

Opal GEM™ Trap

GEM Steam Trap Technical Datasheet



EUK | Rev 6 | Nov 2016

The GEM Trap

The GEM Trap is a low maintenance steam trap with no moving parts; it will not wear and its performance is guaranteed* on saturated steam for 10 years. The unique orifice and multistaged throat technology utilises the expansion of the flash steam created by the pressure differential across the trap to control the flow of condensate.

Operating over variable loads, the GEM Trap will suit all industrial applications. The single piece bodies are manufactured from wear and corrosion resistant grades of stainless steel.

The GEM Trap is the most energy efficient steam trap on the market and is supplied with a full sizing and commissioning service.

THE OPAL GEM TRAP

Opal Traps contain GEM's inverted cone technology and a robust reinforced mesh strainer basket with large surface area to further protect the orifice from debris.

- ▶ Same face to face dimension as mechanical traps
- ▶ Quick and easy to install
- ▶ Fully maintainable in-line
- ▶ Easy access to both strainer basket and orifice chamber

Suitable Applications

- ▶ Low condensate duty applications
- ▶ Line drainage / trace heating

Operating Parameters

- ▶ TMA 400°C (750°F)
- ▶ PMA 50 barg (730 psig) – Threaded
- ▶ PMA 100 barg (1450 psig) – Socket Weldable
- ▶ PMA 100 barg (1450 psig) – Flanged†

For all ratings over 50 barg, a charge will be applicable to pressure test.
† Flanged Opal rating is limited by the specification of the flange selected.

Ancillary Parts

- ▶ Insulation Jacket
- ▶ Optional drainage valve

Available Spares

- ▶ Quality Metakamm® graphite-faced gasket with SS core
- ▶ Robust SS reinforced strainer basket

Sizes and Connection Types Available

	Flanged	Threaded BSPT / NPT	Socket Weldable
DN15 / ½"	On request	✓	✓
DN20 / ¾"	On request	✓	✓



Key GEM Trap Benefits

Quality, Efficiency, Reliability and Service

Permanent Energy Savings

- ▶ Typical payback < 2 years
- ▶ Inherently more efficient than mechanical steam traps

10 Year Performance Guarantee*

- ▶ No moving parts to wear or fail
- ▶ No inserts – no leak path

Reduced Maintenance

- ▶ No on-going trap surveys
- ▶ Minimal annual maintenance

Improved Process Control

- ▶ No pressurisation of condensate return system
- ▶ Elimination of steam trap related waterhammer

Performs Across Industrial Variable Loads

- ▶ Each trap supplied with full sizing and commissioning service

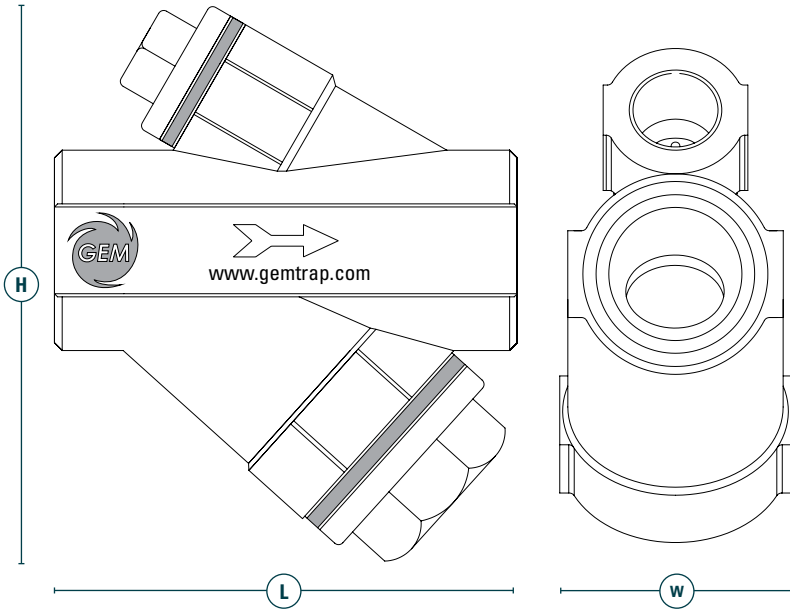
* Reduced guarantee offered for superheated steam

