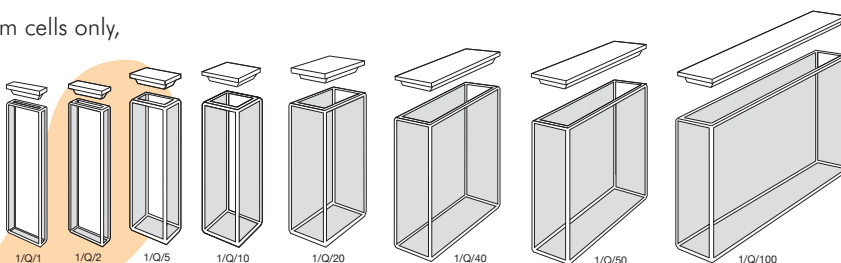


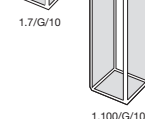
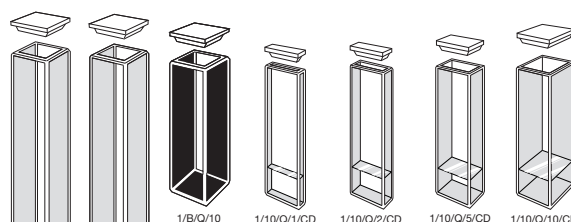
Type 1. Macro/Standard Rectangular with lid, and Reduced Volume with lid

- Open top, with non-sealing PTFE cover.
- Polyethylene vanned lid available on request for 10mm cells only, providing a liquid-tight seal. (see page 28)
- Two polished windows.
- Walls polished internally, fine ground externally.
- Suitable for use with all standard cell holders.
- **Type 1/B** has black side walls.
- **Type 1/10/CD** thick base, reduced sample for CD.

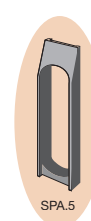


- Cell compartment spacers **SPA** available for 1, 2 & 5mm Path length cells (see page 28).

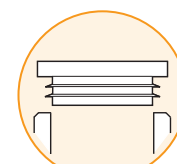
Type No.	Window Materials	Path Length	Internal Width	External L	W	H	Nominal Vol. ml
1	G, SOG, Q, I, SX	1	10	3.5	12.5	45	0.400
1	G, SOG, Q, I, SX	2	10	4.5	12.5	45	0.700
1	G, SOG, Q, I, SX	5	10	7.5	12.5	45	1.700
1	G, SOG, PX, HH, Q, I, SX	10	10	12.5	12.5	45	3.500
1	G, SOG, Q, I, SX	20	10	22.5	12.5	45	7.000
1	G, SOG, Q, I, SX	30	10	32.5	12.5	45	10.500
1	G, SOG, Q, I, SX	40	10	42.5	12.5	45	14.000
1	G, SOG, Q, I, SX	50	9.5	52.5	12.5	45	17.500
1	G, SOG, Q, I, SX	100	9.5	102.5	12.5	45	35.000
1/B	Q	10	10	12.5	12.5	45	3.500
1.7	G	10	10	12.5	12.5	70	6.500
1.100	G	10	10	12.5	12.5	100	10.000
1/10/CD	Q, I	1	10	3.5	12.5	45	0.275
1/10/CD	Q, I	2	10	4.5	12.5	45	0.450
1/10/CD	Q, I	5	10	7.5	12.5	45	1.200
1/10/CD	Q, I	10	10	12.5	12.5	45	2.500



