Lumistar

Highly Specialized Pipeline Sight Glass Manufacturer

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Pressure vessel sight glass NB/T47017-2011

NB/T47017 "Standard for Pressure Vessel Sight Glass"Released by the National Energy Administration on July 1, 2011， The NB/T47017 "Pressure Vessel Sight Glass" standard combines multiple styles such as HGJ51-502-1986 "Pressure Vessel Sight Glass", HG/T21575-1994 "Sight Glass with Light", HG/T21505-1992 "Combination Sight Glass", etc. into one style,And significant improvements have been made, including the addition of DN200 mirror specifications, increased usage pressure for some mirrors, eliminated mirror flushing holes, adopted flushing devices according to foreign standards, and added mirror specifications with spotlights.

Common materials:Q235、Q345R、304、304L、316、316L、 2205, 2507, etc pressure resistant performance：Conventional 0.6~2.5Mpa, can be customized with 2.5~70Mpa ultra-high voltage mirror.

Connection method:

A. One method is to weld the edge of the mirror base to the container shell or head. As shown in Figure 1

B. One method is to clamp and connect the mirror base with the container's matching flange. As shown in Figure 2

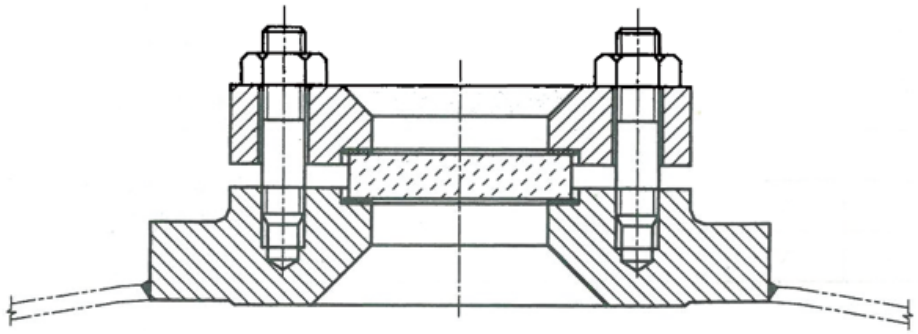

Figure 1: Directly welded to the container shell

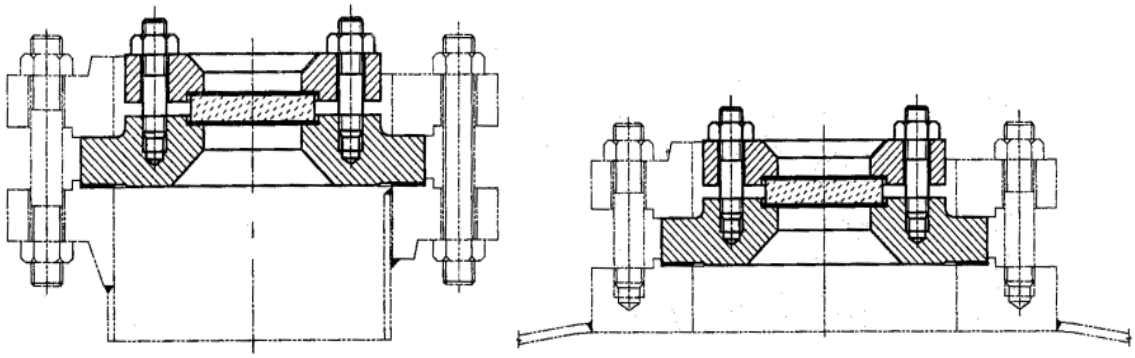

Figure 2: Paired with container, flange clamping link type

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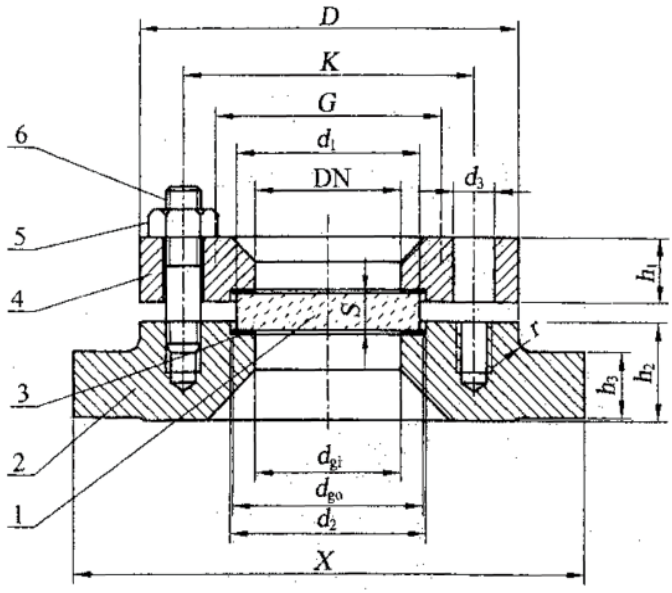
NB/T47017-2011 Pressure Vessel Sight Glass
As a standard combination component, the mirror is composed of mirror glass, mirror base, sealing gasket, clamping ring, nut, and stud light,

The basic form is shown in the following figure:



Basic types of mirrors

1. Mirror glass
2- Mirror seat
3- Sealing gasket
4- Compression ring
5-Nut
6-Double headed stud

Size chart

unit: mm

DN	PN Mpa	sight glass							glass		seal pad		Stud		Weight kg
		X	D	K	G	h_1	h_2	h_3	d1	S	d_{g1}	d_{go}	n	thread	
50	1.0	175	115	85	80	16	25	20	65	10	50	67	4	M12	5.4
	1.6					16				10					5.4
	2.5					20				12					5.6
80	1.0	203	165	125	110	16	30	25	100	15	80	102	4	M16	8.6
	1.6					16				15					8.6
	2.5					20				20					9.2

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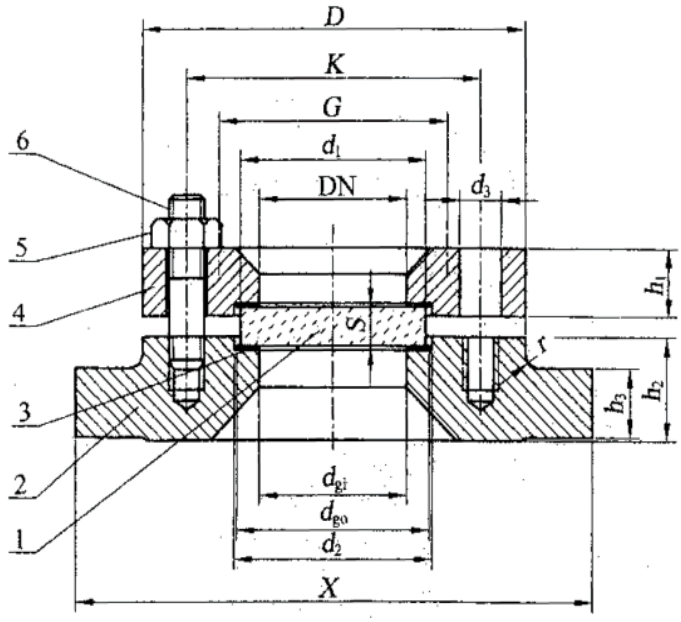
Pressure vessel sight glass NB/T47017-2011



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1. Mirror glass
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Size chart

unit：mm

DN	PN Mpa	sight glass							glass		seal pad		Stud		Weight kg
		X	D	K	G	h1	h2	h3	d1	S	d_{g1}	d_{go}	n	thread	
100	1.0	259	200	160	135	20	30	25	125	15	100	127	8	M16	14.1
	1.6					20				20					14.2
	2.5					25				25					15.1
125	0.6	312	220	180	160	18	30	25	150	20	125	152	8	M16	18.2
	1.0					22				20					18.7
	1.6					22				25					18.8
150	0.6	312	250	210	185	18	30	25	175	20	150	177	8	M16	18.2
	1.0					25				20					20.1
	1.6					25				25					20.3
200	0.6	363	315	270	240	20	36	30	225	25	200	227	8	M20	27.4
	1.0					35				30					33.2

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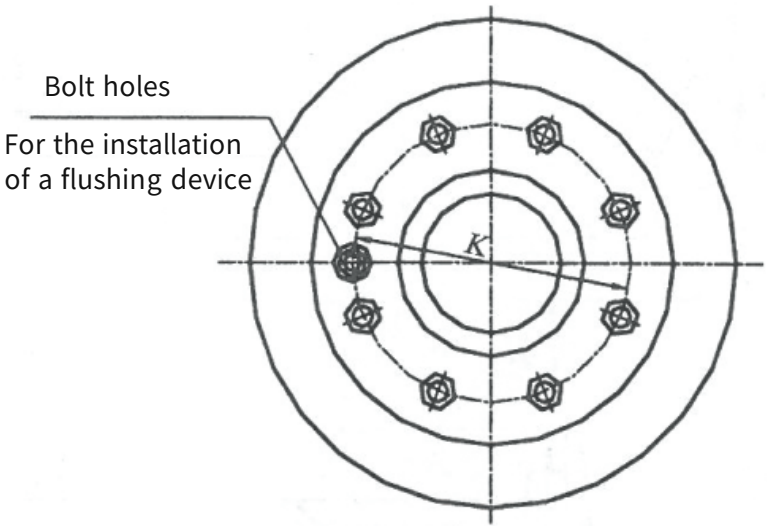
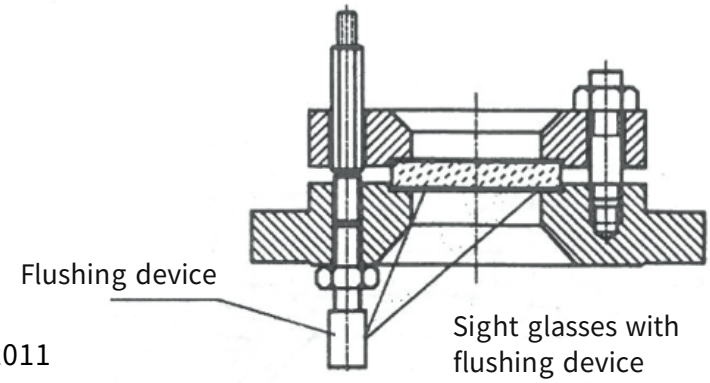
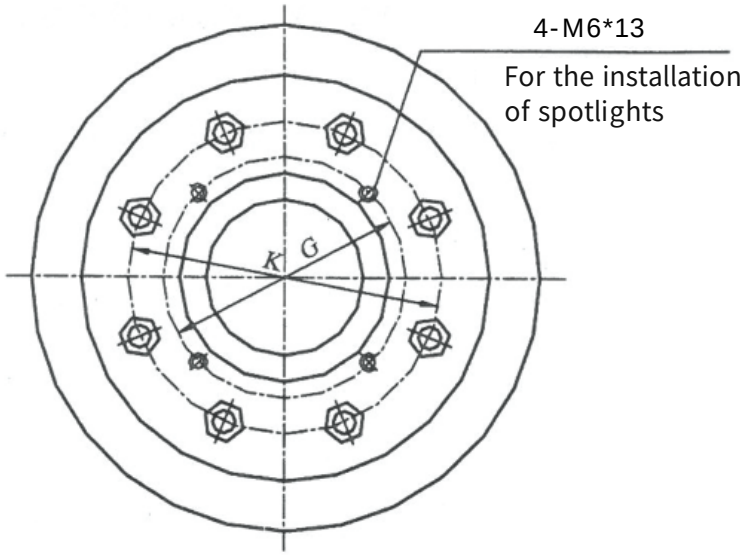
Pressure vessel sight glass NB/T47017-2011

According to the optional flushing device,
it is used for jet cleaning on the inner side of the sight glass.





