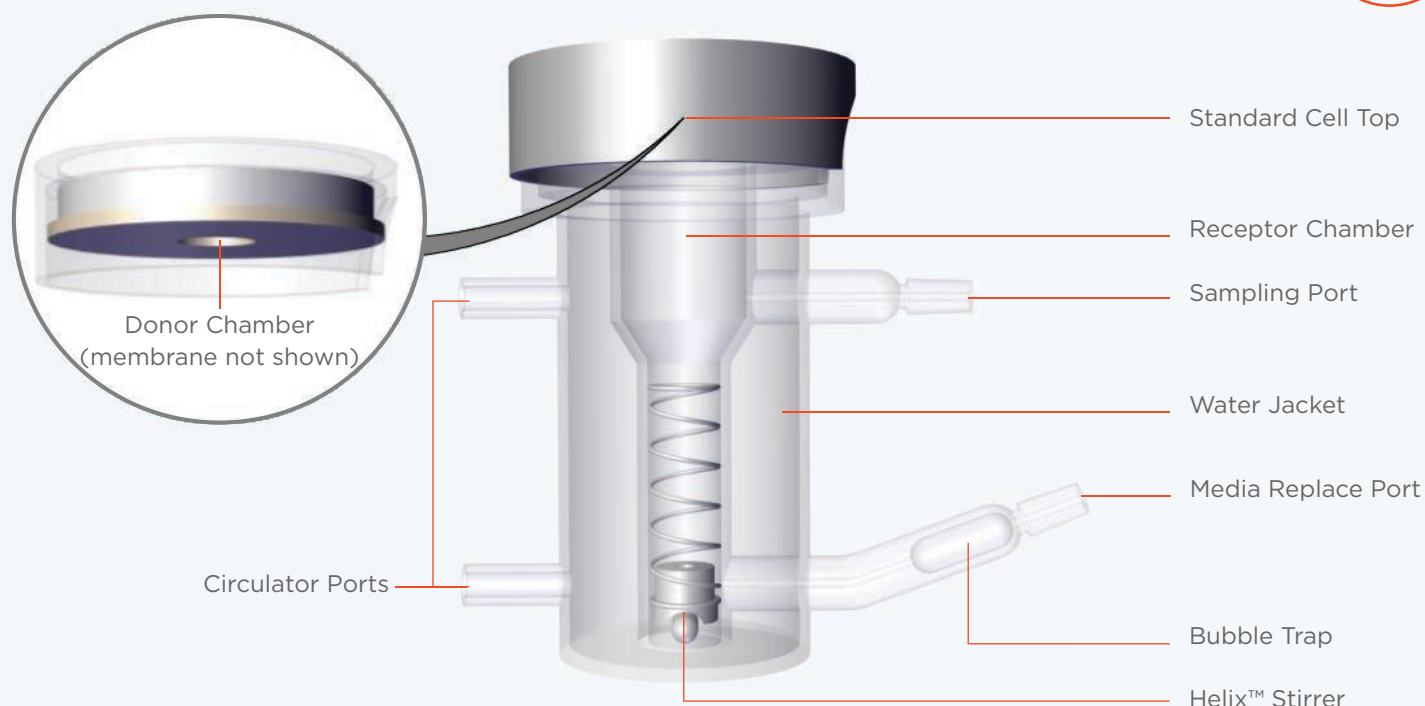


The **Hanson Vertical Diffusion Cell (VDC)** is an ideal tool for the study, development, and quality control of topical preparations. Made of inert borosilicate glass, the VDC is designed for accuracy and ease of use with over thirty years of rigorous industry, university, and regulatory application and collaboration. Hanson VDCs are compatible with a number of membrane types including synthetic, animal skin, cadaver skin, and Strat-M® membranes. Hanson VDCs include individualized serial numbers and are readily available in three convenient sizes.

HANSON VDC

(STANDARD CELL TOP INCLUDED WITH EACH HANSON VDC)

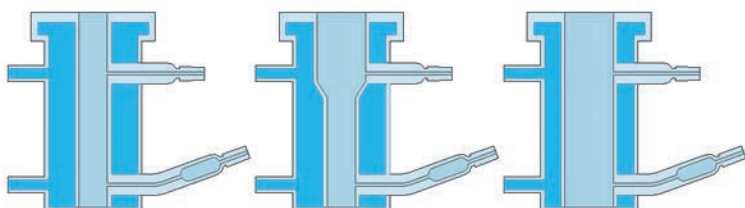


FEATURES:

- Ideal for topical and transdermal drug delivery formulations, ophthalmics, cosmetics, skin care products, and pesticides
- “Occluded” design seals the donor from air to minimize any back-diffusion from sampling
- Water jacket covers entire receptor chamber for temperature consistency
- Bubble Trap catches bubbles before they enter VDC and affect the diffusion rate
- Circulator ports provide connections to ensure cell-to-cell temperature uniformity
- Shorter sampling port reduces dead volume
- Clamp Assembly holds the cell top in place while providing even cell-top pressure
- Purchase of a Hanson VDC includes Standard Cell Top and Clamp Assembly
- Automated sampling capability with the Vision® Microette™ diffusion test system
- USP <1724> compliant