1.100/G/10



SPA.5

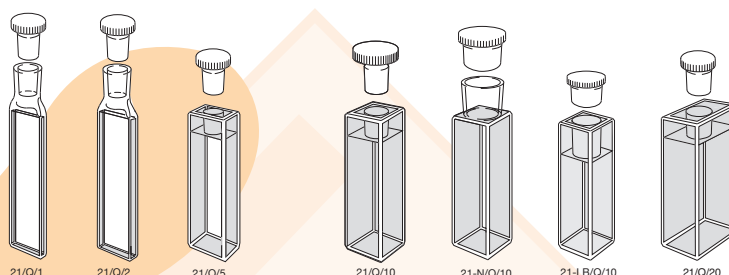


Vanned polyethylene lid
Part No. Lid/1,010V
10mm only

For GL/14 Screw tops, graded seals & straight bore tubes - See pages 11 & 12

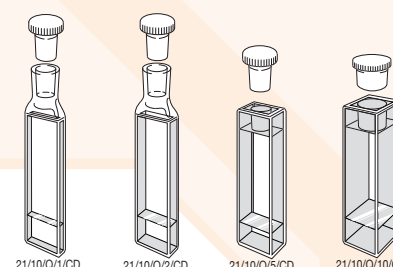
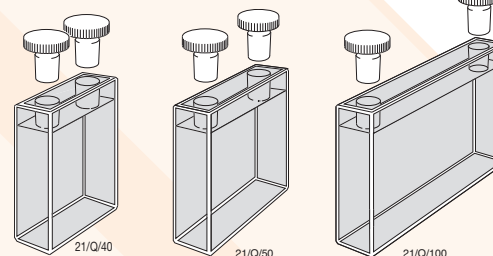
Type 21. Macro/Standard Rectangular with stopper(s), and Reduced Volume with stopper(s)

- Closed by PTFE stopper(s), providing a liquid-tight seal.
- Two polished windows.
- Walls polished internally, fine ground externally.
- Suitable for use with all standard cell holders.
- **Type 21-N** Wide neck.
- **Type 21-LB** With long stopper block.
- **Type 21/10/CD** thick base, reduced sample for CD.



- Cell compartment spacers **SPA** available for 1, 2 & 5mm Path length cells (see page 28).

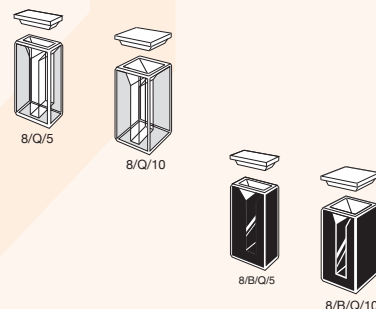
Type No.	Window Materials	Path Length	Internal Width	External L	W	H	Nominal Vol. ml
21	G, SOG, Q, I, SX	1	10	3.5	12.5	55	0.400
21	G, SOG, Q, I, SX	2	10	4.5	12.5	55	0.700
21	G, SOG, Q, I, SX	5	10	7.5	12.5	48	1.700
21	G, SOG, HH, Q, I, SX	10	10	12.5	12.5	48	3.500
21	G, SOG, Q, I, SX	20	10	22.5	12.5	48	7.000
21	G, SOG, Q, I, SX	30	10	32.5	12.5	48	10.500
21	G, SOG, Q, I, SX	40	10	42.5	12.5	48	14.000
21	G, SOG, Q, I, SX	50	9.5	52.5	12.5	48	17.500
21	G, SOG, Q, I, SX	100	9.5	102.5	12.5	48	35.000
21-N	Q	10	10	12.5	12.5	43	3.000
21-LB	Q	10	10	12.5	12.5	42	3.000
21/10/CD	Q, I	1	10	3.5	12.5	55	0.275
21/10/CD	Q, I	2	10	4.5	12.5	55	0.450
21/10/CD	Q, I	5	10	7.5	12.5	48	1.200
21/10/CD	Q, I	10	10	12.5	12.5	48	2.500



Type 8. Semi Micro short

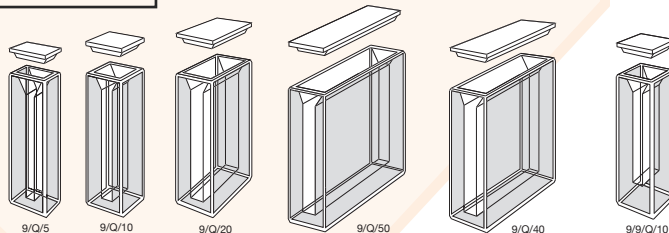
- Open top, supplied with non-sealing PTFE cover.
- Two polished windows.
- Walls polished internally, fine ground externally.