Pressure vessel sight glassNB/T47017-2011
Spotlight installation location



Installation position of the spotlight on the sight glass compression ring

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Rumi sprinklers

Suitable for round sight glasses DIN28120 or similar

Installation: The sight glasses are fastened with sealing bolts to fasten the upper and lower flanges

Scope of use: It is necessary to continuously and automatically clean the sight glass lenses; Fit the container to be preventedExplosion and non-explosion zones operate under pressure or vacuum.

Operating conditions: Suitable for installation on sight glasses.

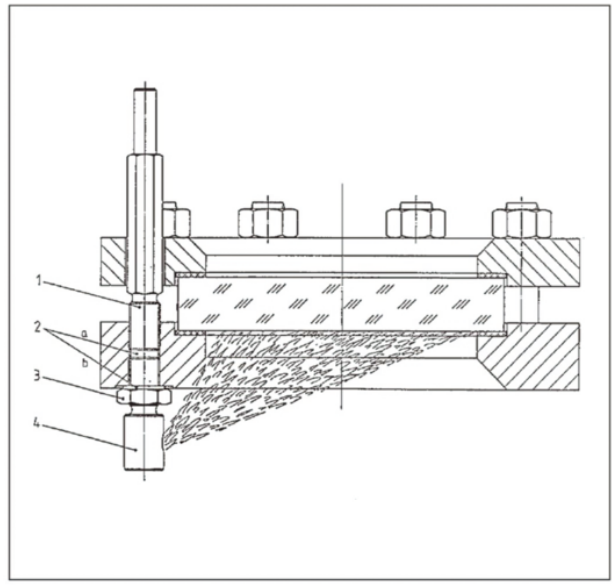
Combination: It can be combined with a Rumi spotlight and a scraper at the same time. Mirror glassSpecial attention should be paid to the maximum temperature and the stability of temperature changes!

Material:
Metal fittings : Stainless steel 1.4571
Gasket : PTFE

Scope of delivery : Nozzle, locknut, two gaskets,Pipe connector 10*1.5mm and installation instructions

Part Material Layered Introduction

No	parts	Material
1	Connecting tabs	Stainless steel 1.4571
2	Seals	PTFE
3	Locknut	Stainless steel A4
4	Nozzle	Stainless steel 1.571



Size

The Rumi nozzle is suitable for use with all standard sight glass units.It can also be customized according to customer requirements.

The following must be communicated at the time of ordering: e.g

Rumi nozzles, No. 1.1098.005.91To order with other sight mirror units, be sure to inform them of their model and construction:
1.Sight mirror device (DN/PN), material
2.Type (borosilicate/soda-lime) and size of sight lens lenses

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Sight Glass Fitting, Circular DIN 28120 or similar

The sight glass is welded using a circular flange chuck according to DIN 28120. The upper and lower flanges are fastened with bolts, and the mirror lens and sealing gasket are placed in sequence in the middle. Its structure and dimensions comply with the design criteria of DIN 28120, DN 50~DN200. The flange strength according to this standard size can ensure that the mirror lenses in storage are not damaged or deformed. The premise is to weld the flange block according to the regulations.

adapted to:

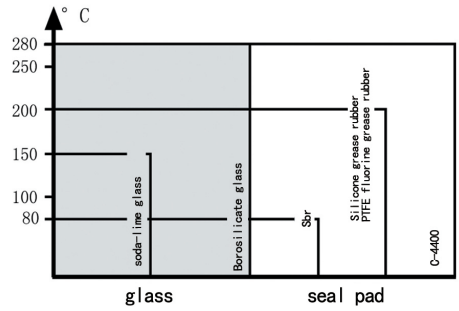
Used for observing iron drums, circular silos, mixers, separators, pipelines, etc.

operation condition:

Pressure resistance: 10bar~16bar;

We can customize 1.6-70Mpa pressure vessel sight glass vacuum operating temperature according to customer needs: up to 200C borosilicate glass DIN7080 can be customized with other higher grade high-temperature resistant glass.

The following statistical chart can provide reference for material selection:



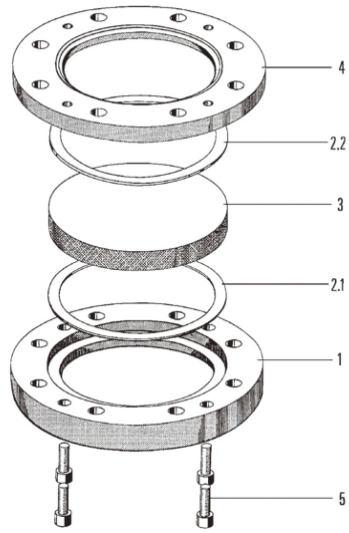
combination：

Used in explosion-proof and non explosion-proof areas with Lumi spotlights. Provide matching threaded holes on the flange for securing spotlights.

Certificate：

Acceptance according to customer requirements is subject to additional charges, and can also be selected according to DIN EN 102013.1/3.2

Parts and optional materials, as shown in the right side view



1	flange weld flange	Carbon steel RSt 37-2; Stainless steel 1.4571 or other
2.1,2.2	Tighten bolts	Carbon steel 5.6/5 or stainless steel A2
3.1,3.2	seal pad	KLINGERsil C-4400; Silicone rubber, PTFE or other
4	Mirror lenses	Sodium calcium glass: High temperature resistant tempered glass DIN 8902 Sodium calcium glass: High temperature resistant tempered glass DIN 7080
5 6	Flange cover Container wall	Carbon steel RSt 37-2; Stainless steel 1.4571 or other

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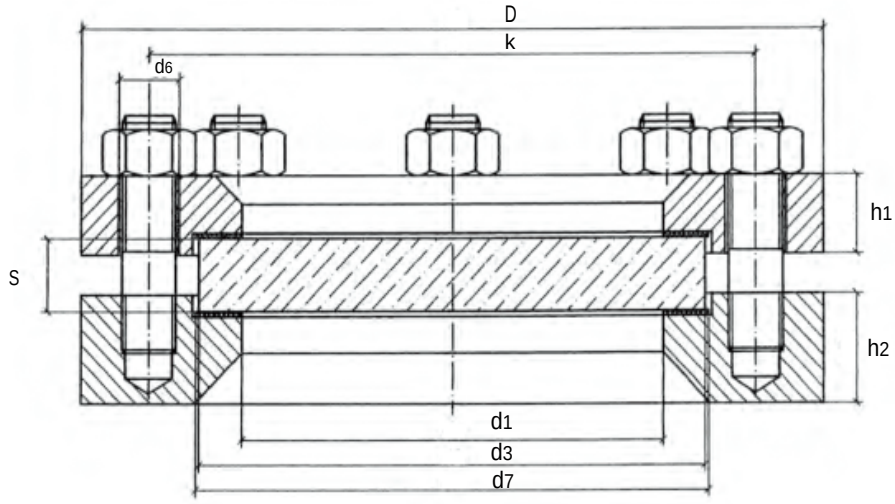
Dimensions for sight glass fitting, circular, DIN 28120/PN 10/16 or similar DIN 28120/PN 6



		1	2	3	4	5	6
Nominal width	DN	50	80	100	125	150	200
Pressure-resistant	PN	10/16	10/16	(6) 10/16	(6) 10/16	(6) 10/16	(6) 10
Visible diameter	d1	80	100	125	150	175	225
Glass	d3	100	125	150	175	200	250
	s	15/15	15/20	(20) 20/25	(20) 20/25	(20) 25/30	(25) 30
Flange	D	165	200	220	250	285	340
	k	125	160	180	210	240	295
	d6	18	18	18	18	22	22
	h1	16/16	20/20	(18) 22/22	(18) 25/25	(18) 30/30	(20) 35
	h2	30	30	30	30	36	36
Tighten the bolts	数量	4	8	8	8	8	8
	尺寸	M 16	M 16	M 16	M 16	M 20	M 20
Gaskets	d1	80	100	125	150	175	225
	d7	102	127	152	177	202	252
Bolt torque/μ 0.1	Nm	28/32	20/23	26/30	32/34	47/54	63

Order guide:
-Device (DIN) and construction
-Nominal width (DN), nominal pressure (PN)
-Material: Flange (shape and sealing area), according to sample test certificate 3.1/3.2
Flange cover, according to sample test certificate 3.1/3.2
Bolt Glass lenses seal pad

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Round sight glasses DIN28121 PN10/25

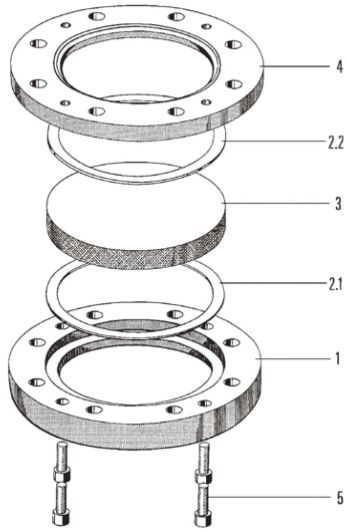
Sight glass fittings according to DIN 28121 are circular flanged ports that are fastened to welding neck flanges, base flanges or similar by means of bolts.
The fitting is mechanically pre-tensioned as a unit. The structure and dimensions comply with the design standards set out in DIN 28121.

Connection size： PN10 DN40-DN200

adapted to:
Used for observing iron drums, circular silos, mixers, separators, pipelines, etc.

operation condition:
Pressure resistance: 10bar~25bar;
Vacuum operating temperature: up to 200C borosilicate glass DIN7080 other higher grades of high-temperature resistant glass can be customized.

combination：
Used in explosion-proof and non explosion-proof areas with sight glass lights. Provide matching threaded holes on the flange for securing sight glass lights.



