-in connector for ease of attachment (fit the short one first).

XF8A-040-111-F with FEP tubing 1.9mm od and 1.1mm id

XF8A-040-222-P with PTFE tubing 1.6mm od and 1.0mm id

XF8A-040-111-F and XF8A-040-222-P **FEP and PTFE Tubing Sets for Flow-Through Cuvettes**

Form:	<i>Tubing Sets for Flow-Through Cuvettes</i>	Material:	<i>FEP or PTFE Tubing</i>	Length:	<i>500mm</i>
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Order Part Number	Quantity	Price
XF8A-040-111-F	1 x FEP Tubing Set	£24.90
XF8A-040-222-P	1 x PTFE Tubing Set	£48.60

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Make cleaning your cuvettes/cells easy with [Hellmanex III Cleaning concentrate](#)

Technical Introduction to Nomenclature and Part Numbering Systems

This information follows the different categories embedded in the *CELLECT* part numbering system and gives a brief technical introduction to each.

Types of Measurement

Cuvettes and cells can be used for many different types of optical measurement; just a few of the most common types are briefly mentioned here. Note that not all of these are included in the *CELLECT* range but are available from Hellma UK Ltd. Each of these is obviously a complex subject in its own right, for more information follow the link given or contact Hellma UK as detailed on the back cover of this catalogue.

A is for **Absorbance** (that also includes **Transmission** (T%)) and is the basis for many of the **Concentration** measurements made on visible and UV visible spectrophotometers. Absorbance measurements are made on the light that passes directly through the sample in the cuvette i.e. it is the light that is transmitted through the sample that we measure, often called a 180-degree light path. Many Absorbance/Transmission cuvettes have frosted sides to reduce stray-light, with just the opposing windows polished to the required optical clarity. There are many types of absorbance/transmission cuvettes described in this catalogue for details of others please visit www.hellma.co.uk

K is for **Matched Pair**, which is short-hand for the Transmission Matching of Absorbance cuvettes. Every cuvette has a background absorbance that is mostly made up of the reflection losses due to the change in refractive index that the light beam experiences as it crosses each of the four glass/air or glass/sample interfaces. Any variations in the background absorbance that this creates are typically compensated for by blanking on every cuvette before using it. To save the need for this on a double-beam instrument one of a matched pair of cuvettes containing the blank solution can be placed in the reference beam. A matched pair consists of two cuvettes whose background transmission has been measured and confirmed to be equal. Each matched

cuvette is given a code that defines the relevant parameters generated from the matching process and any cuvettes with the same code can be treated as matched. This is of course valid for the cuvettes when they are new, scratches, damage, staining etc. will all reduce the effectiveness of this initial matching – see the article [‘Are your cuvettes up to scratch’](#) or visit www.hellma.co.uk for information regarding the care of cuvettes.

F is for **Fluorescence** that is the measurement of the light emitted from a sample that has been excited by the energy from an incident light beam; this is typically measured at 90 degrees to reduce the impact of transmitted light.

Most Fluorescence cuvettes have four optical windows so they can be used for absorbance/transmission too, some can even have the base optically polished giving you five possible windows. Several Fluorescence cuvettes are described in this catalogue for details of others please visit www.hellma.co.uk

S is for **Scatter**, and light scatter can be used for a number of different applications, including turbidity, crystal growth, cell density/growth rate, particle sizing and counting as well as determining the molecular weight of polymers. The light path can be 180 degrees, 90 degrees (turbidity) forward scatter or back scatter depending on the application. Four clear windows cover most options but often sample tubes are used too. There are no dedicated light scatter cuvettes in the **CELLect Range** but in many cases fluorescence cells with four (or five) clear windows will be suitable, for details of specific light scatter cuvettes/cells or tubes please visit www.hellma.co.uk