Type No.	Window Materials	Path Length	Internal Width	External L W H	Base Thickness	Nominal Vol. ml
Clear walls						
8	SOG, Q	5	4	7.5 12.5 25	3	0.400
8	SOG, Q	10	4	12.5 12.5 25	3	0.800
Self-masking. Black walls						
8/B	SOG, Q	5	4	7.5 12.5 25	3	0.400
8/B	SOG, Q	10	4	12.5 12.5 25	3	0.800

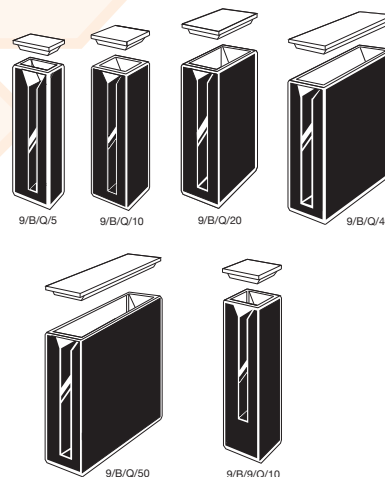


Type 9 & 9/B. Semi-micro with lid

- Reduced nominal volume to <50% of Standard rectangular.
- Open top, supplied with non-sealing PTFE cover.
- Two polished windows.
- Walls polished internally, fine ground externally.
- Suitable for use with all standard cell holders.
- Self-masking solid black walls enhance sensitivity and improve linearity at higher absorbances.

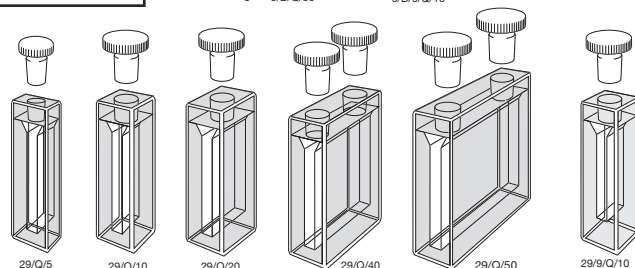


Type No.	Window Materials	Path Length	Internal Width	External L W H	Base Thickness	Nominal Vol. ml
Clear walls						
9	G, SOG, Q, I, SX	5	4	7.5 12.5 45	3	0.700
9	G, SOG, PX, HH, Q, I, SX	10	4	12.5 12.5 45	3	1.400
9	SOG, Q, I, SX	20	4	22.5 12.5 45	3	2.800
9	SOG, Q, I, SX	40	4	42.5 12.5 45	3	5.600
9	SOG, Q, I, SX	50	4	52.5 12.5 45	3	7.000
9	Q, I, SX	100	4	102.5 12.5 45	3	14.00
9/9	SOG, Q, I, SX	10	4	12.5 12.5 45	9	1.160
Self-masking. Black walls						
9/B	SOG, Q, I, SX	5	4	7.5 12.5 45	3	0.700
9/B	SOG, HH, Q, I, SX	10	4	12.5 12.5 45	3	1.400
9/B	SOG, Q, I, SX	20	4	22.5 12.5 45	3	2.800
9/B	SOG, Q, I, SX	40	4	42.5 12.5 45	3	5.600
9/B	SOG, Q, I, SX	50	4	52.5 12.5 45	3	7.000
9/B/9	SOG, Q, I, SX	10	4	12.5 12.5 45	9	1.160

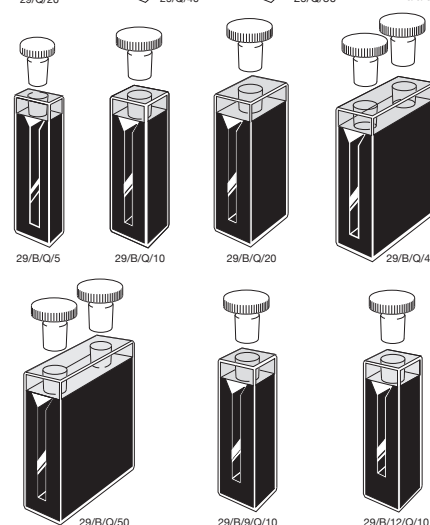


Type 29 & 29/B. Semi-micro with stopper(s)

- Reduced nominal volume to <50% of Standard rectangular.
- Closed by PTFE stopper(s), providing a liquid-tight seal.
- Two polished windows.
- Walls polished internally, fine ground externally.
- Suitable for use with all standard cell holders.
- Self-masking solid black walls enhance sensitivity and improve linearity at higher absorbances.



