

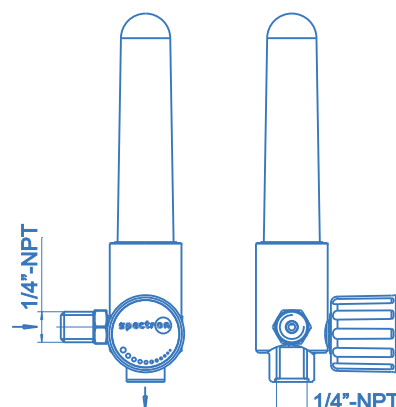
Flowmeter FLE 32

spectro**cem**



Flowmeter FLE 32

Connections



Product features

- Flowmeter for use on pressure regulators with all high-purity gases up to quality 6.0
- Flowmeter for exact adjustment and indication of the flow rate
- Laboratory-style design
- Ergonomical and compact design
- With integrated control valve
- Suitable for corrosive gases (not for ammonia)

Technical data

Inlet pressure	1,4 or 4 bar resp.
Materials	
Body:	SS 1.4404 (SS 316 L)
Soft goods:	Viton (FKM)
Flowmeter:	glass
Outer tube:	Polycarbon
Control spindle:	Stainless steel
Connectors	
Inlet:	1/4"-18 NPT-M
Outlet:	1/4"-18 NPT-F
Temperature range	-30°C to +60°C
Leak rate (to atmosphere)	1x10 ⁻⁶ mbar l/s He
Weight	0,4 kg

Table of flow rates for FLE32 with %-scale at 1,4 bar and 4 bar resp. Flow rates at full scale (blue figures for a calibrating pressure of 1,4 bar)

Inlet pressure (bar gauge) [bar]	l/h nitrogen at a calibrating pressure	
	4 bar	1,4 bar
0,5	164	237
1	190	274
1,4	208	300
2	232	-
2,5	251	-
3	268	-
3,5	285	-
4	300	-

Flow rate for gas type nitrogen

With an outlet pressure of 1,4 bar set at the pressure regulator the control valve is opened until the top of the ball is level with the 100% mark on the metering glass. Now 300 l/h N₂ flow through the flowmeter. At 50 % this means 150 l/h etc. The setting should not be below the 10% mark.

For Outlet pressure values P_{SOLL} below the calibrating pressure P_{KAL} the 100%-flow rate may be calculated using **Equation a)**, where the pressure values must be applied in **absolute pressure** values .

$$\text{Equation a) } Q = f_1 \times Q_{100\%}$$

$$\text{with } f_1 = \sqrt{\frac{P_{SOLL}}{P_{KAL}}}$$

P ⇔ absolute

Flow rate for other gas types

For other gas types the 100%-flow rate for the applicable outlet pressure and calibrating pressure can be calculated from the N₂ flow rate using **Equation b)**.

$$\text{Equation b) } Q = f_2 \times Q_{N_2}$$

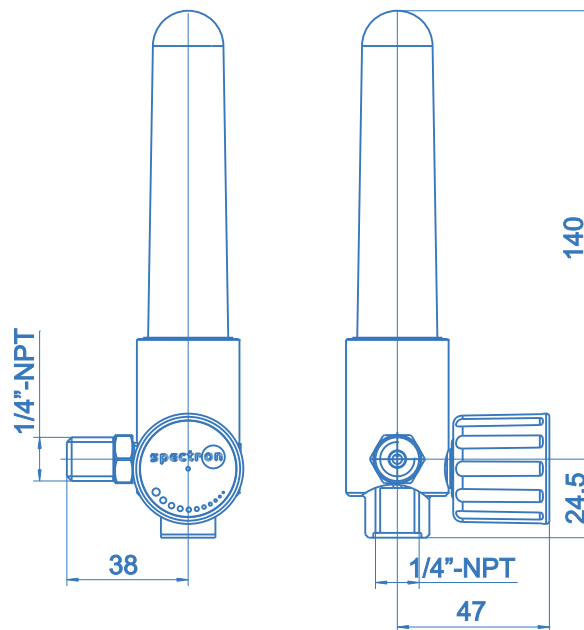
The **factor f₂** (see table) can be calculated using

$$f_2 = \sqrt{\frac{\text{density}_{\text{reference gas}}}{\text{density}_{\text{process gas}}}}$$

where density_{reference gas} is the density of nitrogen (1.250 kg/m³).

factor f ₂			
synth. air	0.98	argon	0.84
CO ₂	0.80	hydrogen	3.73
methane	1.32	helium	2.65
oxygen	0.94		

Dimensions



Ordering information: Flowmeter FLE 32

FLE 32 - 1,4

Series

FLE 32 - Flowmeter FLE 32

Calibrating pressure

1,4 - 1,4 bar
4 - 4 bar

Specifications

- SPECTROCEM - components guarantee maximum quality by using high grade materials and a quality assurance program acc. to ISO 9001.
- All components which come into contact with the medium are cleaned in an ultrasonic cleaning system (CFC-free) with the special cleaning process SPECTRO-CLEAN® and are then baked out.
- SPECTROCEM - components undergo a 100% Helium-leak-test.

Important note regarding component selection

- In order to assure safe operation it is essential to take the configuration of the whole system into account when selecting a control valve.
- The function of the valve, the compatibility of the materials, correlating temperature ranges, correct installation, operation and maintenance in accordance with the relevant regulations are the responsibility of the system designer and the user.