Certificate：
Acceptance according to customer requirements is subject to additional charges, and can also be selected according to DIN EN 10204 3.1/3.2

Parts and optional materials, as shown in the right side view

Base flange, version A (1)	boiler plate H II DIN 17155; stainless steel 1.4571 to DIN 17440 or other AB1: sealing rib to DIN EN 1092-1 AC: tongue to DIN EN 1092-1 AE: male socket to DIN EN 1092-1
Gasket, side with product contact (2.1)	PTFE envelope resilient gasket with corrugated support ring
Gasket, atmospheric side (2.2)	KLINGERsil C-4400
Sight glass disc (3)	borosilicate glass: toughened DIN 7080
Mating flange (4)	boiler plate H II, stainless steel 1.4571 or other
Compression bolts (5)	steel 5.6

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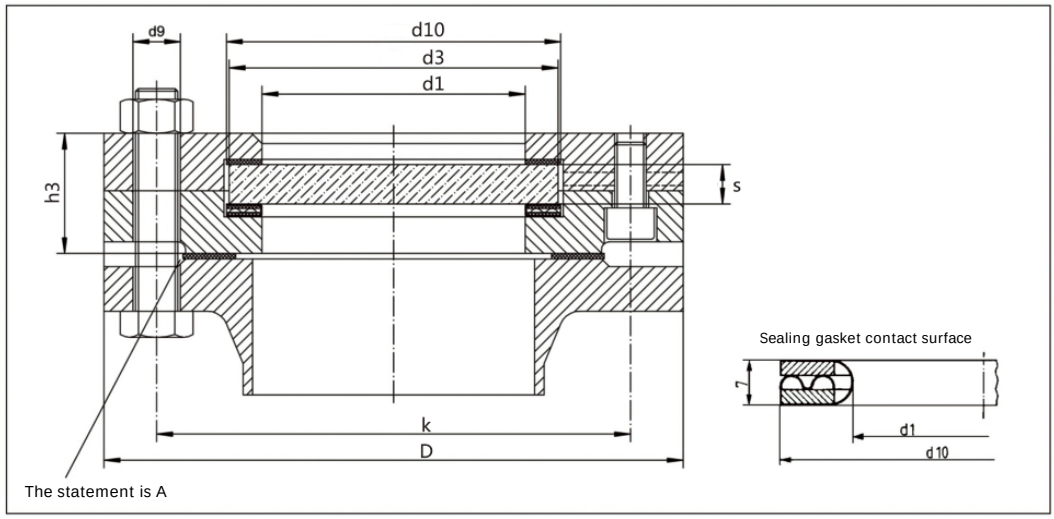
Circular, DIN28121 or other similar models

Schematic diagram of dimensions for circular mirror device according to DIN28121/PN10 (version A)



		1	2	3	4	5	6	7
nominal width	DN	40	50	80	100	125	150	200
pressure resistance	PN	10/25	10/25	10/25	10/25	10/25	10/25	10/25
Visual diameter	d1	48	65	80	100	125	125	150
glass	d3	63	80	100	125	150	150	175
	s	10/12	12/15	15/20	15/25	20/30	20/30	20/30
flange	D	150	165	200	220/235	250/270	285/300	340/360
	k	110	125	160	180/190	210/220	240/250	295/310
	h3	36/38	38/41	46/50	46/59	54/66	54/66	54/66
Tighten bolts	数量	4	4	8	8	8	8	8/12
	尺寸	M 16	M 16	M 16	M 16/M 20	M 16/M 24	M 20/M 24	M 20/M 24
	d9	18	18	18	18/22	18/26	22/26	22/26
seal pad	d1	48	65	80	100	125	125	150
	d10	65	82	102	127	152	152	177

Order guide:
-Device (DIN) and construction
-Nominal width (DN), nominal pressure (PN)
-Material: Flange (shape and sealing area), according to sample test certificate 3.1/3.2
Flange cover, according to sample test certificate 3.1/3.2
Bolt Glass lenses seal pad

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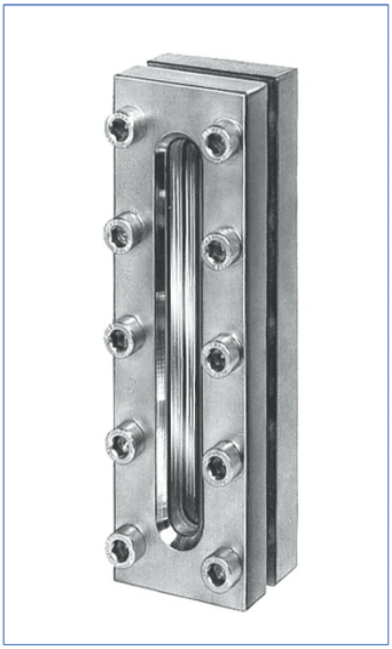
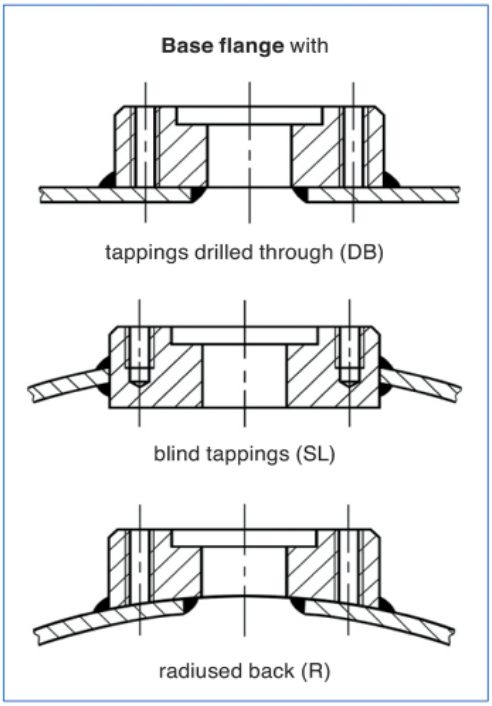
Rectangular sight glass RSA/RSGA/RSGRR170-1000



Rectangular sightglass fitting, series RSGRR,size 250, with reflex glass



Standard versions

Application:

Rectangular Lumistar sightglasses of the series RSG / RSGR / RSGRR may beused to observe the interior of reactors, columns, silos, vessels,storage tanks andpipelines.They serve mainly as liquid level gauges.The are delivered ready to bewelded into or onto a vessel wall, complete with the appropriate seals, glass plates,and cover fastenings.

Operating conditions: Nominal pressure 16 bar Vacuum

Note: The nominal pressure indicated refers to the design base of thesightglass. When weided into the vessel concerned, the base frame becomespart of the vessel wall. It is necessary, therefore, that appropriate strengthcalculations are made on all vessels concerned with respect to the designpressure and size of the vessel and in accordance with the relevant designcode. If found to be necessary, reinforcement of the vessel wall has to becarried out.

Operating temperatures:

10°C max. with sodium silicate glass to DIN 8903
243°C max. with borosilicate glass to DIN 7081
Note: The above indicated temperatures refer to the use of unprotected glassplates, with no protective mica sheets.

Standard materials:

Base frame: RSt 37-2 or Hll (boiler plate) /AISI 316 Ti stainless steel
Cover frame: As base frame
Glass plate: Toughened sodium silicate glass to DIN 8903 (max.100 °C)
Toughened borosilicate glass to DIN 7081 (max.243℃)
Gaskets: KLINGERsil C4400 / NeoprenePTFE / Viton
Cover fastenings: Steel, quality 8.8 / Stainless steel
Other materials on request.

Certificates:

To be supplied against extra charge to DIN EN 10204.

Options:

- Version with closed base frame (drawing left) to be used as an external liquid levelgauge with top and bottom pipe connections.For this application ， the base framewill be supplied appropriately drilled and tapped.
- Radiused base frame to suit vessel wall
- Clear (transparent) glass plate
- Alternative versions in shape and size

Remarks:

The approval does not apply to the base flange as this is considered as part ofthe vessel wall after welding.Standard delivery includes a reflex(fluted) glass plate. Incircumstances where a clear (transparent) glass plate is required, this must be clearlystated at the time of enquiry.

After welding into the vessel,the base frame should be checked to ensure thatthe sealing surface is flat and has not become distorted to avoid possible leakageunder pressure and / or breakage of the glass plate during tightening of the coverframe bolts. This process should be carried out in several steps and progressivelyalternating between each pair of opposite bolts from one end of the frame to the other!Tighten first little, then repeat the operation.

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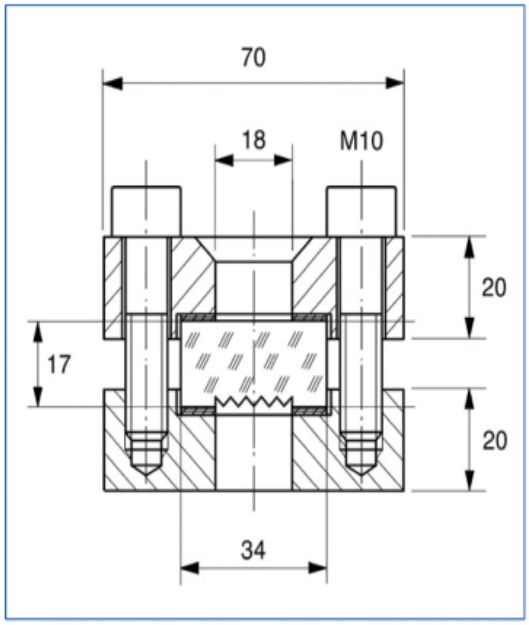
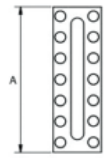
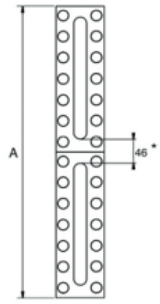
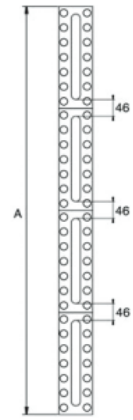
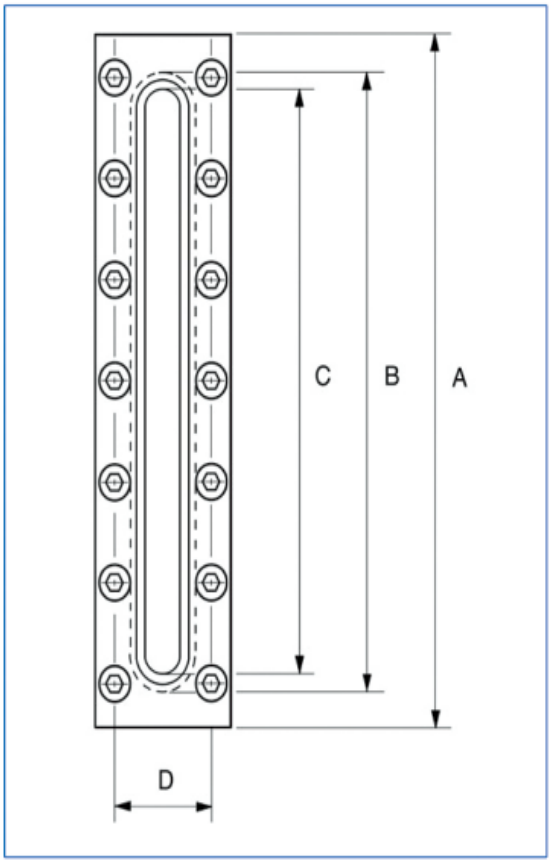
Standard Size Table by Type



Depending on the overall length of the sightglass, the cover frames are made to a maximum unit length A, and the base frame interrupted by bridges which correspond to this length. This strengthens the base frame and reduces the maximum length of the individual glass pieces required to cover the whole length, thus reducing the possibility of glass breakages when the cover frames are tightened down. When selecting the overall length of the sightglass, and the number of units this will involve, due note should be taken to ensure that the liquid level to be observed normally falls into one of the visible sections. (If this is not possible, then consult us for our series of D-ended sightglasses LSG / LSGR / LSGRR)		 * 36 for size 700	
Size(s)	170 - 400	500 - 800	1000



Type	Size	Length A	Number of units	Free view C	Glass-length B	Bolts number	Bolts D	Weight (kg)
RSG RSGR RSGRR	170	170	1	124	140	8	50	2,70
RSG RSGR RSGRR	250	250	1	204	220	10	50	4,40
RSG RSGR RSGRR	300	300	1	264	280	14	50	5,00
RSG RSGR RSGRR	350	350	1	304	320	16	50	6,00
RSG RSGR RSGRR	400	400	1	354	370	18	50	7,00
RSG RSGR RSGRR	500	500	2	2 x 204	2 x 220	20	50	9,10
RSG RSGR RSGRR	600	600	2	2 x 264	2 x 280	28	50	10,50
RSG RSGR RSGRR	700	700	2	2 x 304	2 x 320	32	50	12,00
RSG RSGR RSGRR	800	800	2	2 x 354	2 x 370	36	50	14,00
RSG RSGR RSGRR	1000	1000	4	4 x 204	4 x 220	40	50	17,00

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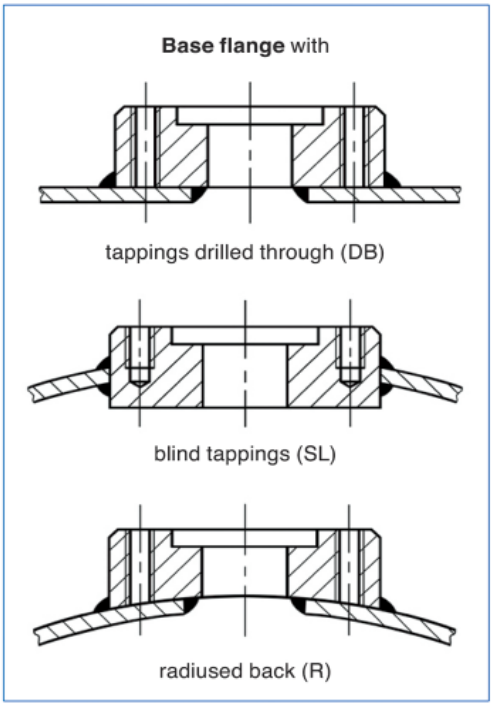
Long strip mirror

Application:

Eiongated sightglasses Lumistar of the series LSG / LSGR / LSGRR may beused to observe the interior of reactors，columns，silos, vessels，storage tanks,pipelines or as liquid level indicators.They are delivered ready to be welded into oronto a vessel wall, complete with appropriate seals, glass plate and cover bolts.TheD -end shape facilitates easier machining of the vessel wall prior to welding in the unit.