HANSON VDC COLORS & SIZES

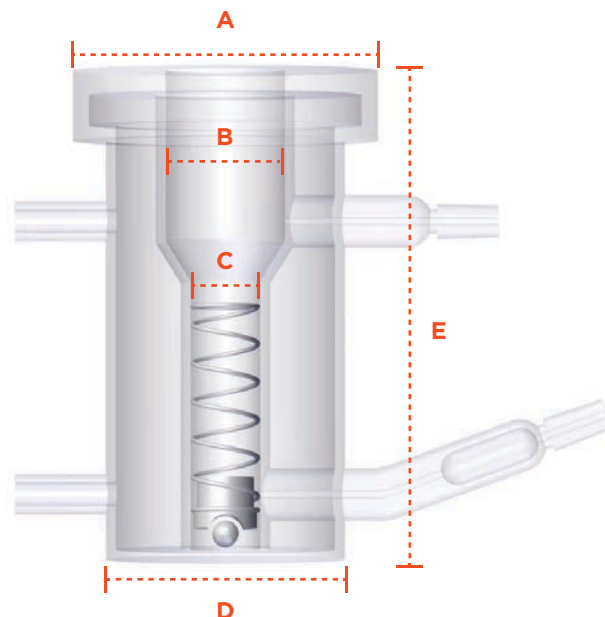
Hanson VDCs are available in the three standard sizes below in amber or clear glass, or in custom sizes upon request. The 7 mL “Standard” VDC is recommended by the US FDA for topicals.



4 mL “Small”

7 mL “Standard”

12 mL “Large”



| | Cell Type | | |
|----------|-----------|-------|-------|
| | 4 mL | 7 mL | 12 mL |
| A | 38 mm | 38 mm | 38 mm |
| B | 9 mm | 15 mm | 15 mm |
| C | 9 mm | 9 mm | 15 mm |
| D | 30 mm | 30 mm | 30 mm |
| E | 61 mm | 61 mm | 61 mm |

ORDERING INFORMATION

For more information, please contact your local Hanson representative or email us at sales@hansonresearch.com

VERTICAL DIFFUSION CELLS (VDC)

(includes Standard Cell Top, Helix Kit, and Clamp Assembly)

- 58-001-451** Vertical Diffusion Cell, 9 mm orifice, 4 mL vol, “Small”
- 58-001-452** Vertical Diffusion Cell, 9 mm orifice, 4 mL vol, Amber, “Small”
- 58-001-455** Vertical Diffusion Cell, 15 mm orifice, 7 mL vol, “Standard”
- 58-001-456** Vertical Diffusion Cell, 15 mm orifice, 7 mL vol, Amber, “Standard”
- 58-001-459** Vertical Diffusion Cell, 15 mm orifice, 12 mL vol, “Large”
- 58-001-460** Vertical Diffusion Cell, 15 mm orifice, 12 mL vol, Amber, “Large”

VDC SPARE PARTS

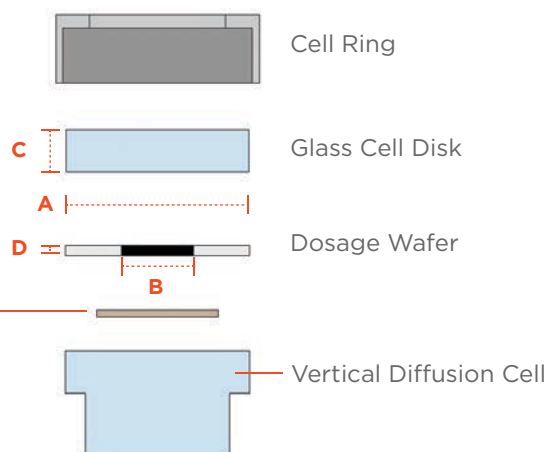
- 58-001-450** Clamp Assembly
- 58-001-467** Helix Kit (for 4 mL and 7 mL VDCs)
- 58-001-468** Helix Kit (for 12 mL VDCs)
- 58-001-453** Vertical Diffusion Cell, 4 mL, Clear (cell only)
- 58-001-454** Vertical Diffusion Cell, 4 mL, Amber (cell only)
- 58-001-457** Vertical Diffusion Cell, 7 mL, Clear (cell only)
- 58-001-458** Vertical Diffusion Cell, 7 mL, Amber (cell only)
- 58-001-461** Vertical Diffusion Cell, 12 mL, Clear (cell only)
- 58-001-462** Vertical Diffusion Cell, 12 mL, Amber (cell only)

STANDARD CELL TOP

The Standard Cell Top is included with a Hanson VDC. It is occluded to minimize back diffusion during the sampling process. A membrane is applied to one side of the dosage wafer, and the dosage is applied to the opposite side in the donor chamber. This cell top is best used for viscous materials such as creams, ointments, and gels.



