

PHARMA-LED illuminated sight glasses

Composition and design

The sight glasses consist of two flanges, one of which has a shoulder for a butt weld, between which the glass and two gaskets are placed, assembled with studs and hex nuts. The lower flanges are recessed to provide maximum aseptic quality and reduce retention zones.

Applications

- Internal observation of vessels, bioreactors, etc.

Operating conditions

- Pressure: -1/10 bar
- Temperature: 280°C with borosilicate glass DIN 7080; 150°C with soda-lime glass DIN 8902

Options and possible combinations

- These sight glasses can be fitted with ATEX explosion-proof floodlights or standard non-ATEX floodlights. The counter-flanges have tapped holes for mounting floodlights or a grille. The sight glasses can be adapted to accept a wiper. Combining the counter-flange with an integrated LED strip allows visibility and surface lighting on the same sight glass using a 24V DC LED power supply.

Certificates

- For the complete sight glass assembly: Certificate 2.2. For the flanges: Certificate 3.1, surface roughness report. For the glass: hydraulic pressure test. For the gaskets: FDA/USP food-grade certificate.

Component materials

Weld-on flange and counter-flange: stainless steel 1.4404, 1.4307, 1.4435, 1.4539, or others.

Gaskets: Klingsil C-4400, EPDM, silicone, PTFE.

Glass: soda-lime, borosilicate.

Assembly screws: studs and hex nuts.

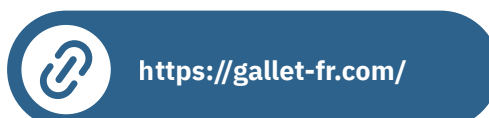
Mounting:

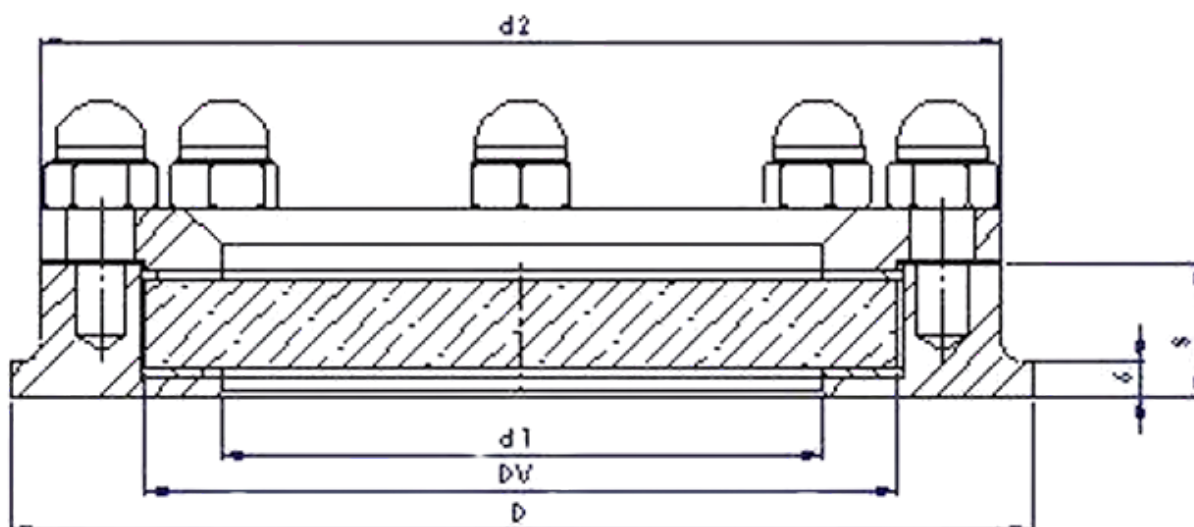
After welding the lower flange onto the tank wall by a butt weld, position the gaskets, the glass, and the counter-flange. Tightening will be maintained by the screws. Tighten the bolts progressively and in a crosswise pattern.

Custom fabrication:

Machining a radius on the weld-on flange for welding onto a curved tank shell is possible.

Flange thicknesses vary depending on demand. Custom flanges available upon request based on drawings.





Nominal Ø	DN	50	65	80	100	125	150
Viewing Ø	d1	50	65	80	100	125	175
Illuminated viewing Ø / no. of LEDs	d1	/	40mm/4	50mm/4	75mm/6	100mm/8	118mm/8
PN		10	10	10	10	10	10
Glass	dv	63	80	100	125	150	175
	s	10	12	15	15	20	20
Flanges	D	96	116	142	168	198	230
	d2	90	110	136	160	190	220
	s	16	19	22	22	29	33
Assembly screws		6 M8 screws	8 M8 screws	8 M8 screws	8 M10 screws	8 M10 screws	12 M10 screws
Gaskets		65	82	102	127	152	177
		50	65	80	100	125	150
TIGHTENING TORQUE		1.3NM	1.6NM	2.5NM	5NM	5.7NM	6.3NM

Ordering information:

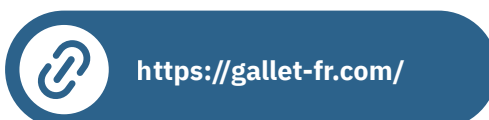
PHARMA or PHARMA-LED sight glass

Nominal Ø (DN)

Materials: weld-on flange, counter-flange, on request, 3.1.B certificates

Glass, gaskets

Finish: Internal surface: polished, Ra < 0.8 µm



FLAT GASKET	CE 1935 - 2004	FDA	USP VI	87/88	USP 121°	TSE BSE	T°
EPDM	Option	Yes	Yes	Yes	Yes	Yes	-40/150°C
VITON	Option	Yes	/	/	/	/	200°C
PTFE	Option	Yes	Yes	/	Option	Yes	250°C
KLINGERSIL	/	/	/	/	/	/	250°C
TOP CHEM	Yes	Yes	/	/	/	/	260°C
GYLON	/	Yes	Yes	/	Option	Option	260°C
PGAC	Yes	Yes	/	/	/	/	-220/240°C
SILICONE	Option	Yes	Yes	/	/	/	200°C
GRAPHITE PSM	/	/	/	/	/	/	500°C

O-RING	CE 1935 - 2004	FDA	USP VI	87/88	USP 121°	TSE BSE	T°
EPDM	Yes	Yes	Yes	Option	Option	Yes	-40/150°C
VITON	Yes	Yes	Yes	/	/	/	200°C
VITON FEP	Yes	Yes	Yes	88	/	Yes	-20/200°C
SILICONE	Yes	Yes	Yes	Option	Option	Yes	200°C
KALREZ	/	Yes	Yes	88	Yes	/	330°C