D-ended, elongated sightglass type LSGRR316Ti-304 -2,5-2-SL-8903-KLINGERsil-Silicone. Versionwith blind tappings,base and cover flange instainless steel，PN 2,5,glass plate to DIN 89o3,seals KLINGERsil C4400 / silicone，dimensions341 x 116 mm.



Standard versions

Operating conditions:

Nominal pressure 2,5/6/10/ 25 bar (see table overleaf)Vacuum

Note: The nominal pressure indicated refers to the design base of the sightglass. When welded into the vessel concerned, the base frame becomes part of thevessel wall. It is necessary, therefore, that appropriate strength calculationsare made on all vessels concerned with respect to the design pressure andsize of the vessel and in accordance with the relevant design code. If foundto be necessary,reinforcement of the vessel wall has to be carried out.

Operating temperatures:

100 °c max. with sodium silicate glass to DIN 8903243°C max. with borosilicate glass to DIN 7081

Note: The above indicated temperatures refer to the use of unprotected glassplates, with no protective mica sheets.

Standard materials:

Base flange:	Boiler plate RSt 37-2/HII/AISI 316 Ti/AISI316L
Cover flange:	Boiler plate RSt 37-2/HII /AISI 304 /AISI 316 Ti/AISI316L
Glass plates:	Sodium silicate to DIN 8903
(Transparent)Seals:	Borosilicate to DIN 7081
	KLINGERsil C4400
	EPDM Silicone PTFE
Cover bolts	Carbon steel,zinked, quality 8.8
to DIN 912:	Stainless steel A2-70

Other materials on request.

Certificates:

To be supplied against extra charge to DIN EN 10204.

Standard versions: (see left)

- Base flange with bolt tappings drilled through(dimensions see table overleaf), typedesignation - DB
- Base flange with blind tappings, type designation - SL
- Base flange with radiused back (to correspond to vessel radius), type designation-R

Options:

- Version with double glasses (not available for PN 25).
- Fluted glass plate for liquid level indication (only available for PN 25).Special dimensions.
- Closed back (base flange) version with drilled and tapped holes at the ends for pipeconnections so that the unit may be used as an external gauge of a liquid level.

Type designation:

Series LsG:	Base and cover flange in boiler plate RSt 37-2
Series LSGR:	Base flange in stainless steel
	Cover flange in boiler plate RSt 37-2
Series LSGRR:	Base and cover flange in stainless steel

Ordering example:

For an elongated, D-ended sightglass of nominal pressure 10 with base and coverflange in Alsl 316 /AISI 304 and the base flange in version b) with blind tappingstogether with a glass plate of sodium silicate to DIN 8903 and overall dimensionsof 350 x 80 mm, seals PTFE base side, KLINGERsil C4400 cover side, cover boltsA2-70, the correct designation would be:

1 piece type LSGRR 10-3,1.4571/SL -PTFE - 8903 - C4400-1.4301 -A2.

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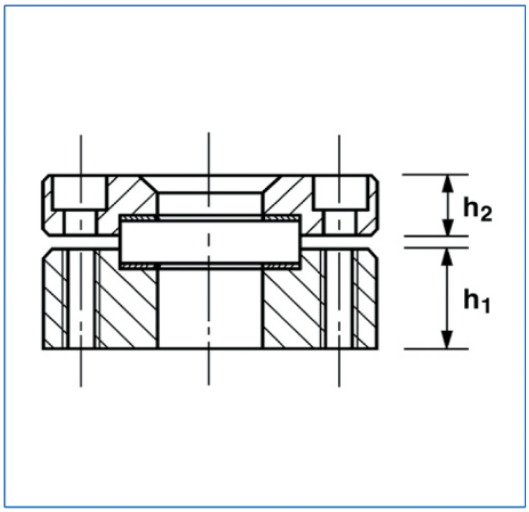
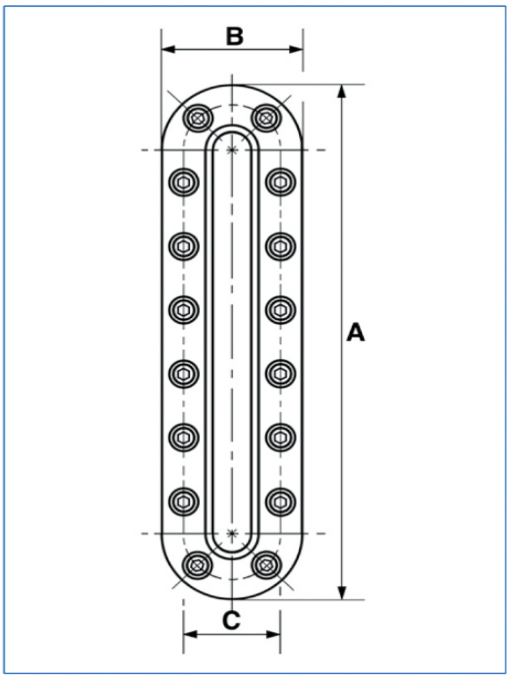
Long strip mirror Type size table



Type LSG LSGR LSGRR	Nominal pressure (PN)	Dimensions A	B	Free view Length	Width	Screws M10 Number	C	Glass plate dimensions	Thickness of the flanges h_1	h_2	Weight (kg)
2,5-1	2,5	266	116	200	50	8	94	70/10 x 220	25	15	6,3
2,5-2	2,5	341	116	275	50	10	94	70/10 x 295	25	15	7,6
2,5-3	2,5	416	116	350	50	12	94	70/10 x 370	25	15	9,8
2,5-4	2,5	491	116	425	50	14	94	70/10 x 445	25	15	11,0
2,5-5	2,5	566	116	500	50	16	94	70/10 x 520	25	15	12,3
2,5-6	2,5	641	116	575	50	18	94	70/10 x 595	25	15	14,2
2,5-8	2,5	791	116	725	50	22	94	70/10 x 745	25	15	18,0
6-1	6	261	96	195	30	10	74	50/10 x 215	25	15	5,6
6-2	6	316	96	250	30	12	74	50/10 x 270	25	15	7,0
6-3	6	371	96	305	30	14	74	50/10 x 325	25	15	8,0
6-4	6	426	96	360	30	16	74	50/10 x 380	25	15	8,9
6-5	6	481	96	415	30	18	74	50/10 x 435	25	15	10,0
6-6	6	536	96	470	30	20	74	50/10 x 490	25	15	12,0
6-8	6	646	96	580	30	24	74	50/10 x 600	25	15	13,7



10-1	10	260	80	198	18	12	58	35/10 x 215	25	15	5,0
10-2	10	305	80	243	18	14	58	35/10 x 260	25	15	5,8
10-3	10	350	80	288	18	16	58	35/10 x 305	25	15	6,5
10-4	10	395	80	333	18	18	58	35/10 x 350	25	15	7,5
10-5	10	440	80	378	18	20	58	35/10 x 395	25	15	8,0
10-6	10	485	80	423	18	22	58	35/10 x 440	25	15	9,5
10-8	10	575	80	513	18	26	58	35/10 x 530	25	15	13,0
25-1	25	186	80	121	15	10	58	34/17 x 140	25	20	4,0
25-2	25	211	80	146	15	10	58	34/17 x 165	25	20	4,5
25-3	25	236	80	171	15	12	58	34/17 x 190	25	20	5,0
25-4	25	296	80	231	15	14	58	34/17 x 250	25	20	6,0
25-5	25	326	80	261	15	16	58	34/17 x 280	25	20	6,8
25-6	25	366	80	301	15	18	58	34/17 x 320	25	20	7.5
25-8	25	386	80	321	15	18	58	34/17 x 340	25	20	8,0

LUMIGLAS®

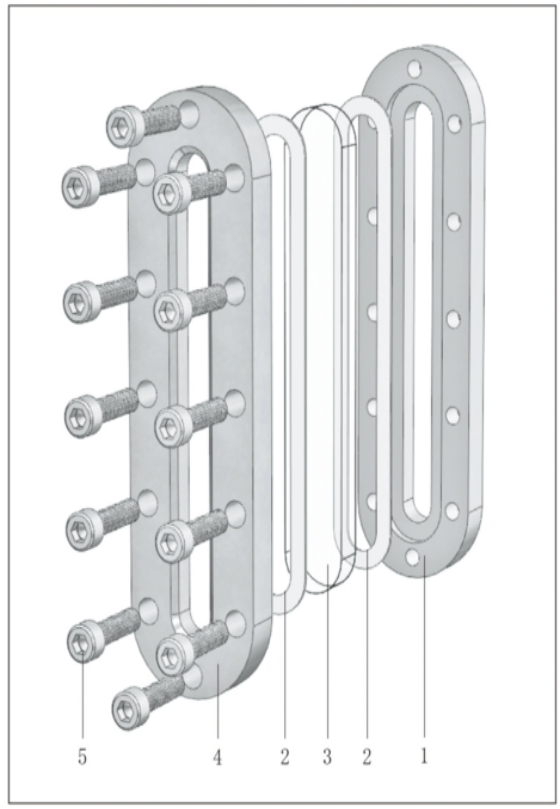
Lumistar Long Elliptical Mirror

Can be welded in or welded off, and a sealing gasket is placed between each adjacent part and the mirror lens is secured with bolts

Suitable for: Used to observe the inside of pipes, containers, iron drums, reactors, circular silos, etc., and is preferred as a gauge for monitoring liquid level.

Operating conditions: withstanding pressure of 2.5/6/10/25 bar - vacuum - the strength of the cut in the shell must be tested before use according to the AD-instructions

Part	Material
1. Frame base	Carbon steel RSt 37-2; stainless steel 1.4571
2. Seal pad	or otherKLINGERSil C-4400; chloroprene rubber; PTFE or other
3. Mirror lens	Sodium calcium glass: heat-resistant tempered, DIN 8903, operating temperature: 100°C; Borosilicate glass heat-resistant tempered, DIN 7081, operating temperature: 243°C.
4. Frame cover	Carbon steel RSt 37-2; stainless steel 1.4571 or other
5. Fastening bolt	Carbon steel 8.8 or stainless steel A4



Installation

Before installing the mirror lens, the sealing surface of the frame base (1) must be checked first. Deformation or unevenness can cause the mirror to break.