STANDARD CELL TOP COMPONENTS



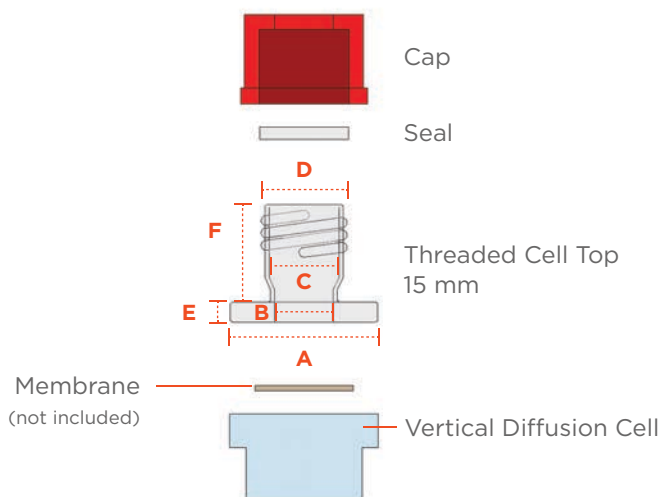
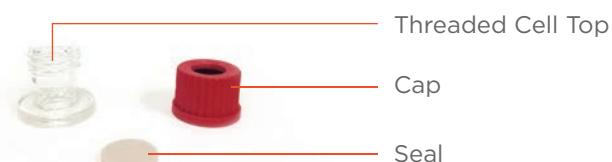
| | Cell Type | | |
|----------|-----------|--------|--------|
| | 4 mL | 7 mL | 12 mL |
| A | 38 mm | 38 mm | 38 mm |
| B | 9 mm | 15 mm | 15 mm |
| C | 4 mm | 4 mm | 4 mm |
| D | 1.5 mm | 1.5 mm | 1.5 mm |

OPEN CELL TOP WITH CAP

The Open Cell Top with Cap is easily adaptable to the Hanson VDC. The cap can be removed between sampling time points to add or remove material. It is best used for less viscous materials because the cell top can be assembled prior to applying the dose. The larger donor chamber also allows more donor material to be used.



OPEN CELL TOP WITH CAP COMPONENTS



| | Cell Type | | |
|----------|-----------|-------|-------|
| | 4 mL | 7 mL | 12 mL |
| A | 38 mm | 38 mm | 38 mm |
| B | 9 mm | 15 mm | 15 mm |
| C | 9 mm | 18 mm | 18 mm |
| D | 12 mm | 22 mm | 22 mm |
| E | 6 mm | 6 mm | 6 mm |
| F | 30 mm | 30 mm | 30 mm |

CUSTOM APPLICATIONS

Novel dosage forms are being researched everyday throughout various scientific industries. Hanson Research's team of development engineers can design special cells and cell tops to accommodate custom applications such as in-situ fiber optics, non-viscous dosage forms, permeation through fingernails and toenails, iontophoresis and much more. Hanson can support your unique application.



ORDERING INFORMATION

For more information, please contact your local Hanson representative or email us at sales@hansonresearch.com

STANDARD CELL TOP SPARE PARTS

- | | |
|-----------------------------------|---|
| 58-001-507 Cell Ring | 58-001-518 Dosage Wafer, 9 mm (for 4 mL VDCs) |
| 58-001-506 Glass Cell Disk | 58-001-521 Dosage Wafer, 15 mm (for 7 mL and 12 mL VDCs) |

OPEN CELL TOPS

- 58-001-530** Open Cell Top w/ Cap, 9 mm, Glass (2 mL capacity; for 4 mL VDCs)
- 58-001-548** Open Cell Top w/ Cap, 9 mm, Glass, Amber (2 mL capacity; for 4 mL VDCs)
- 58-001-531** Open Cell Top w/ Cap, 15 mm, Glass (6 mL capacity; for 7 mL and 12 mL VDCs)
- 58-001-549** Open Cell Top w/ Cap, 15 mm, Glass, Amber (6 mL capacity; for 7 mL and 12 mL VDCs)

SPECIAL APPLICATION CELLS & CELL TOPS

* Special Order: min order 6

- 58-001-471*** Cell Top, Finger/Toe Nail Holder, 10 mm, PEEK (cell not included)
- 58-001-472*** Cell, Fiber Optic Diffusion, 15 mm (Fiber Optic Probe not included)
- 58-001-473*** Cell, Fiber Optic Diffusion, 15 mm, Amber (Fiber Optic Probe not included)
- 58-001-707*** Cell Top Kit, Iontophoresis, 9 mm (set/6) (for 4 mL VDCs; cell not included)
- 58-001-708*** Cell Top Kit, Iontophoresis, 9 mm (set/6) (for 7 mL and 12 mL VDCs; cell not included)
- 58-001-571** Patch Support (replaces Glass Cell Disk and Dosage Wafer to allow for air circulation at top of the patch)