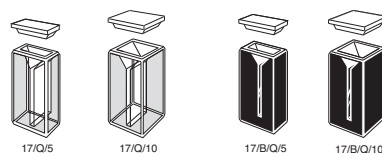
Type No.	Window Materials	Path Length	Internal Width	External L W H	Base Thickness	Nominal Vol. ml
Clear walls						
29	SOG, Q, I, SX	5	4	7.5 12.5 48	3	0.700
29	SOG, PX, HH, Q, I, SX	10	4	12.5 12.5 48	3	1.400
29	SOG, Q, I, SX	20	4	22.5 12.5 48	3	2.800
29	SOG, Q, I, SX	40	4	42.5 12.5 48	3	5.600
29	SOG, Q, I, SX	50	4	52.5 12.5 48	3	7.000
29/9	SOG, Q, I, SX	10	4	12.5 12.5 48	9	1.160
Self-masking. Black walls						
29/B	SOG, Q, I, SX	5	4	7.5 12.5 48	3	0.700
29/B	SOG, HH, Q, I, SX	10	4	12.5 12.5 48	3	1.400
29/B	SOG, Q, I, SX	20	4	22.5 12.5 48	3	2.800
29/B	SOG, Q, I, SX	40	4	42.5 12.5 48	3	5.600
29/B	Q, I, SX	50	4	52.5 12.5 48	3	7.000
29/B/9	SOG, Q, I, SX	10	4	12.5 12.5 48	9	1.160
29/B/12	Q	1	4	12.5 12.5 48	12	0.100
29/B/12	Q	2	4	12.5 12.5 48	12	0.200
29/B/12	Q	5	4	12.5 12.5 48	12	0.500
29/B/12	Q	10	4	12.5 12.5 48	12	1.000



Type 17. Micro short

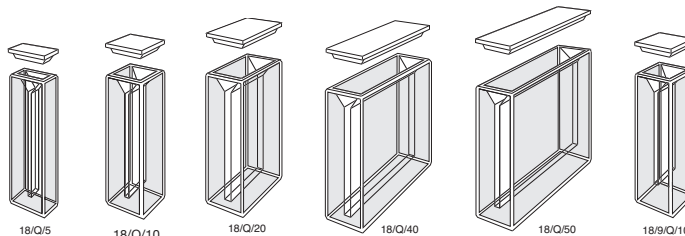
- Two polished windows.
- Open top, supplied with non-sealing PTFE cover.
- Walls polished internally, fine ground externally.
- Base thickness - 3mm.

Type No.	Window Materials	Path Length	Internal Width	External L	W	H	Nominal Vol. ml
Clear walls							
17	SOG, Q	5	2	7.5	12.5	25	0.200
17	SOG, Q	10	2	12.5	12.5	25	0.400
Self-masking. Black walls							
17/B	SOG, Q	5	2	7.5	12.5	25	0.200
17/B	SOG, Q	10	2	12.5	12.5	25	0.400

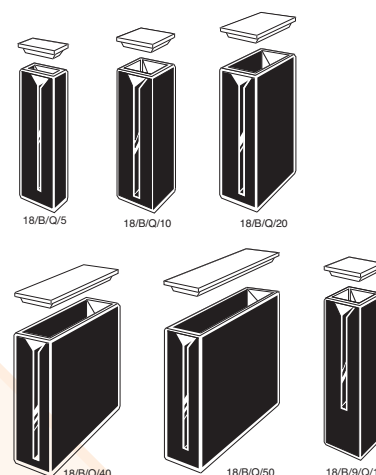


Type 18 & 18/B. Micro with lid

- Reduced nominal volume to <20% of Standard rectangular.
- Open top, with non-sealing PTFE cover.
- Two polished windows.
- Walls polished internally, fine ground externally.
- Suitable for use with all standard cell holders.
- **Self-masking solid black walls** enhance sensitivity and improve linearity at higher absorbances.