After welding the frame base ((1)) to the pipe or container wall, place the gasket (2), mirror lens (3), and frame cover4) in order as shown in the figure and secure them with bolts aligned with the frame base (1).

The bolts must be loosened evenly, relative to each other, starting from the middle of the sight glass to the ends of the sight glass.

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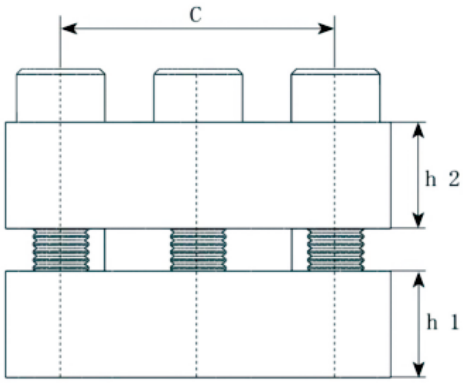
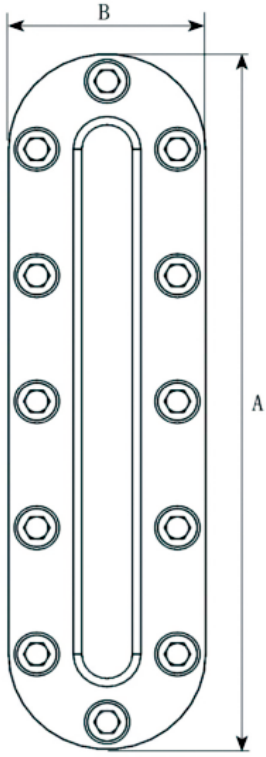
Schematic diagram of the structure of the long elliptical mirror of Rumi Star





	公称压力	尺寸		可视直径		螺栓M10		玻璃尺寸	法兰强度		重量
	PN	A	B	长度	宽度	数量	C		h 1	h 2	kg
1	2, 5	266	116	200	50	8	94	70/10x220	25	15	6, 3
2	2, 5	341	116	275	50	10	94	70/10x295	25	15	7, 6
3	2, 5	416	116	350	50	12	94	70/10x370	25	15	9, 8
4	2, 5	491	116	425	50	14	94	70/10x445	25	15	11, 0
5	2, 5	566	116	500	50	16	94	70/10x520	25	15	12, 3
6	2, 5	641	116	575	50	18	94	70/10x595	25	15	14, 2
8	2, 5	791	116	725	50	22	94	70/10x745	25	15	18, 0
1	6	261	96	195	30	10	74	50/10x215	25	15	5, 6
2	6	316	96	250	30	12	74	50/10x270	25	15	7, 0
3	6	371	96	305	30	14	74	50/10x325	25	15	8, 0
4	6	426	96	360	30	16	74	50/10x380	25	15	8, 9
5	6	481	96	415	30	18	74	50/10x435	25	15	10, 0
6	6	536	96	470	30	20	74	50/10x490	25	15	12, 0
8	6	646	96	580	30	24	74	50/10x600	25	15	13, 7
1	10	260	80	198	18	12	58	35/10x215	25	15	5, 0
2	10	305	80	243	18	14	58	35/10x260	25	15	5, 8
3	10	350	80	288	18	16	58	35/10x305	25	15	6, 5
4	10	395	80	333	18	18	58	35/10x350	25	15	7, 5
1	25	186	80	121	15	10	58	34/17x140	25	20	4, 0
2	25	211	80	146	15	10	58	34/17x165	25	20	4, 5
3	25	236	80	171	15	12	58	34/17x190	25	20	5, 0
4	25	296	80	231	15	14	58	34/17x250	25	20	6, 0
5	25	326	80	261	15	16	58	34/17x280	25	20	6, 8
6	25	366	80	301	15	18	58	34/17x320	25	20	7, 5
8	25	386	80	321	15	18	58	34/17x340	25	20	8, 0

Used for connecting external pipelines

Rumi oval mirror, according to different purposes, can be used as a closed frame base for external pipeline connection. The frame base has a matching aperture and thread.

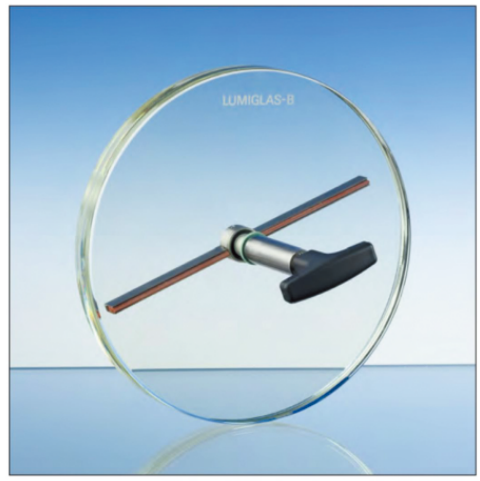
LUMIGLAS®

Self-Cleaning Vessel Sight Glass

Can be used for circular mirror DIN 28120 or similar threaded connection mirrors

install

There is a circular hole with a diameter of p10.5mm in the middle of the mirror lens (such as DIN7080 and 8902), suitable for threaded connection mirrors with nominal widths of DN50~ DN400 according to DIN 28120, such as mirror DIN11851, DN50, DN65,DN100,DN125,DN150。



operation condition

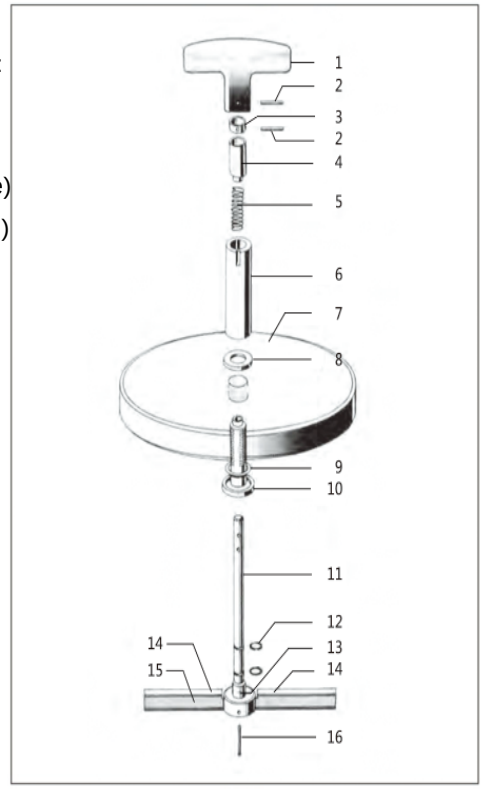
Vacuum resistance; Pressure resistance: 2~6 bar, temperature resistance according to different lens specifications: max.220C (depending on different lenses)

combination:

The following devices can be used in combination with scraper SW1:

- Spray equipment
-Lumistar sight glass light: visible diameter 2125 (DIN 28120. DN100) -sight glass light: models USL and ESL
-sight glass light SLM or Lumistar ME (DN125)
-Unidirectional ratchet handle

number	Part name
1	T-shaped thermoplastic insulated handle (brass bearing) can be selected: one-way ratchet handle
2	Tighten bolt -1.4310
3	Spacer - brass or PEEK (special engineering plastic polyether ether ketone)
4	Spacer - brass or PEEK (special engineering plastic polyether ether ketone)
5	Pressure Spring -1.4310
6	Threaded sleeve -1.4401
7	Mirror lenses - sodium calcium glass or borosilicate glass
8	Sealing gasket - asbestos free green BAS 400
9	O-ring Viton fluororubber
10	Threaded sleeve and flange -1.4401 or 1.4404
11	Scraper shaft -1.4401 or 1.4404
12	O-ring Viton fluororubber
13	Bearing PTFE
14	Scraper - silicone resin, PTFE or EPDM
15	Scraper fixing device 1.4571
16	Tighten bolt -1.4310



Handle lever: 1.4305
Spherical button: Thermosetting plastic (brass bearings)
Unidirectional clutch: Steel - Positioning ring: 1.4305
Terminal sealing cover: plastic. All metal parts in contact with the scraper are made of stainless steel.

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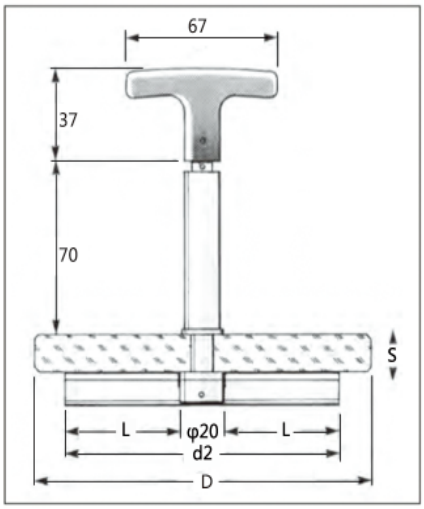
Lumistar scraper mirror with electrical appliance data and size schematic diagram



Lumistar scraper SWI and sight glass DIN28120

As shown in the picture, there is also a Lumistar light installed

Size		3	4	5*	6*	7*	8*	customized			
								9	10	11	12
Mirror nominal width	DN	50	80	100	125	150	200	250	300	350	400
Visual diameter	d_1	80	100	125	150	175	225	Fill in requirements			
Sodium calcium borosilicate mirror lenses	D	100	125	150	175	200	250				
	s	15/15[1]	15/15[1]	15/19[1]	15/19[1]	15/19[1]	15/25[1]				
	PN MAX···bar	6/6[1]	6/6[1]	5/6[1]	4/6[1]	4/4[1]	2/4[1]				
Scraper	d_2	77	97	122	147	172	222	The size of the scraper must match the diameter of the lens, with a maximum of 460mm			
number		062.	. 063.	. 064.	. 065.	. 066.	. 067.				

Can be used in combination with Lumi spotlights

accessory

Scraper	尺寸	L	Silicone rubber number	PTFE Number
	3	28, 5	9468. 062. 00	9468. 072. 00
	4	38, 5	9468. 063. 00	9468. 073. 00
	5	51	9468. 064. 00	9468. 074. 00
	6	63, 5	9468. 065. 00	9468. 075. 00
	7	76	9468. 066. 00	9468. 076. 00
	8	101	9468. 067. 00	9468. 077. 00
	9 ~ 12	Dependent on the visible diameter of the mirror lens		
sealing ring	size	ø x s	number	
Fluororubber O-ring -12	1 bis 6	4 x 1	0862. 019. 00	
Fluororubber O-ring -9	1 bis 6	12 x 2, 5	0862. 024. 00	

LUMIGLAS®

Lumixing crank scraper SW II BW circular mirror

can refer to DIN28120 or other similar models

install

The crank type scraper is equipped with a pressure resistant sealing ring, which is bolted to connect the upper and lower flanges. It is suitable for use in DIN7080 and DIN8902 mirror models "

Scope of adaptation

-Manual cleaning of the inner side of the mirror lens is required
-Priority is given to containers operating under pressure and vacuum, in both explosion-proof and non explosion-proof areas
-Mirror lenses comply with DIN7080/8902 requirements
-Suitable for circular mirror specifications (nominal width) between DN100 and DN200

operation condition

Vacuum resistance; Pressure resistance: maximum 16 bar
Temperature: Maximum allowable 220C (depending on the selected mirror lens)

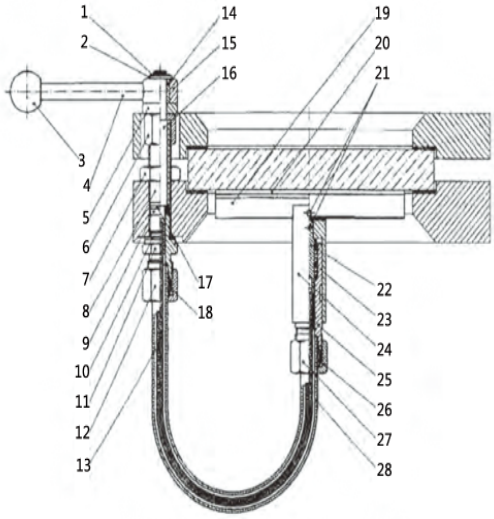
Combination ： Lumixing Explosion proof Spotlight/Spray Device

Wave crank scraper SW II Bw installed on mirror DIN 28120

Structure/Optional Material Scraper

All metal parts in contact with the scraper made of PTFE or silicone rubber are made of stainless steel. Inner scraper sealing ring: PTFE

Installation instructions: The scraper bracket is driven by rotating the external crank handle, ensuring that the scraper can only rotate in one direction.A detailed installation manual will also be included with the product.

