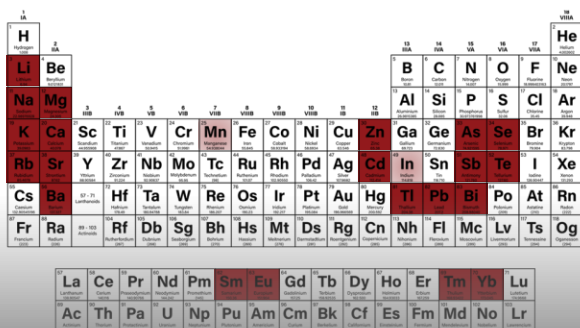


LTEC

Low Temperature Effusion Cell

Design	LTEC
Heater	Ta wire, PBN insulator Regular/hot lip/dual filament options
Flange Sizes	2.75" (DN40CF), 4.5" (DN63CF), Larger sizes on request
Temperature range	75-1100 °C (max temp may be limited due to crucible material choice)
Outgassing temperature	1200 °C
Bakeout temperature	250 °C
Thermocouple	Type K (Type C on request)
UHV dimensions	See table below
Crucible	PBN standard, other options available
Cables	200 °C bakeable, 20 ft
Option: Cooling	Integrated or separate water-cooling shroud Water requirements: 5-15 °C, 1 l/min flow rate
Option: shutter	Integrated rotary Ta shutter blade, manual or pneumatic

Suggested for evaporation of the following elements



VolkVac Instruments' LTEC is optimized for evaporation of moderately high vapor pressure material. Common examples are alkali and alkaline earth metals as well as topological material like Cd, Te, Bi, Pb and other.

The design of the Ta wire heater and radiation shielding inside the LTEC is optimized for stable temperature control (± 0.1 °C, depending on PID controller used) in the 75-1100 C range. The filament can come in regular, hot lip and dual filament winding configurations.

The most common crucible material is PBN due to its chemical inertness, low vapor pressure and clean outgassing in UHV as well as high thermal shock resistance. However, other crucible materials may be appropriate based on the required application. Please consult VolkVac for recommendations.

Majority of application do well with cylindrical crucible geometry ($\sim 1^\circ$ wall taper) but conical crucibles ($\sim 10^\circ$ wall taper) are available on request. Please consult VolkVac for recommendations.

LTECs can be supplied with an integrated water-cooling shroud, or as bare evaporators if customer already has a cooling shroud in place. Most evaporators can also be fitted with an integrated rotatable shutter, with manual or compressed air actuation. See table below for options.

To deal with loading highly air-sensitive materials (such as alkali metals) into the chamber, a convenient solution is to use an evaporator retraction unit (ERU) along with the effusion cell such as LTEC-275WCS-10. Ask VolkVac for more information.



LTEC-275WC-10

Please consult VolkVac about your required deposition rates to ensure optimal evaporator selection.

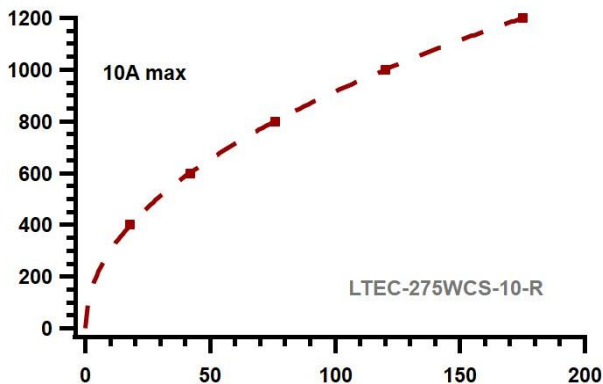
Dimensions and options

Specify UHV length L upon quotation request (minimum lengths for each evaporator are listed). Standard shutter-to-orifice distance SD is 10 mm. All thermocouples are type K and crucibles are cylindrical PBN. Conical PBN crucibles and specialty material crucible are also available.

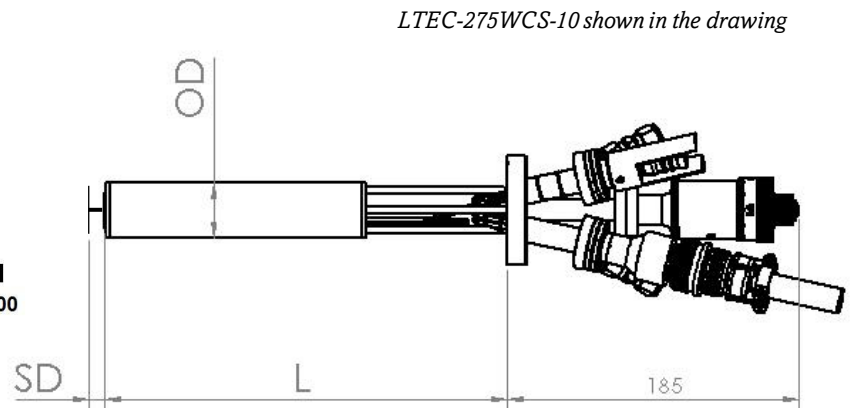
Cylindrical PBN crucible sizes: 1.5, 10, 25, 35, 40, 60, 85, 125 cm³

Conical PBN crucible sizes: 5, 8, 12, 16, 60, 80 cm³

Part Number	CF Flange Size	Integrated water cooling?	Can integrate shutter?	Crucible volume (cm ³)	Filament options	Vacuum dimensions ODxL _{min} (mm)
LTEC-275S-1	40		Yes	1.5	R	35x175
LTEC-275WCS-1	40	Yes	Yes	1.5	R	35x175
LTEC-275S-10	40		Yes	10	R, HL, D	35x200
LTEC-275WCS-10	40	Yes	Yes	10	R, HL, D	35x200
LTEC-275S-25	40		Yes	25	R, HL, D	38x200
LTEC-275S-35	40		Yes	35	R, HL, D	38x225
LTEC-275-40	40			40	R, HL, D	38x225
LTEC-275-60	40			60	R, HL, D	38x225
LTEC-450S-35	63		Yes	35	R, HL, D	57x200
LTEC-450WCS-35	63	Yes	Yes	35	R, HL, D	57x200
LTEC-450S-60	63		Yes	60	R, HL, D	57x200
LTEC-450WCS-60	63	Yes	Yes	60	R, HL, D	57x200



Typical LTEC-275WC-10 Power-Temperature curve, R filament.



LTEC-275WCS-10 shown in the drawing