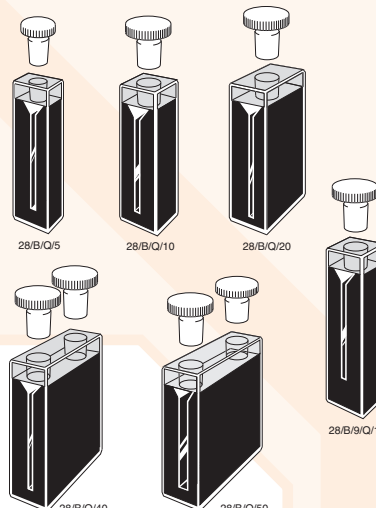
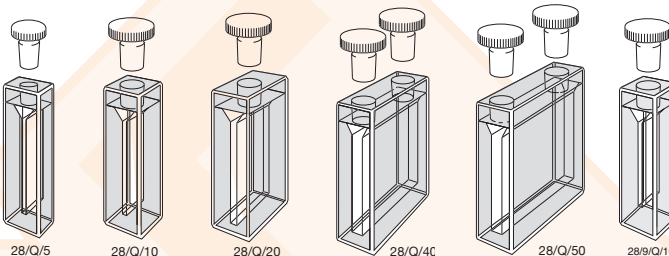
Type No.	Window Materials	Path Length	Internal Width	External L	W	H	Base Thickness	Nominal Vol. ml
Clear walls								
18	SOG, Q, I, SX	5	2	7.5	12.5	45	3	0.350
18	SOG, PX, HH, Q, I, SX	10	2	12.5	12.5	45	3	0.700
18	SOG, Q, I, SX	20	2	22.5	12.5	45	3	1.400
18	SOG, Q, I, SX	40	2	42.5	12.5	45	3	2.800
18	SOG, Q, I, SX	50	2	52.5	12.5	45	3	3.500
18	SOG, Q, I, SX	50	2	52.5	12.5	45	3	3.500
18	Q, I, SX	100	2	102.5	12.5	45	3	7.000
18/9	SOG, Q, I, SX	10	2	12.5	12.5	45	9	0.580
Self-masking. Black walls								
18/B	SOG, Q, I, SX	5	2	7.5	12.5	45	3	0.350
18/B	SOG, HH, Q, I, SX	10	2	12.5	12.5	45	3	0.700
18/B	SOG, Q, I, SX	20	2	22.5	12.5	45	3	1.400
18/B	SOG, Q, I, SX	40	2	42.5	12.5	45	3	2.800
18/B	SOG, Q, I, SX	50	2	52.5	12.5	45	3	3.500
18/B/9	SOG, Q, I, SX	10	2	12.5	12.5	45	9	0.580



Type 28 & 28/B. Micro with stopper(s)

- Reduced nominal volume to <20% of Standard rectangular.
- Closed by PTFE stopper(s), providing a liquid-tight seal.
- Two polished windows.
- Walls polished internally, fine ground externally.
- Suitable for use with all standard cell holders.
- **Self-masking solid black walls** enhance sensitivity and improve linearity at higher absorbances.

Type No.	Window Materials	Path Length	Internal Width	External L	W	H	Base Thickness	Nominal Vol. ml
Clear walls								
28	SOG, Q, I, SX	5	2	7.5	12.5	48	3	0.350
28	SOG, PX, HH, Q, I, SX	10	2	12.5	12.5	48	3	0.700
28	SOG, Q, I, SX	20	2	22.5	12.5	48	3	1.400
28	SOG, Q, I, SX	40	2	42.5	12.5	48	3	2.800
28	SOG, Q, I, SX	50	2	52.5	12.5	48	3	3.500
28/9	SOG, Q, I, SX	10	2	12.5	12.5	48	9	0.580
Self-masking. Black walls								
28/B	SOG, Q, I, SX	5	2	7.5	12.5	48	3	0.350
28/B	SOG, HH, Q, I, SX	10	2	12.5	12.5	48	3	0.700
28/B	SOG, Q, I, SX	20	2	22.5	12.5	48	3	1.400
28/B	SOG, Q, I, SX	40	2	42.5	12.5	48	3	2.800
28/B	Q, I, SX	50	2	52.5	12.5	48	3	3.500
28/B/9	SOG, Q, I, SX	10	2	12.5	12.5	48	9	0.580



Type 15. Sub-micro & Multi-micro, short

- Two polished windows.
- Open top.
- To be used with holder supplied by instrument manufacturer.



