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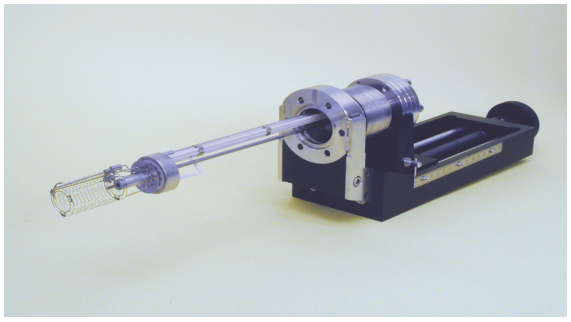
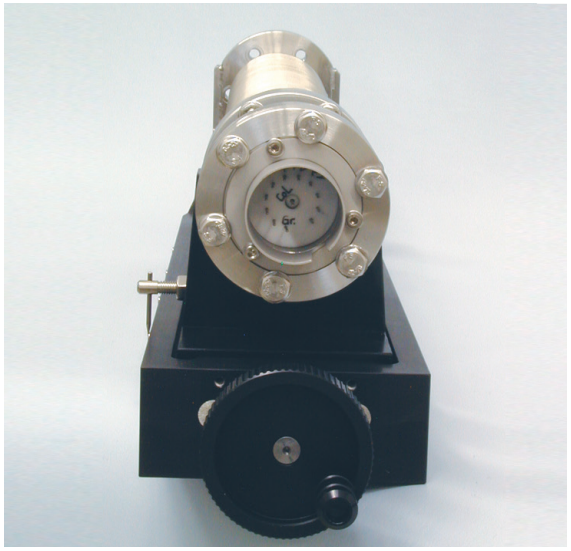
BEAM FLUX MONITOR BFM

- Bayard-Alpert type ionization gauge
- Compatible with AML and PVCi gauge controllers
- Mounting flange DN40CF (O.D. 2.75")
- Linear gauge head positioning
- Standard linear travel 150mm or 250mm
- Bakeable up to 250°C

BFM 40-250 on DN40CF (O.D. 2.75") with edge-welded bellows and linear travel 250mm



BFM 40-150 in fully extended position, with gauge head shielding parts removed



BFM 40-250, air side view onto electrical feedthrough

In many MBE applications the beam equivalent pressure (BEP) of the atomic or molecular beams from effusion cells can be used to determine flux ratios and growth rates near or at the sample position. The Beam Flux Monitor BFM was designed and optimized for this purpose.

The basic component of the BFM is a Bayard-Alpert type ionization gauge that is mounted on a linear motion z-shift with edge-welded bellows. Its design includes the shielding of the gauge head inhibiting contamination of a substrate behind the gauge head during flux monitoring. By means of the linear z-shift, the gauge can be moved between measurement and standby position.

All BFM beam flux monitors are designed to be pin-compatible with ion gauge controllers of the PGC-series from AML or similar. The electrical 12-pin feedthrough of the BFM mates with a standard AML gauge head connection cable. For other controllers inquire for compatibility.

As standard, BFM Beam Flux Monitors are mounted on a DN40CF (O.D. 2.75") flange. Two different linear travels of 150mm or 200mm are available. Custom travels are available upon request.

The BFM series is compatible with most MBE systems by Riber, VG Semicon, Eiko, DCA, Veeco or Omicron. Usually a DN40 CF port about 20mm below the sample position with an I.D. of 38mm is required.

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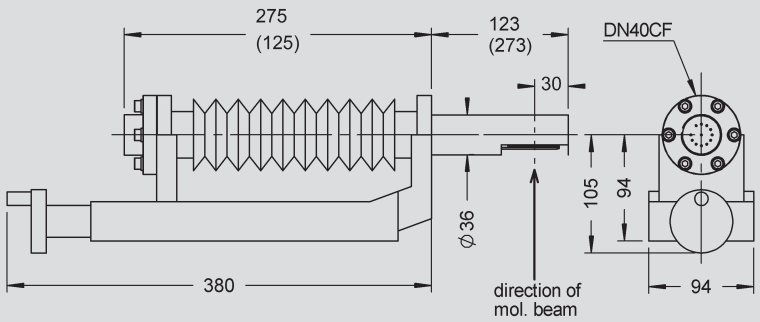
Applications

Typical applications for the BFM beam flux monitor are:

- flux calibration of effusion cells vs. source temperature
- fast check of flux ratios from different sources before growth (e.g. As/Ga in III-V MBE)

Technical Data

Mounting flange	DN40CF (O.D. 2.75") [mm / inch]; port I.D. >= 38mm
Dimensions	(L x W x H) 380 x 94 x 105 mm (BFM 40-150)
Linear travel	150mm or 250 mm, others on request
Bakeout temperature	up to 250°C
Controller	AML PGC-series or similar, others (e.g. Granville-Phillips) on request
Electrical connectors	pin-compatible with AML controller cables
Measurement range	10^{-3} mbar to $4x10^{-11}$ mbar total pressure or BEP
Degas principle	electron bombardment
Options	z-drive motorization with DC motor and gear box (M)



Schematic drawing of the Beam Flux Monitor BFM
(Drawing shows BFM 40-150)

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