Opal GEM™ Trap

GEM Steam Trap Technical Datasheet



Product Diagram



Dimensions and Weights

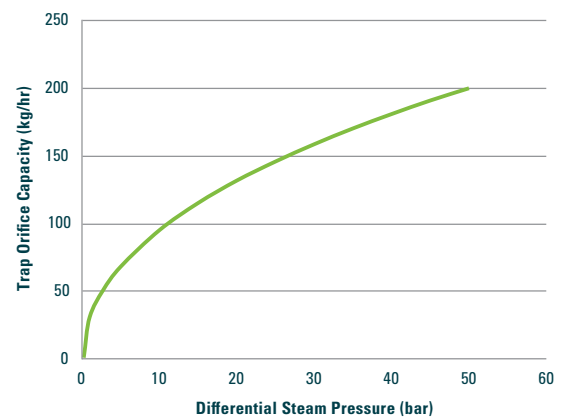
	OP15 (DN15 / 1/2")	OP20 (DN20 / 3/4")
Height (H)	97mm	97mm
Length (L)	80mm	80mm
Width (W)	40mm	40mm
Weight	0.75kg	0.75kg

Materials

Part	Material
Body	Cast Stainless Steel ASTM A351 CF8M / GX5CrNiMo 19-11-2 1.4408
Orifice cap	Stainless Steel ASTM A479 304 / BS EN 10088-3 1.4301
Strainer basket	Reinforced 316 Stainless Steel 60 Mesh
Gaskets	Metakamm® 316 Stainless Steel Core / Graphite-faced
Strainer cap	Cast Stainless Steel ASTM A351 CF8M

- ▶ Full product traceability is part of our Quality Assurance procedure
- ▶ Type 3.1 material certification to BS EN 10204:2004
- ▶ Thermal Energy reserve the right to amend material specification

Discharge Capacity



Maximum discharge capacity for Opal Trap at saturation temperature.*

The GEM Trap will have 2-3 times the capacity at start-up.

* Actual capacity is dependent on internal sizing configuration.

All certification/inspection requirements must be stated at time of order placement.

FOR FURTHER INFORMATION

For further information on the full GEM Trap range contact us at enq@thermalenergy.com or visit www.thermalenergy.com



An Innovative Technology Company Providing Custom Energy and Emission Reduction Solutions

enq@thermalenergy.com / www.thermalenergy.com

Flanged Opal GEM™ Trap

GEM Steam Trap Technical Datasheet



EUK | Rev 7 | Jan 2017

The GEM Trap

The GEM Trap is a low maintenance steam trap with no moving parts; it will not wear and is performance guaranteed* on saturated steam for 10 years. The unique orifice and multistaged throat technology utilises the expansion of the flash steam created by the pressure differential across the trap to control the flow of condensate.

Operating over variable loads, the GEM Trap will suit all industrial applications. The single piece bodies are manufactured from wear and corrosion resistant grades of stainless steel.

The GEM Trap is the most energy efficient steam trap on the market and is supplied with a full sizing and commissioning service.

THE FLANGED OPAL GEM TRAP

Flanged Opal Traps contain GEM's inverted cone technology and a robust reinforced mesh strainer basket with large surface area to further protect the orifice from debris.

- ▶ Suitable for all standard PN / ASME flanged applications
- ▶ Fully maintainable in-line
- ▶ Easy access to both strainer basket and orifice chamber

Suitable Applications

- ▶ Low condensate duty applications
- ▶ Line drainage / trace heating

Operating Parameters

- ▶ TMA 400°C (750°F)
- ▶ PMA 50 barg (730 psig) as standard
- ▶ PMA 100 barg (1450 psig) on request

For all ratings over 50 barg, a charge will be applicable to pressure test.
Flanged Opal rating is limited by the specification of the flange selected.

Ancillary Parts

- ▶ Insulation Jacket
- ▶ Optional drainage valve

Available Spares

- ▶ Quality Metakamm® graphite-faced gasket with SS core
- ▶ Robust SS reinforced strainer basket

Sizes and Connection Types Available

As standard	
DN15 / ½"	PN16/25/40
DN20 / ¾"	ANSI150/300/600
DN25 / 1"	Ring Type Joint (RTJ) or Raised face (RF)

Other flange specifications can be accommodated on request.
Threaded (BSP/NPT) and Socket Weldable options also available.