15.40/5/Q/5/Z2



15.40/2/Q/10/Z8.5

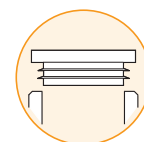
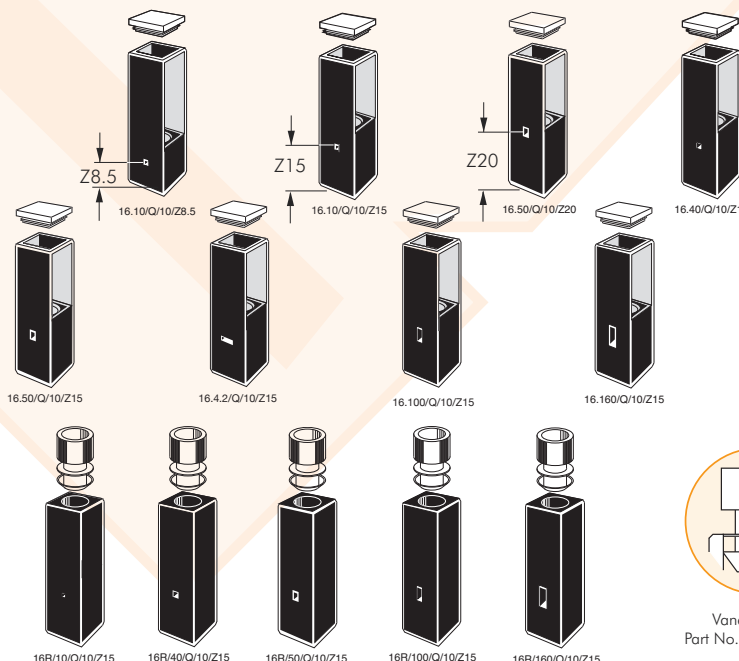


15.30 x 4/Q/10/Z3

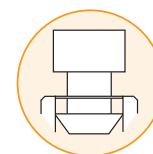
Type No.	Window Material	Path Length	Z Height	Internal W	Internal H	External L	External W	External H	Nominal Vol. ml	Remarks
15.40/5	Q	10	2	2	5	12.5	12.5	8	0.100	Cecil
15.40/4	Q	10	2	2	4	12.5	12.5	10	0.050	Biochrom® (masked 2x2)
15.40/7.5	Q	10	2	2	7.5	12.5	12.5	10	0.160	Shimadzu®
15.40/2	Q	10	8.5	2	2	12.5	12.5	12	0.040	Beckman®
15.30x4	Q	10	3	3	10	36	36	14.5	0.300	Beckman®

Type 16 & 16R. Sub-micro

- Sub-micro volumes from 10µl to 160µl.
- **Type 16** has a top section; comprising two black walls and two translucent side walls with a square internal cross-section.
- Open top, supplied with non-sealing PTFE cover as well as a vaned lid to provide a liquid-tight seal.
- To avoid possible meniscus errors; it may be necessary to increase the nominal sample fill volume by at least 20%.
- Z dimension measurement or instrument information is required when ordering.
- May be used with all standard cell holders.
- Filling and emptying with a pipette is recommended.



Vaned polyethylene lid
Part No. Lid/1.010V



Vaned stopper
Part No. STP/C10.10V

- **Type 16R.** Similar to **Type 16** except that the top section is solid black quartz and round internal cross-section.
- Closed by a vaned polyethylene plug stopper to provide a liquid-tight seal.