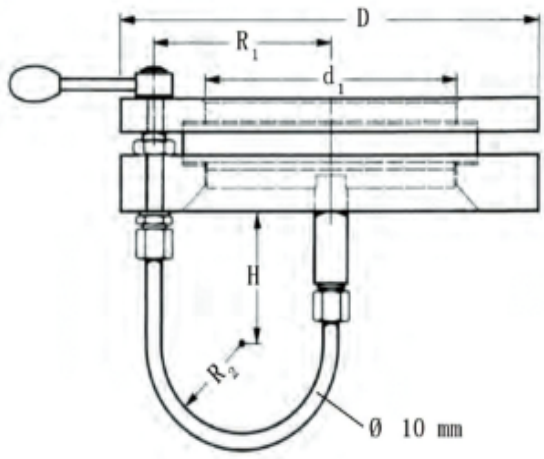


Number	Part Name
1	Anti loosening gasket
2	Gasket A2
3	Thermoplastic insulated handle
4	handle1.4305
5	Gasket 1.4305
6	Guide nut Zn8c
7	hex nut1.4401
8	Threaded sleeve
9	seal platePTFE
10	seal platePTFE
11	Tubular threaded connection1.457
12	Guide nut Zn8c
13	Crank 1.4310 or 1.4401
14	ratchet

Number	Part Name
15	grommet1.4305
16	Connection end 1.4310 or 1.4401
17	Alloy galvanized film
18	Triangular ring1.4517
19	Scraper fixing
20	Scraper made of silicone resin or PTFE
21	Etching pin 1.4571
22	Scraper shaft 1.4571 or 1.4401
23	Pressure spring 1.4310
24	Scraper handle 1.4571 or 1. 4401
25	Guide plug 1.4571 or 1.4401
26	Triangular ring1.4517
27	Guide nut 1.4571
28	Guiding pipeline 1.4571

LUMIGLAS®

Lumixing crank scraper SW BW dimension diagram



Size		1	2	3	4
Specifications	DN	100	125	150	200
Visual diameter	d1	125	150	175	225
Flange	D	220	250	285	340
Scraper	R1	93	105	120	147.5
	R2	41.5	47.5	55	68.75
	H	80.5	70.5	86	64.5
Number		7223.034.00	7223..35.00	7223.036.00	7223.037.00

accessory

	size	squeegee length	Silicone rubber code	PTFE Number
Accessory	1/100	115	9468.020.00	9468.031.00
	2/125	140	9468.021.00	9468.032.00
	3/150	165	9468.022.00	9468.033.00
	4/200	215	9468.023.00	9468.034.00
Waveform crank	Size	Number		
	1/100 2/125	9323.014.00 9323.014.00		
	3/150 4/200	9323.016.00 9323.016.00		

Ordering Guide:

For example: Lulaixing scraper SWIIBW, size 3, silicone rubber material scraper. If you need to order it together with the mirror lens, please inform us of the following:

-Mirror lens material

-Mirror lens specifications

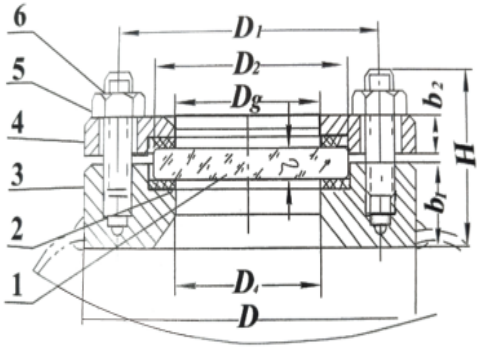
LUMIGLAS®

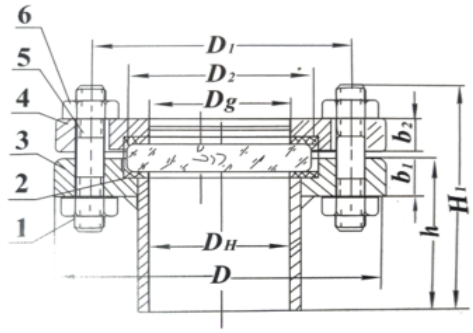
LumiStar with neck mirror

Purpose and Structure of Mirrors:

Mirrors are suitable for observing the operation of materials inside petroleum, chemical, and other industrial equipment. The materials include stainless steel, carbon steel, lining, etc. The maximum operating pressure is 500kgf/cm2, and the allowable medium temperature is -60~375C.

The glass material of the sight glass is tempered boron glass, high-pressure aluminum silicon glass, alkali resistant mica glass, and professional customization of various high-temperature and high-pressure container sight glasses.





Dg	PN	D	D1	b1	b2	dHxS	h	ÿ	≈H	≈H1					
50	10(0.98)	130	100	34/22	22	57X3.5	70		79	113	M12	6	4.7/4.2	1	11
	16(1.57)	130	100	34/24	24	57X3.5	70		79	116	M12	6	4.9/4.5	2	12
	25(2.45)	130	100	34/26	26	57X3.5	70		84	120	M12	6	5.1/5.0	3	13
80	10(0.98)	160	130	36/24	24	89X4	70		86	120	M12	8	6.8/6.4	4	14
	16(1.57)	160	130	36/26	26	89X4	70		91	127	M12	8	7.1/7.0	5	15
	25(2.45)	160	130	36/28	28	89X4	70		96	128	M12	8	7.4/7.4	HGJ 501 502-86- 6	HGJ 501 502-86- 16
100	10(0.98)	200	165	40/26	26	108X4	80		100	142	M16	8	12.0/10.9	7	17
	16(1.57)	200	165	40/28	28	108X4	80		105	143	M16	8	12.5/11.6	8	18
125	10(0.98)	225	190	40/28	28	133X4	80		105	143	M16	8	14.7/13.6	9	19
150	10(0.98)	250	215	40/30	30	159X4.5	80		110	150	M16	12	17.6/17.4	10	20

LUMIGLAS®

Lumistar Direct View Mirror

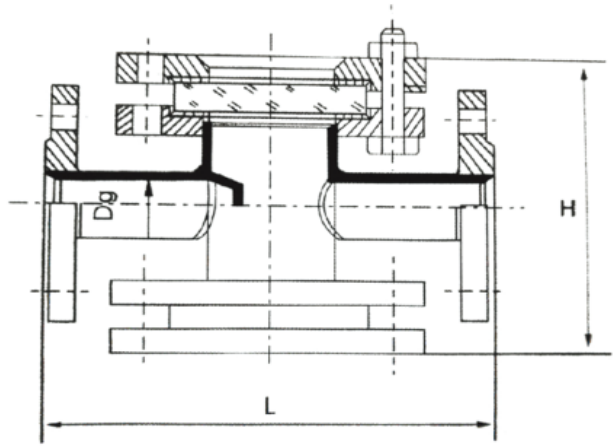
Straight through sight glass: used for observing the flow of liquid in pipelines such as reflux and cooling water before draining or receiving tanks.

Valve body material: available in various types such as carbon steel, stainless steel, rubber lining, fluorine lining, etc

Nominal pressure range: 10, 16, 25, 40, 64100 kilograms.

Working temperature: ≤ Below 300 ° C,

Nominal diameter: What temperature, pressure, and model can be customized non-standard for DN15 -DN200.



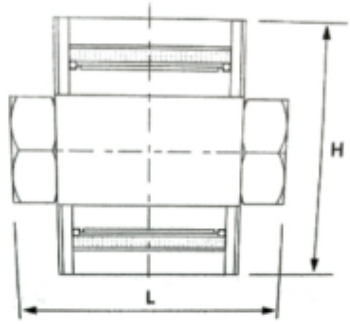
Main connection dimensions

Pg=10 kg/cm2						
Nominal diameter Dg		External dimensions		Glass plate		Weight (kg)
in	mm	L	H	diameter	thickness	
1/2"	15	200	130	65	10	4.5
3/4"	20	200	130	65	10	5
1"	25	200	130	65	10	5.5
1¹/4"	32	260	180	95	15	9.2
1¹/2	40	260	190	95	15	9.7
2"	50	320	210	140	20	17
2¹/2	65	320	235	140	20	19
3"	80	360	250	165	20	24
4"	100	360	270	165	20	26
5"	125	440	295	165	20	32
6"	150	440	335	165	20	36
8"	200	480	380			

LUMIGLAS®

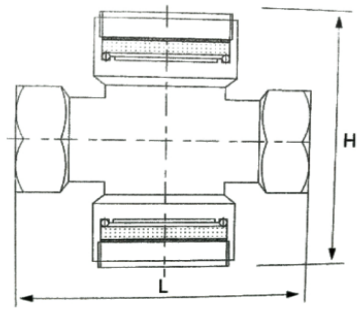
Impeller sight glasses

Inner wire eccentric impeller viewing glass



DN	L	H
6	85	60
8	85	60
10	85	70
15	85	70
20	95	80
25	110	80
32	135	95
40	135	95
50	155	105

Inner threaded straight-through impeller sight glass



DN	L	H
10	100	70
15	100	70
20	100	70
25	100	70
32	120	80
40	120	80
50	150	100

LUMIGLAS®

CF high vacuum window

Application scope: It is generally used in vacuum systems to observe the internal conditions of the vacuum chamber, and can grasp the changes inside the vacuum system in time.

Materials: low magnetic stainless steel 304 welded flange, 4J29 alloy, optical glass, etc.

Process: glass metal sealing process is adopted, and the common CF series flange is used.

CF high vacuum window

Technical index of temperature resistance of glass material:

1.Visible light BK7: ≤150℃ near infrared 400-2500nm ≥90
2.Visible light BORO33: ≤280℃
3.Visible light, near infrared aluminum silicate glass: ≤37℃ 400-2500nm≥90%
4.Visible light, near infrared mica glass: ≤375℃ 00-2500nm≥90%
5.Infrared ultraviolet visible light quartz glass: ≤450℃ 190-500nm≥90%
6.Infrared ultraviolet visible light sapphire glass: ≤500℃ 190-5500nm90%

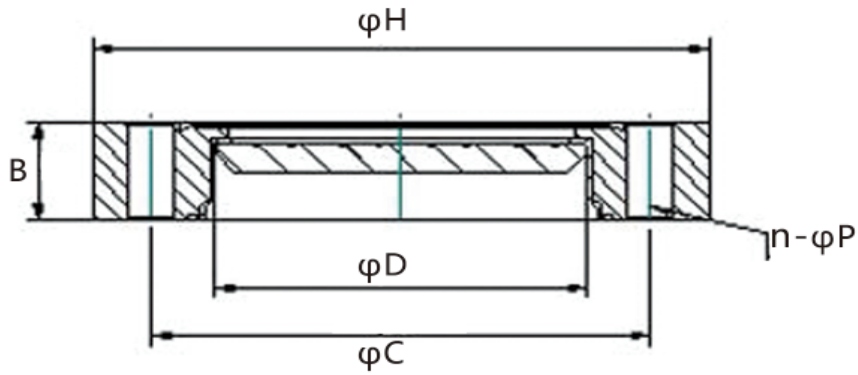
Leak rate: 1E10-10 Pam3/S;

LUMIGLAS®

CF high vacuum window

Description:

1. Flange size refers to CF blind plate flange size
2. The above models are generally in stock, and can be made any shape of flange according to customer requirements.