Key GEM Trap Benefits

Quality, Efficiency, Reliability and Service

Permanent Energy Savings

- ▶ Typical payback < 2 years
- ▶ Inherently more efficient than mechanical steam traps

10 Year Performance Guarantee*

- ▶ No moving parts to wear or fail
- ▶ No inserts – no leak path

Reduced Maintenance

- ▶ No on-going trap surveys
- ▶ Minimal annual maintenance

Improved Process Control

- ▶ No pressurisation of condensate return system
- ▶ Elimination of steam trap related waterhammer

Performs Across Industrial Variable Loads

- ▶ Each trap supplied with full sizing and commissioning service

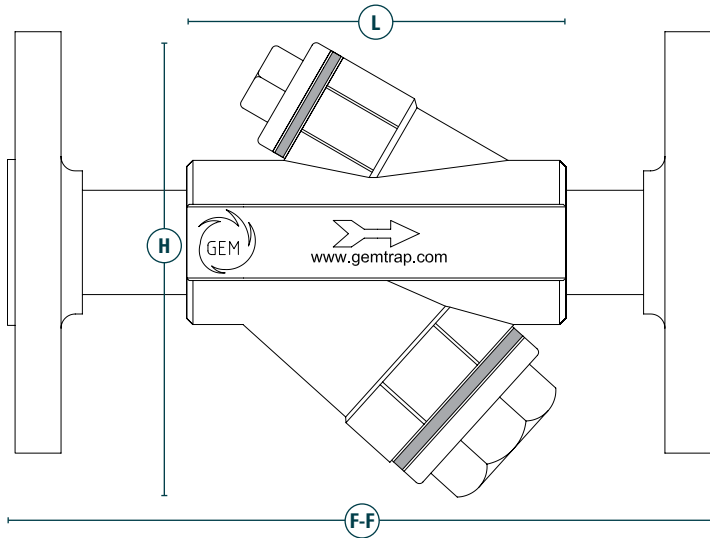
* Reduced guarantee offered for superheated steam

Flanged Opal GEM™ Trap

GEM Steam Trap Technical Datasheet



Product Diagram



Dimensions and Weights

	OP15 (DN15 / 1/2")	OP20 (DN20 / 3/4")	OP25 (DN25 / 1")
Height (H)	97mm	97mm	97mm
Length (L)	80mm	80mm	80mm
Face to Face (F-F) ANSI150	150mm	150mm	160mm
Face to Face (F-F) ANSI300/600	210mm	210mm	230mm
Face to Face (F-F) PN16/25/40	150mm	150mm	160mm

Face to Face dimensions above illustrate minimum face to face available/possible in line with ISO 6554:1980 (BS EN 26554:1991).

Longer Face to Face lengths available to suit requirements.

Trap body weight is 0.75kg – total weight depends on flange specification supplied.

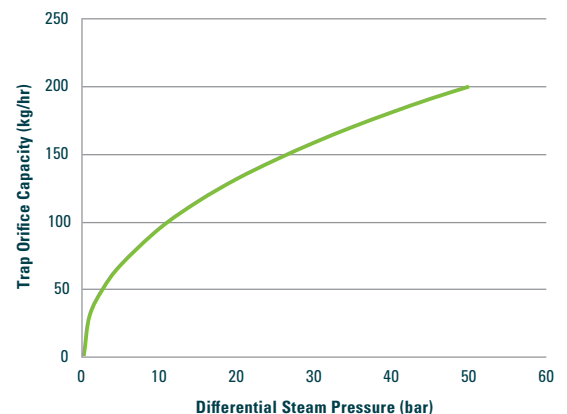
Materials

Part	Material
Body	Cast Stainless Steel ASTM A351 CF8M / GX5CrNiMo 19-11-2 1.4408
Orifice cap	Stainless Steel ASTM A479 304 / BS EN 10088-3 1.4301
Strainer basket	Reinforced 316 Stainless Steel 60 Mesh
Gaskets	Metakamm® 316 Stainless Steel Core / Graphite-faced
Strainer cap	Cast Stainless Steel ASTM A351 CF8M

- ▶ All welding carried out to recognised industry standards such as ASME B31.3 or BS 4515, by certified welders
- ▶ Appropriate testing options depend on pipe materials and weld types
- ▶ Testing options include hydrostatic pressure testing, radiography, ultrasonic or phased array testing, Liquid Penetrant Inspection, and Magnetic Particle Inspection
- ▶ Any testing carried out at additional cost
- ▶ Full product traceability is part of our Quality Assurance procedure
- ▶ Type 3.1 material certification to BS EN 10204:2004
- ▶ Thermal Energy reserve the right to amend material specification

All certification/inspection requirements must be stated at time of order placement.

Discharge Capacity



Maximum discharge capacity for Flanged Opal Trap at saturation temperature.*

The GEM Trap will have 2-3 times the capacity at start-up.

* Actual capacity is dependent on internal sizing configuration.

FOR FURTHER INFORMATION

For further information on the full GEM Trap range contact us at enq@thermalenergy.com or visit www.thermalenergy.com



An Innovative Technology Company Providing Custom Energy and Emission Reduction Solutions

enq@thermalenergy.com / www.thermalenergy.com