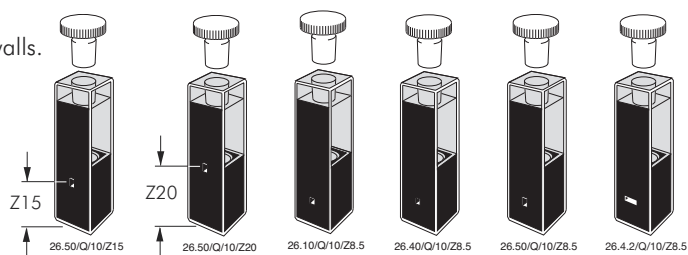
Type No.	Window Material	Path Length	Z Height	Internal W	Internal H	External L	External W	External H	Nominal Vol. ml
Square top, two translucent walls									
16.10	Q	10	8.5, 15, 20	1	1	12.5	12.5	45	0.010
16.40	Q	10	8.5, 15, 20	2	2	12.5	12.5	45	0.040
16.50	Q	10	8.5, 15, 20	2	2.5	12.5	12.5	45	0.050
16.4.2	Q	10	15	4	2	12.5	12.5	45	0.080
16.100	Q	10	8.5, 15, 20	2	5	12.5	12.5	45	0.100
16.160	Q	10	8.5, 15, 20	2	8	12.5	12.5	45	0.160
Square top with round hole, solid black									
16R/10	Q	10	8.5, 15, 20	1	1	12.5	12.5	45	0.010
16R/40	Q	10	8.5, 15, 20	2	2	12.5	12.5	45	0.040
16R/50	Q	10	8.5, 15, 20	2	2.5	12.5	12.5	45	0.050
16R/100	Q	10	8.5, 15, 20	2	5	12.5	12.5	45	0.100
16R/160	Q	10	8.5, 15, 20	2	8	12.5	12.5	45	0.160

Z Dimension per instrument

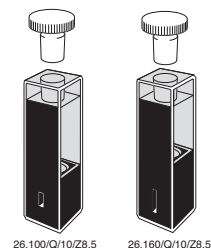
Manufacturer	Z Dimension
Agilent®	15mm
Beckman®	8.5mm
Bio-Rad®	8.5mm
Eppendorf®	8.5mm
GBC®	15mm
Hewlett-Packard®	15mm
Hitachi®	8.5mm
Jasco®	12mm
Perkin-Elmer®	15mm
Pharmacia®	15mm
Scinco®	15mm
Shimadzu®	15mm
Spectronics®	8.5mm
Turner®	8.5mm
Varian® (Cary®/Agilent®)	20mm

Type 26. Sub-micro & Ultra-micro with stopper

- Reduced nominal volume from 10 μ l to 160 μ l.
- Rectangular top section with two black walls and two translucent walls.
- Closed by PTFE stopper, providing a liquid-tight seal.
- To avoid possible meniscus errors; it may be necessary to increase the nominal sample fill volume by at least 20%.
- May also be used with all standard cell holders.
- Z dimension or instrument information required when ordering.
- Filling and emptying with a pipette is recommended.

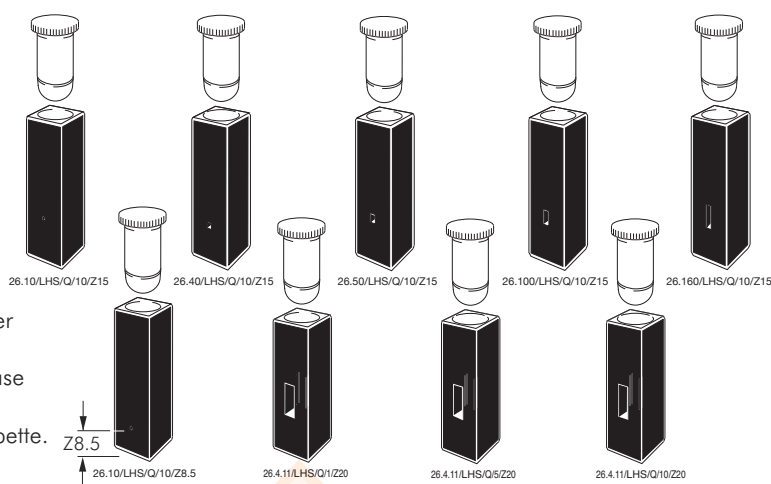


Type No.	Window Material	Path Length	Z Height	Internal W	Internal H	External L	External W	External H	Nominal Vol. ml
26.10	Q	10	8.5, 15, 20	1	1	12.5	12.5	48	0.010
26.40	Q	10	8.5, 15, 20	2	2	12.5	12.5	48	0.040
26.4.2	Q	10	15, 20	4	2	12.5	12.5	48	0.080
26.50	Q	10	8.5, 15, 20	2	2.5	12.5	12.5	48	0.050
26.100	Q	10	8.5, 15, 20	2	5	12.5	12.5	48	0.100
26.160	Q	10	8.5, 15, 20	2	8	12.5	12.5	48	0.160