V is for **Validation**, when measuring sample concentrations on a spectrophotometer a number of different methods can be used for creating calibration data to relate the absorbance value to the concentration of the sample. However the absorbance and wavelength settings are set in manufacture along with the resolution and stray light performance characteristics. The spectrophotometer’s performance and hence the accuracy of these key parameters is subject to change and degradation over time depending on how the spectrophotometer is used and maintained. So a

critical task is to validate the performance of the spectrophotometer to ensure your results can be trusted. Various glass filters and liquid filter sets are available to validate the performance to traceable national and international standards. See the article '[Has Your Spectrophotometer Been Validated](#)' or visit www.hellma.co.uk for more information

C is for **Cytometry**, at the heart of a Cytometer is a precision cell that is used to count or measure cells as they pass in front of a laser beam. Using multiple stages of cutting, polishing and fusing, flow channels as small as 0.05mm square can be produced in the cell, with all four inner surfaces polished to the highest optical standards. With many other options, including a range of conical inlet/outlet ports to interface to the relevant instrumentation, these cells can be custom built to suit most Cytometry applications. There are currently no Cytometry cells in the **CELLect Range** but for more information on these please contact Hellma UK or visit www.hellma.co.uk.

D is for **Dye-Laser Cells** – a dye-laser cell is an optical component used in a dye-laser to contain the dye in which the laser light is produced. Since it is located in the optical resonator the cell must meet the highest optical specification. Rectangular and prismatic cells can be produced as well as flow through versions; that may also include an integrated reflector. There are currently no Dye-Laser cells in the **CELLect Range** but for more information please contact Hellma UK or visit www.hellma.co.uk.

R is for **Reflectance Cells**, these are cylindrical cells used for holding powders or suspensions over a reflectance instrument or probe. Excitation light is focused through the base of the cell and the light reflected from the particles is also detected through the base; colour, particle size and density can all be calculated using dedicated calibration algorithms. There are currently no reflectance cells or probes in the **CELLect Range** but for more information please contact Hellma UK or visit www.hellma.co.uk.

E is for **ATR** which is the Attenuation of the Total Reflection caused through absorbance of the Evanescent wave in the sample. Probes and flow-through cells are available with windows of sapphire and diamond. ATR is an ideal

technique for measuring samples with a very high absorbance in-situ, and avoiding the need for the dilution of grab-samples. There are currently no ATR cells or probes in the **CELLect Range** but for more information please contact Hellma UK or visit www.hellma.co.uk. [Return to Part No. Matrix](#)

Type of Sampling

S is for **Static sampling**, the simplest most common way of using a cuvette, just fill it with sample or standard, replace the lid or stopper if necessary and place it in the spectrophotometer's cell holder, close the lid and make the measurement.

F is for **Flow-Through sampling** this enables the measurement of a continuous stream of sample which can be from a bulk quantity or from a bubble segmented feed from multiple samples picked up by an auto-sampler or some other sample handling system. Two connection systems are available, glass tubes for the connection of flexible silicon tubing or M6 screw connectors for the connection of FEP or PTFE micro-bore tubing. The direction of flow and the placement of any pump need to be considered when connecting any flow-through cuvettes, in general the filling line should be the one that enters the bottom of the chamber. For advice on selecting and configuring a flow-through system suitable for your sample type and application please contact Hellma UK.

H is for **Hermetic Seal**. In cases where a reaction or measurement has to take place in a controlled atmosphere or under anaerobic conditions a hermetically sealed cuvette may be required. These cells are sealed with a silicon seal and screw cap. In cases where a liquid or gas has to be added a cap with a septum seal can be supplied where the seal can be punctured by the needle of a syringe for injection or removal of sample/reactants. Sealed cells can withstand pressures up to 3 bar.

M is for **Microplate** which is a multi-well plate for processing and measuring samples across a two-dimensional matrix. Standard 96 well plates have a

twelve by eight matrix, with our all-quartz microplate giving the best optical performance, durability and re-usability of any other material types.