	φH	φC	φD	n-φP	B
CF16	34	27	14	6-φ4.3	7.3
CF25	54	43	23	6-φ6.6	14
CF35	70	58.7	38	6-φ6.6	16
CF50	86	72.4	50	8-φ8.4	17
CF63	114	92.2	62	8-φ8.4	20
CF100	152	130.3	95	16-φ8.4	20
CF150	202	181.1	146	20-φ8.4	22
CF200	253	231.9	193	24-φ8.4	24.5

High pressure straight through sight glass to US standard

Use:

For monitoring filling and flow in pipelines. The sight glass enables reliable monitoring of the function and performance of individual devices as well as of entire systems.

Operating conditions:

Operating pressure: up to 160 bar
Operating temperature: at borosilicate glass max.280℃ for quartz glass up to 500℃

Installation position:

any

Special versions:

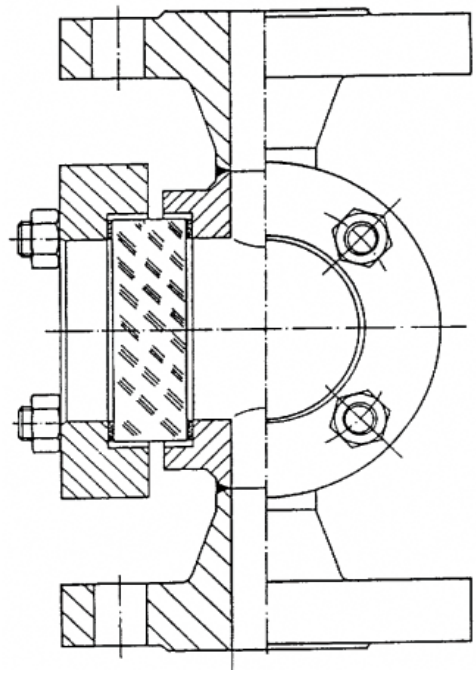
with rotor
-Flap
-Viewing glass lamps

Materials:

all weldable materials possible

Connection options:

Connection flanges according to DIN to PN 160
Connection flanges according to ANSI up to 1.500 LBS
welding Internal thread



High voltage mirror 1500LB

Dimensions:

Operating pressure and nominal widths influence the boom length.

Certificates: (Option)

WAZ according to EN 10204-2.2 or
WAZ according to EN 10204-3.1

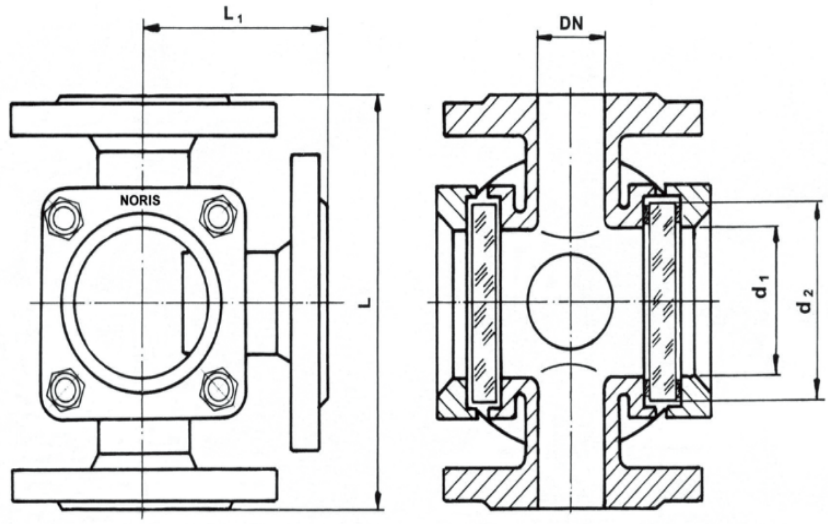
LUMIGLAS®

LMX 972

American standard three-way mirror

The flange connection complies with DIN-PN16; PN25; PN40;

Use: For visual inspection of filling and flow in pipelines.
Lumistar optical lenses enable reliable monitoring of the function and performance of individual devices as well as whole plants



Operating conditions:

Operating pressure : 16 to 40 bar
Operating temperature :150°or 280℃

Installation position:any

Observe flow direction

special design:

with ANSI flanges
with other lengths
with different nominal connection widths
with weld ends
with heating jacket
with sight glass lamps
with safety seal
according to Lumistar design 885

Materials:All weldable materials

Housing ： Steel or stainless steel according to customer requirements
Glass plates：Borosilicate glass DIN 7080Sodium lime glass DIN 8902
Seals ：Graphite (or as desired)

Order example:

Three-way sight glass design 972
wN1.4571 with borosilicate glass DIN 7080DN 50 PN 16

Dimensions:

DN	L	L_1	d_1	d_2
15	130	65	32	45
20	150	75	32	45
25	160	80	48	63
32	180	90	48	63
40	200	100	65	80
50	230	115	80	100
65	290	145	80	100
80	310	155	100	125
100	350	175	125	150

Materials and thicknesses of the sight glass panel view Lumistar 880
DN 125-250 available on request.

American standard four-way mirror

The flange connection complies with DIN-PN16; PN25; PN40;

Use: For visual inspection of filling and flow in pipelines.
Lumistar optical lenses enable reliable monitoring of the function and performance of individual devices as well as whole plants

Operating conditions:

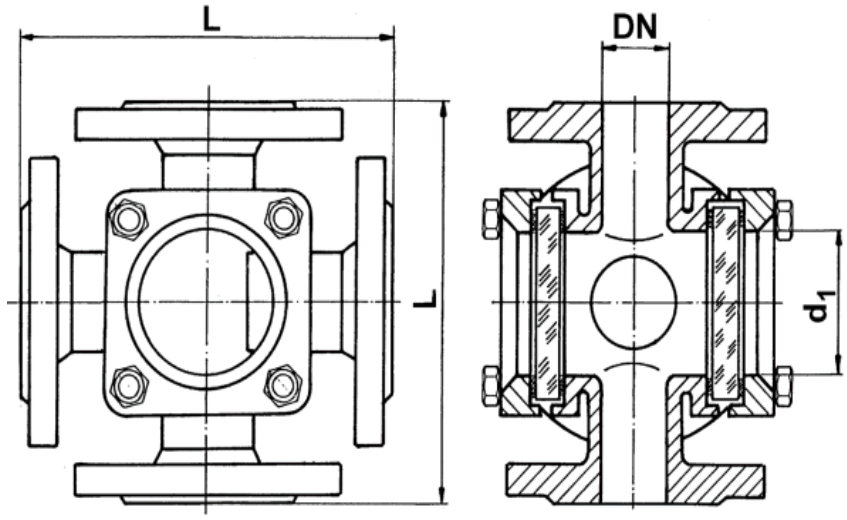
Operating pressure : 16 to 40 bar
Operating temperature :150°or 280℃

Installation position:

any

special design:

with ANSI flanges
with other lengths
with different nominal connection widths
with weld ends
with heating jacket
with sight glass lamps
with safety seal
according to Lumistar design 885



Materials: All weldable materials

Housing ： Steel or stainless steel according to customer requirements Glass plates：
Borosilicate glass DIN 7080 Sodium lime glass DIN 8902
Seals ：Graphite (or as desired)

Order example:

Three-way sight glass design 972
wN1.4571 with borosilicate glass DIN 7080 DN 50 PN 16

Dimensions:

DN	L	d_1	d_2
15	130	32	45
20	150	32	45
25	160	48	63
32	180	48	63
40	200	65	80
50	230	80	100
65	290	80	100
80	310	100	125
100	350	125	150

Werkstoffe und Stärken der Schauglasplattensiehe dazu Lumistar-Bauform 880
DN 125- 200 auf Anfrage lieferbar

American Standard right-angle sight glasses

Flanged right-angle sight glasses

Use: For visual inspection of filling and flow in pipelines. Lumistar sight glasses enable reliable monitoring of the function and performance of individual devices as well as of entire plants

Operating Conditions:

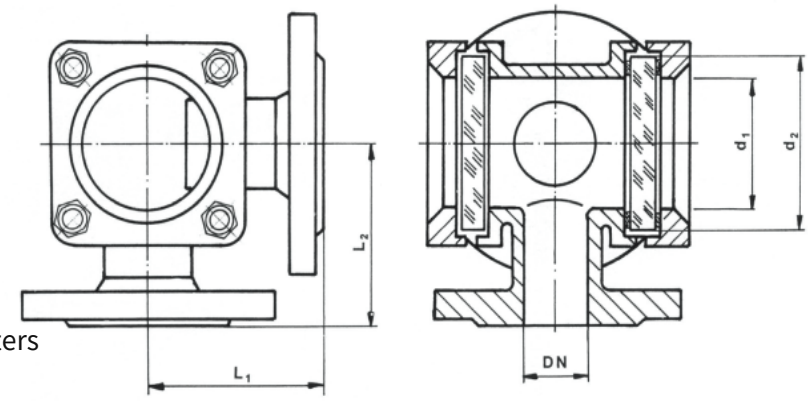
Operating Pressure:10 to 40 bar
Operating temperature:150 ° C or 280 ° C

Installation position:

anyPay attention to the flow direction

Special design:

with ANSI flanges
with other lengths
with different connection nominal diameters
with welds
with sight glass lights
with safety seal according to Lumistar type 885
or according to customer requirements

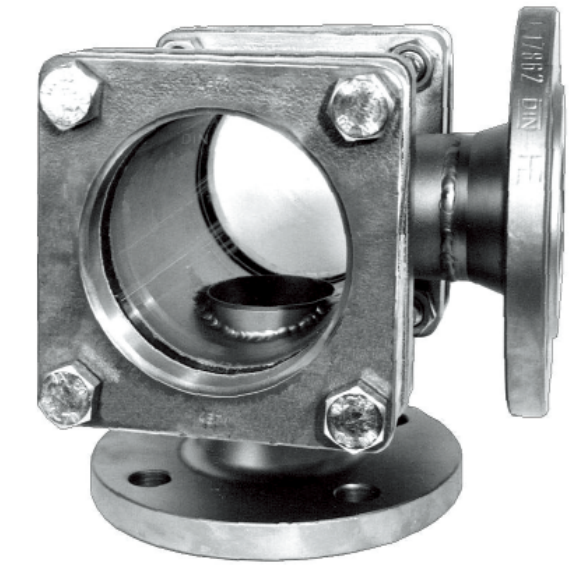


Materials:All weldable materials

Housinglass	Steel or stainless steel according to customer requirements
Glass	Borosilicate Glass DIN7080 Sodium lime alas DIN 8902
platesSeals	Graphite (or as desired)

Order example:

Corner sight glass type 920wN 1.4571
with borosilicate glass DIN7080 DN50 PN16



Dimensions:

DN	$L_1 = L_2$	d_1	d_2
15	90	48	63
20	95	48	63
25	100	65	80
32	105	80	100
40	115	80	100
50	125	100	125
65	145	100	125
80	155	100	125
100	175	125	150

Overall lengths according to DIN 3202, series F32 (PN10-40)
DN125-DN250 available on request.

