



Caburn-MDC now provides 600µm fibre optic feedthroughs and accessories which allow fibre optic connections from inside a vacuum system to external instrumentation or energy sources. These high temperature fibre optic products are ideally suited for UHV service in medical, industrial and research applications. UHV fibre optic cable is cleaned and prepared for ultrahigh vacuum service. It is bakeable to 200°C and constructed only from silica and copper. Available in UV or IR

specifications these cables and feedthroughs come complete with SMA-905 connectors or polished and capped ends. The pure silica core provides very low loss and good immunity to radiation damage. Fibres are coated with a layer of copper which gives added strength and high temperature service capabilities. These fibres offer an extended transmission range when compared to conventional silica fibres and are commonly referred to as “Dry” or “Low OH” silica.

Features

- UHV-compatible materials
- High-temperature rated to 200°C
- Multimode step index fibre
- High-purity synthetic silica
- SMA-905 connector interface
- Brazed seals prevent outgassing
- Doped silica cladding
- Copper metal coating
- Maximum intensity of transmitted power, using a Nd-YAG laser is 100kw/cm² in continuous wave mode and 500kw/cm² in pulses < 1µs
- Feedthrough transmission loss 2db typical

Specifications

Transmission range

| | |
|----|-----------------|
| UV | 180nm to 1200nm |
| IR | 500nm to 2600nm |

Attenuation Typical spot values

| | | |
|----|----------------------|------------|
| UV | 248nm, KrF laser | <1.2 dB/m |
| | 308nm, XeCl laser | <0.26 dB/m |
| IR | 1.06µm, Nd-YAG laser | <0.01 dB/m |

Bend radius

| | |
|------------|--------------------|
| Short term | 40 x Fibre radius |
| Long term | 200 x Fibre radius |

Numerical aperture

0.22 ± 0.02

Materials

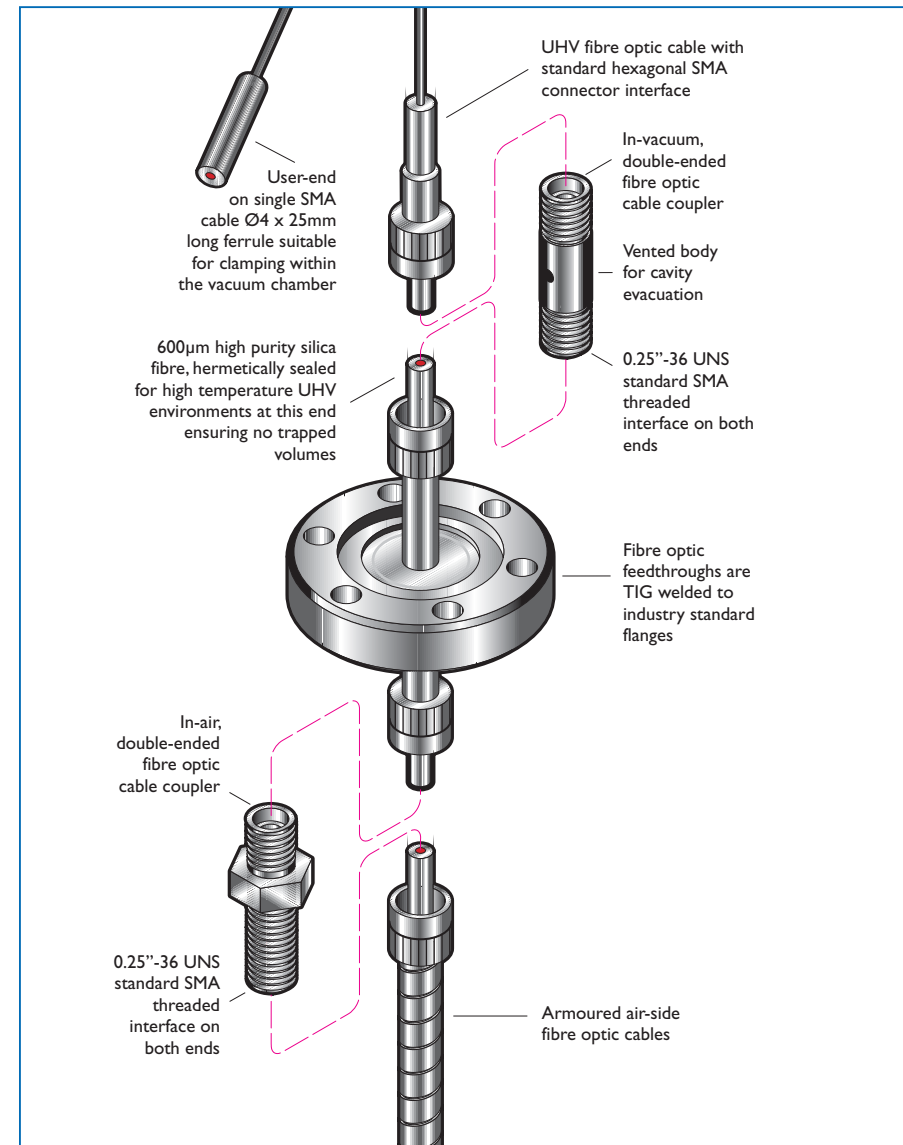
| | |
|------------------------|---|
| Core | 600µm diameter high purity synthetic silica |
| Cladding | 618µm ± 31µm diameter doped silica |
| Core to cladding ratio | 1:1.06 |
| Coating | Copper 165µm ± 65µm thickness |