R is for **Reference Materials** that are certified traceable to International standards (CRM) and used for validating the performance of spectrometers and other optical instrumentation. Available as both glass and liquid filters CRMs are available for checking a wide range of parameters to various standards.

C is for the **Cleaning** of cuvettes and other optical components. Hellmanex III was designed and developed specifically for cleaning glass, quartz, sapphire and ceramic materials used in optical systems. Hellmanex III is supplied as a concentrate in a 1 litre bottle that will make up to 200 litres of working solution, cleaning is by simple immersion with cleaning times of 3 hours to just 5 minutes depending on dilution rate and temperature.

T is for **TrayCell** that is a unique, fibre-optic, ultra-micro sample, measuring system in the format of a standard cuvette. TrayCell makes the measurement of a single drop of sample, from as little as 0.7µl, quick and easy. TrayCell has a range of optional caps that define a reproducible path length and sample volume, adding to its flexibility and enabling a wide range of applications, from life-sciences to forensics and precious material analysis, to be resolved.

I is for **Immersion** – when measuring samples from bulk containers, or measuring samples in-line/at-line, or for process control, it is easier and more practical to use **optical immersion probes** that ‘dip’ into the sample to be measured, rather than taking small individual samples to a lab environment. There are many different types of optical immersion probes, using different materials and methods of construction, some ‘standard’ versions, others that can be configured, as well as fully custom designed probes for specific applications, plant and processes. Contact Hellma UK for further information.

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Type of Material

The type of material used for the construction of optical components determines the level of transmission and the wavelength range over which it can be used. Other materials of construction may also have a bearing on usage and will be defined in a wider specification/drawing document. The following optical materials are used for the manufacture of standard cuvettes, other materials are possible and details should be requested for other options and possibilities.

The wavelength range specified is that which gives at least 80% transmission from the maximum for that material; however the graphs below show that the curves can have a rapid drop-off so working beyond the specified limits must be done with care and with reference to the relevant transmission curve.

1 = OS or Special Optical Glass, this is manufactured from Schott type UK 5 glass, a crown glass made from exceptionally pure raw materials to give an improved performance in the near UV, with a working wavelength down to 320nm and a range up to 2500nm.

2 = OG or Optical Glass, this is manufactured from Schott B270 glass in panes with fire polished surfaces, the optical performance is less but cells can be fused with little extra grinding or polishing. The range is limited to 360nm up to 2500nm.

3 = BF or Borofloat which is manufactured from a borosilicate glass using the float process. Borofloat has good chemical resistance and a low coefficient of thermal expansion making it ideal for laboratory applications. It has a spectral range from 330nm up to 2500nm.

4 = QS or QG cuvettes are manufactured from Quartz Suprasil from Heraeus or Quartz Glass from other manufacturers. This is a synthetic quartz of the highest purity and homogeneity that exhibits excellent chemical resistance and low thermal expansion from 20 to 300 degrees C, while its excellent UV transmission gives it a range down to 200nm and up to 2500nm.

5 = UV, cuvettes marked with this symbol are manufactured from natural crystalline quartz. This is melted and the solidified material machined, ground and polished before the optical windows are fused into cells and cuvettes. This material has a wavelength range from 230 to 2500nm.

7 = QX or Quartz Suprasil 300, this is a synthetic quartz from Heraeus that is free from OH absorption making it suitable for applications in the NIR up to wavelengths in the region of 4000nm. At the 80% transmission level this material has a wavelength range from 200nm up to 3500nm.

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Finish and Beam Height

The current demands for measurements on ever smaller sample volumes has led to greatly reduced cuvette apertures, so selecting the right cuvette for the instrument's beam geometry and cuvette holder can be a complex and often critical task. In some instances misalignment or movement of fractions of a millimetre can lose or re-gain a huge proportion of the signal available. The quality and condition of the cuvette holder becomes hypercritical in these situations and where the light beam is wider than the cuvette aperture a masking plate must be fitted or self-masking (black) cuvettes should be chosen. So if you are using unmasked, reduced aperture cuvettes in a cuvette holder without a masking plate you need to make sure no light is passing through the cuvette without going through the sample.