Type 26/LHS. Sub-micro, low head space

- The cell and liquid-tight stopper are specially designed so the volume of air above the sample is reduced by >95% compared with normal sub-micro cells.
- This reduces evaporation loss of samples such as DNA to a minimum.
- Reduced nominal volume range from 10 μ l to 440 μ l.
- Round internal solid black top closed by a specially profiled PTFE stopper. Spare stoppers, **see page 28**.
- Part No. STP/C10.LHS/Z8.5 or STP/C10.LHS/Z15/20
- Quartz stoppers available to avoid condensation errors at higher temperatures (see page 28)
- To avoid possible meniscus errors; it may be necessary to increase the nominal sample fill volume by at least 20%.
- Sample may be introduced and retrieved by syringe or micro pipette.
- Z dimension or instrument information required when ordering.



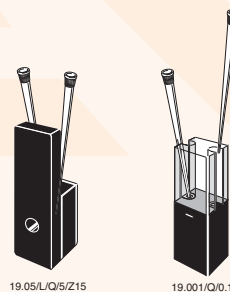
Type No.	Window Material	Path Length	Z Height	Internal W	Internal H	External L	External W	External H	Nominal Vol. ml
26.10/LHS	Q	10	8.5, 15, 20	1	1	12.5	12.5	48	0.010
26.40/LHS	Q	10	8.5, 15, 20	2	2	12.5	12.5	48	0.040
26.50/LHS	Q	10	8.5, 15, 20	2	2.5	12.5	12.5	48	0.050
26.100/LHS	Q	10	8.5, 15, 20	2	5	12.5	12.5	48	0.100
26.160/LHS	Q	10	8.5, 15, 20	2	8	12.5	12.5	48	0.160
26.4.11/LHS	Q	1	20	4	11	12.5	12.5	48	0.044
26.4.11/LHS	Q	5	20	4	11	12.5	12.5	48	0.220
26.4.11/LHS	Q	10	20	4	11	12.5	12.5	48	0.440

Z Dimension per instrument

Manufacturer	Z Dimension
Agilent®	15mm
Beckman®	8.5mm
Bio-Rad®	8.5mm
Eppendorf®	8.5mm
GBC®	15mm
Hewlett-Packard®	15mm
Hitachi®	8.5mm
Jasco®	12mm
Perkin-Elmer®	15mm
Pharmacia®	15mm
Scinco®	15mm
Shimadzu®	15mm
Spectronics®	8.5mm
Turner®	8.5mm
Varian® (Cary®/Agilent®)	20mm

Type 19 Ultra-micro & 19/L Ultra-micro lens cell

- Ultra-micro volume range from 0.5 μ l to 10 μ l.
- Two polished windows.
- Sample inserted and retrieved with micro pipette tip.
- Two micro pipette tips provided with each cell.
- Type 19/L** is a patented design with integral focusing lens. Which increases the energy entering the sample. Performance is dictated by instrument optical configuration.
- Type 19/L** is not suitable for all instruments.
- Type 19/L Z 8.5*** has an External height of 38.5mm
- Z dimension or instrument information required when ordering.**



Type No.	Window Material	Path Length	Z Height	Internal W	Internal H	External L	External W	External H	Nominal Vol. ml
19.001	Q	0.1	8.5, 15, 20	5	1	12.5	12.5	45	0.0005
19.01	Q	1	8.5, 15, 20	5	1	12.5	12.5	45	0.0050
19.05	Q	5	8.5, 15, 20	0.8Ø		12.5	12.5	45	0.0025
19.10	Q	10	8.5, 15, 20	0.8Ø		12.5	12.5	45	0.0050
19.05/L	Q	5	8.5*, 15, 20	1	1	12.5	12.5	45	0.0050

