

REDLINE

- technical information

Specification of Materials

Shower outlet	Brass/PP or PPO
Stand pipe	Stainless steel (AISI 304) or brass
Rubber cups	EPDM
Dust caps	POM
Bowl	Stainless steel (AISI 304)

Available in chemical resistant "BROEN Polycoat" (polyester powder coating) or "Stanniloy" plating (a highly anti-corrosive treatment based on a tin/nickel alloy).

Min. Working Pressure (dynamic)

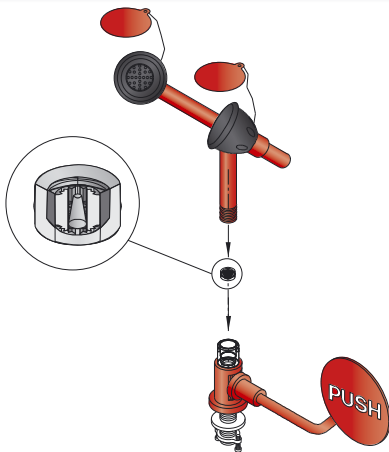
(If not stated other wise)

kPa	kN/m ²	bar	psi
100	100	1	14.5

Max. Working Pressure

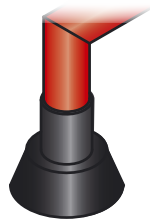
kPa	kN/m ²	bar	psi
1000	1000	10	145

FLOWFIX



FLOWFIX is a feature that is built into most of BROEN's eye baths and hand/eye showers. FLOWFIX is a water regulating device, that controls the water flow at a preset rate regardless of water pressure. The minimum pressure must however be at 1 bar dynamic pressure.

Self-draining Shower Head

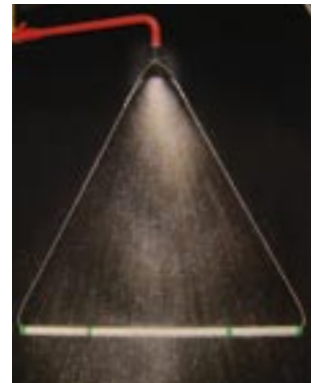


BROEN has developed a new self-draining shower head for the REDLINE series, that complies to both the DIN 12899 standard section 1 and to ANSI Z358.1 - 1998 standard.

The self-draining shower head requires for optimal function min. 1 bar (14.7 psi) and max. 10 bar (147 psi) dynamic water pressure.

Features & Benefits

- ✓ Self-draining, anti lime scale
- ✓ - prevents bacteria build-up and reduces maintenance
- ✓ Complies to both DIN & ANSI Standard



- ✓ Chemical resistance PPO plastics
- ✓ Soft water spread
- ✓ Available for 1/2", 3/4" and 1" pipes

K_v Values

Type of shower	Eye shower without FLOWFIX ¹⁾	Body shower 1/2" pipe or inlet	Body shower 3/4" pipe or inlet	Body shower 1" pipe or inlet	Free standing-body shower, top inlet	Free standing-body shower, bottom inlet	Thermostatic mixing valve 17 140.009	Thermostatic mixing valve 17 457.009
K _v -value	m ³ /h	0.75	3.89	3.72	5.31	3.97	1.25	3.89
	l/sec	0.21	1.08	1.03	1.48	1.10	0.35	1.08

Any calculation can be done using the following formulas:

$$K_v = \frac{q_v [\text{m}^3/\text{h}]}{\sqrt{\Delta P [\text{bar}]}}$$

$$\text{or } q_v = K_v \times \sqrt{\Delta P}$$

$$\text{or } \Delta P = \left(\frac{q_v}{K_v} \right)^2$$

Where

K_v = flowrate [m³/h] or [l/sec] at 1 bar pressure drop

q_v = flowrate [m³/h] or [l/sec]

ΔP = pressure drop [bar]

1) Please note that eye showers with built-in FLOWFIX have a fixed flowrate.

Examples:

What pressure drop is needed in order to achieve 75 l/min = 1.25 l/sec through a body shower with 1/2" inlet?

$$\Delta P = \left(\frac{q_v}{K_v} \right)^2 = \left(\frac{1.25 [\text{l/sec}]}{1.08 [\text{l/sec}]} \right)^2 = 1.34 [\text{bar}]$$

What flowrate can be expected through a free standing body shower with top inlet at a pressure drop of 1.5 bar?

$$q_v = K_v \times \sqrt{\Delta P} = 1.10 [\text{l/sec}] \times \sqrt{1.5 [\text{bar}]} = 1.35 \text{ l/sec} = 80.8 \text{ l/min.}$$

Symbols:



Eye shower



Body shower



For disabled people as well