Micro and ultra-micro cuvettes with very small sample chambers need to be carefully aligned with the instrument light beam, so choosing one with the correct beam height for your instrument is very important. The A to G coding for Finish and Beam Height is self-explanatory and defines self-masking cuvettes as Black and un-masked as Clear. Beam Heights of 15mm and 8.5mm are included but other options are also available on request.

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Path Length in μm with Multiplier

Absorbance and transmission measurements are always made with reference to a 10mm path length so where other path lengths are used suitable factors should be applied to correct results to this reference. Where highly absorbing samples are encountered shorter path lengths should be used to keep readings on-scale and where weakly absorbing samples are encountered longer path lengths used to increase sensitivity.

Cuvettes are commonly supplied with path lengths of 1, 2, 5, 10, 20, 40 and 50mm but standard cuvettes can range from 0.1mm to 100mm while specials outside those limits may be requested.

The second group of four characters in the part number define the path length of that cuvette and can in-fact define any path length from 1micron up to 999 meters!

The base units are in microns, (i.e. 0001 = $1\mu\text{m}$, 0100 = $100\mu\text{m}$ = 0.1mm); beyond 1000 the K (10^3) multiplier is inserted in the place of the decimal point, so 1K00 becomes $1.00 \times 10^3\mu\text{m}$ or 1.00mm. Using the M (10^6) multiplier 1M00 becomes $1.00 \times 10^6\mu\text{m}$ or 1.00 meter and so on to 999M!

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Volume in nl with multiplier

The fill volume of a cuvette reflects the amount of sample required to make a measurement and not necessarily the volume to fill it completely. For most cuvettes for static sampling a fill volume of around 80% is quoted. For flow-through and certain ultra-micro cuvettes the quoted fill volume is actually greater than the chamber volume as additional sample is required to fill the feed tubes to the chamber as well.

The third group of four characters in the part number define the fill volume of that cuvette in a similar manner to the path length. This time the base

units are nano-litres (nl) and using just the K and M multipliers we can define fill volumes up to almost 1 litre and beyond that with the G multiplier.

The base units are in nano-litres, (i.e. 0001 = 1nl, 0100 = 100nl = 0.1 μ l); beyond 1000 the K (10^3) multiplier is inserted in the place of the decimal point, so 1K00 becomes 1.00 x 10^3 nl or 1.00 μ l. Using the M (10^6) multiplier 1M00 becomes 1.00 x 10^6 nl or 1.00ml and so on to 999M or 999ml!

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Top Finish

A number of different lids, stoppers, caps and seals can be fitted to standard cuvettes while various tubing systems can be applied to flow-through cells.

The standard PTFE lid (L) is a simple protective device to protect the sample from airborne contamination and has no sealing properties.

The PTFE stopper (S) is tapered and can form a reasonable seal if firmly pushed down, in this case great care should be taken to ensure expansion of the sample due to temperature increases or freezing do not cause the cuvette to crack. Leave a significant head space to allow expansion and only fit the stopper loosely if these conditions may be encountered, keeping temperature change rates to a minimum.

Two versions of the sealable screw cap are available (M and C). The M version has a screw cap with a hole to give access to the internal silicone seal that will act as a septum through which samples/reactants can be injected or removed. The seal can withstand pressures up to 3bar even after puncture. The C version is a full cap that screws down onto the silicone seal.

For flow-through cuvettes with M6 screw connectors two types of tubing are supplied FEP (F) and PTFE (P) both are 500mm long with one short and one long connector for ease of fitting; fit the short one first.

Alternatively flow-through cuvettes may have short glass tubing for inlet and outlet ports (T) for connection to flexible silicone tubing or similar.