Vacuum range UHV/HV 1x10⁻¹⁰/1x10⁻⁸ mbar

Temperature range¹

| | |
|----------------------|---------------|
| Feedthrough | 200°C |
| Cable, copper coated | -196 to 200°C |

¹ Overall assembly ratings must be adjusted to that of the lowest rated component



FFT-IR600-C16



FFT-UV600-C40



FFT-IR600-K16

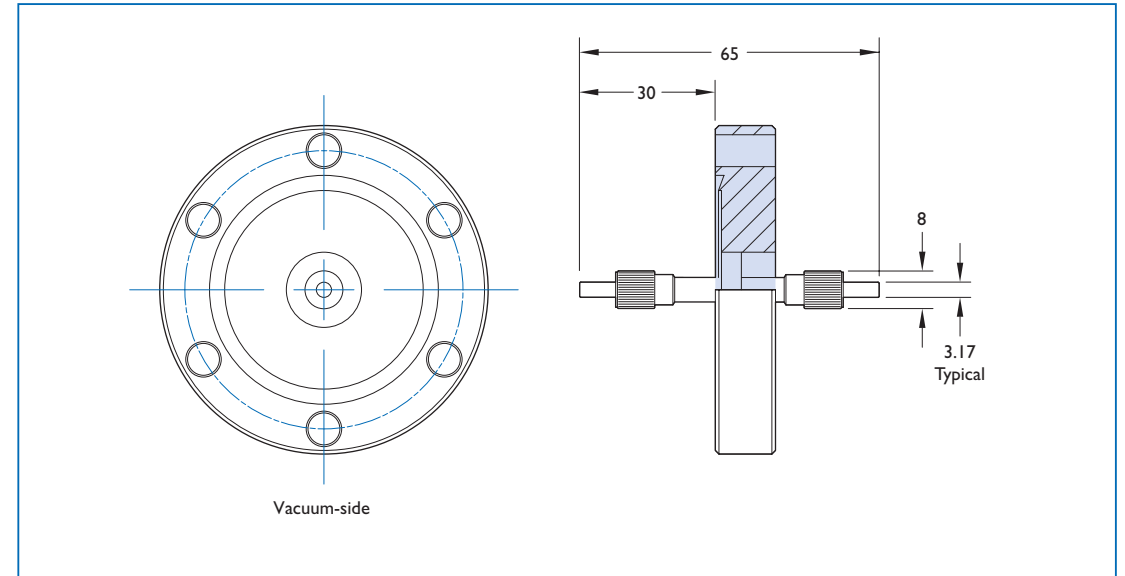


FFT-UV600-K40



UHV UV and IR fibre optic feedthrough

| Fibre mount | Flange | Reference | Part number | £ | € | SFr. |
|-------------|--------|---------------|-------------|-----|-----|------|
| UV | DN16CF | FFT-UV600-C16 | 1513409 | 373 | 587 | 932 |
| UV | DN40CF | FFT-UV600-C40 | 1513404 | 379 | 597 | 947 |
| IR | DN16CF | FFT-IR600-C16 | 1513407 | 360 | 567 | 900 |
| IR | DN40CF | FFT-IR600-C40 | 1513402 | 366 | 576 | 915 |



HV UV and IR fibre optic feedthrough

| Fibre mount | Flange | Dimension A | Reference | Part number | £ | € | SFr. |
|-------------|--------|-------------|---------------|-------------|-----|-----|------|
| UV | DN16KF | 29 | FFT-UV600-K16 | 1513410 | 373 | 587 | 932 |
| UV | DN40KF | 31 | FFT-UV600-K40 | 1513405 | 379 | 597 | 947 |
| IR | DN16KF | 29 | FFT-IR600-K16 | 1513408 | 360 | 567 | 900 |
| IR | DN40KF | 31 | FFT-IR600-K40 | 1513403 | 366 | 576 | 917 |