LUMIGLAS®

LMX 880-A

ANSI Straight-Through Sight Glass

Flange connections conform to ANSI-150/300LB

Use: For visual inspection of filling and flow in pipelines. Lumistar sight glasses enable reliable monitoring of the function and performance of individual devices as well as entire systems. The standard drip nose also indicates even the smallest flow rates.

Service conditions:

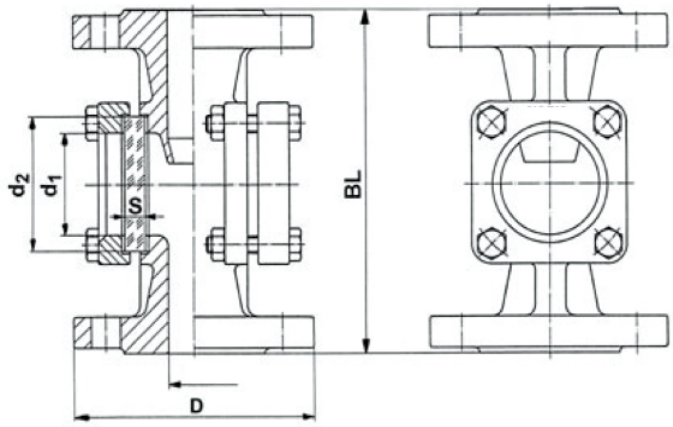
Operating pressure: 16 bar at 150 lbs
40 bar at 300 lbs
Operating Temperature: 150 ° C or 280 ° C

Installation position:

anyPay attention to the flow direction

Special versions:

with - rotor or flap
- Heating jacket
- Sight Glass Lights



Materials:

Grey cast iron GG 25 (EN-GJL-250) max.150 lbs
Cast steel GS-C25(1.0619 / GP240GH)
Stainless steel WN 1.4408

Housing	GG25	GS-C 25	1.4408
Lid	GG25/ S235JRG2	GS-C 25/ S235JRG2	1.4408/ 1.4301
Screw	4.6/5.6vz		A4-70
Glass plates	Borosilicate glass DIN 7080Soda-lime glass DIN 8902		
Seals	Graphite, (or as desired)		

Dimensions:

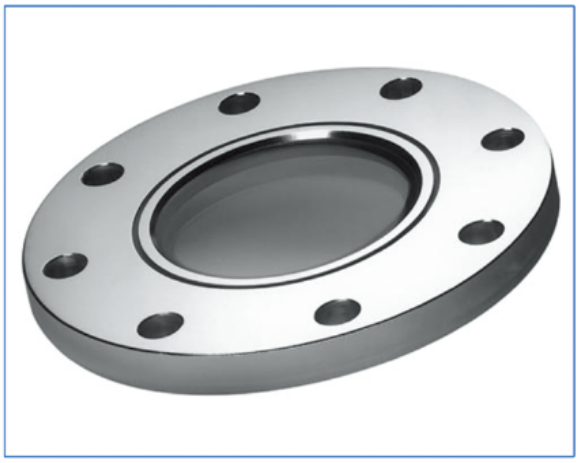
ANSI	D		BL (DIN F1)	d_1	Glasplatte		
	150 lbs	300 lbs			d_2	S 16 bar	S 40 bar
1/2“	89	95,2	130	32	45	10	10
3/4“	98	117,3	150	32	45	10	10
1“	108	123,8	160	48	63	10	15
1 1/4“	118	133,4	180	48	63	10	15
1 1/2“	127	155,6	200	65	80	12	20
2“	152	165,1	230	80	100	15	25
2 1/2“	178	190,5	290	80	100	15	25
3“	191	209,6	310	100	125	20	30
4“	228 *	254,0	350	125	150	25	32
5“	254 *	279,4	400	150	175	25	a.A.
6“	279	317,5	480	175	200	30 **	a.A.
8“	343 *	381,0	600	175	200	30 **	a.A.
10“	Siehe Lumistar Bauform 112-A						

* not available in GG 25, as D only available according to DIN PN 16

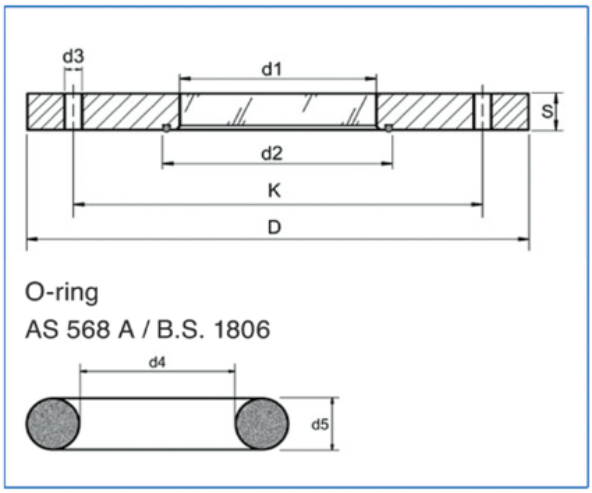
**16 bar only available with borosilicate glass

LUMIGLAS®

Sintering observation window glass



Sightglass flange DN 150



Typical assembly

Application:

For base flanges to DIN 28117 or similar
For weldnecks with flat face

IMPORTANT: Only for use with parallel flat face flanges without seal recess. Maximum tightening torque 20 Nm. We thereforerecommend the use of Belleville spring washers,2 pcs. foreach connection hole.

Advantages:

· High security
· Flush glass / metal border on outer side for easy cleaning for sterileapplications
· Maximum viewing area.

Approvals:

-Approval to the pressure vessel guideline as part of a pressure vessel(for material duplex stainless steel 1.4462)

Technical data:

· Test base: DGRL97/23/EG,AD 2000 standards, DIN 7079-1 May 1999
· Materials to Vd specifications and the respective DIN/EN standards.
· Glass quality: Borosilicate glass to DIN 7080

Certificates:

To be supplied against extra charge to DIN EN 10204

Pressure: -1 to 16 bar (see table)

Temperatures:

Ring materials:

1.4462	-30℃ ° to +280 ° c
2.4602	-60℃ ° to +300 ° c
2.4605	-60℃ ° to +300 ° c
2.4610	-60℃ ° to +300 ° c

Dimensions:

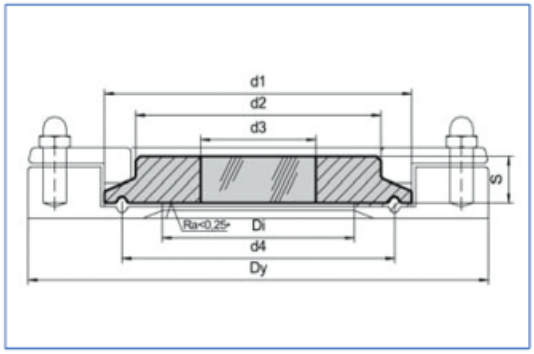
DN	PN	D	K	S	d1	d2	d3	Number of holes	O-Ring* d4 x d5	Spring washers*
50	16	165	125	21	50	66	18	4	58,74 x 3,53	31,5/16,3x1,25
65	16	185	145	23	70	86	18	4	78,97 x 3,53	31,5/16,3x1,25
80	16	200	160	23	80	96	18	8	88,50 x 3,53	31,5/16,3x1,25
100	16	220	180	23	90	116	18	8	107,5 x 3,53	31,5/16,3x1,25
125	16	250	210	25	110	141	18	8	132,9 x 3,53	31,5/16,3x1,25
150	16	285	240	28	130	165	22	8	158,34 x 3,53	40/20,4x1,5
200	10	340	295	30	140	208	22	8	202,8 x 3,53	40/20,4x1,5

* Not contained in our delivery

LUMIGLAS®

Sintered welded lamp viewing glass

NA-Connect™ sightglass



Typical assembly

Application:

For Lumistar - connections with connection sizes to DIN 32 676/ ISO 2852

Advantages:

· Extremely compact construction
· High security
· Easy installation
· For sterile applications
· CIP cleaning possible

Technical data of Lumistar sightglasses:

· Test base: DGRL97/23/EG,AD 2000 standards, DIN 7079-1 May 1999
· Materials to Vd specifications and the respective DIN/EN standards.
· Glass quality: Borosilicate glass to DIN 7080

Certificates:

To be supplied against extra charge to DIN EN 10204-3.1

Operating conditions:

Temperatures:

Ring materials:

1.4462	-30℃ ° to +280 ° c
2.4602	-60℃ ° to +300 ° c
2.4610	-60℃ ° to +300 ° c

Technical data of NA-Connect TM system:

Materials welding flange	316L/1.4435	Not contained in our delivery
Materials holding ring	316L/1.4404	
Nominal pressure	7bar	
Nominal temperature	150 ° c	

Homologations : ASME BPE 2005

Dimensions：

Nominal diameter		PN	d1	d2	d3	d4	S	Dy	Di
DIN	Tube OD								
NAC-DIN-20	-	16	34,0	18,0	10	27,5	7	70	20,0
NAC-DIN-40	(NAC-OD-1½")	16	50,5	38,0	25	43,5	10	85	35,5
NAC-DIN-50	(NAC-OD-2")	16	64,0	51,0	30	56,5	10	100	48,5
-	(NAC-OD-2½")	16	77,5	63,5	35	70,5	10	112	60,2
NAC-DIN-65	(NAC-OD-3")	10	91,0	76,0	40	83,5	10	131	72,0
NAC-DIN-80	-	10	106,0	88,9	50	97,0	10	146	84,9
NAC-DIN-100	(NAC-OD-4")	10	119,0	101,0	55	110,0	12	170	97,6

LUMIGLAS®

Lumistar 73 sintered sight glass

Metaglas Disc in DIN 28120
Sight Port Assembly

Applications:

As a replacement for conventional glass discs in the followingassemblies:

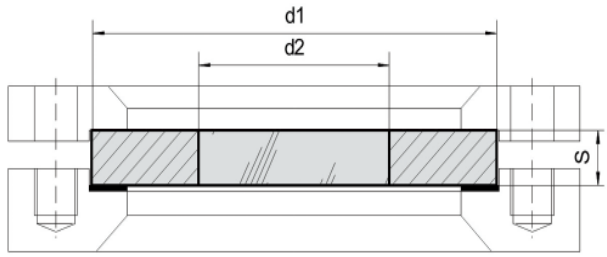
· Circular sight ports to DIN 28120 or similar
· Circular sight ports to DIN 28121
· Screwed sight glasses similar to DIN 11851
· Sight flow indicators

Advantages:

-Reliability against total failure - the possibility of suddenunexpected rupture is totally excluded
-High resistance to bending and over-tightening offerssimple and fast installation with no risk of breakage
-Extreme resistance to impact, pressure and temperature
-Reusable in the same or other applications - conventionalglass is not
-Wide acceptance in the European & American chemical industries

Operating conditions:

Temperature: -60°C to +300°C
Pressure: Up to 64 bar
Higher pressures possible



Aprovals and technical data:

Manufactured and tested in conformance with:
- Pressure Equipment Directive 97/23/EG 02/98, Module H/H1 (DIN/EN/so 9001
- AD Standards WO/TRD 100
- Factory Mutual Approval
- Sight glass fused to metal conforming to DIN 7079
- Borosilicate glass to DIN 7080

Material certificates

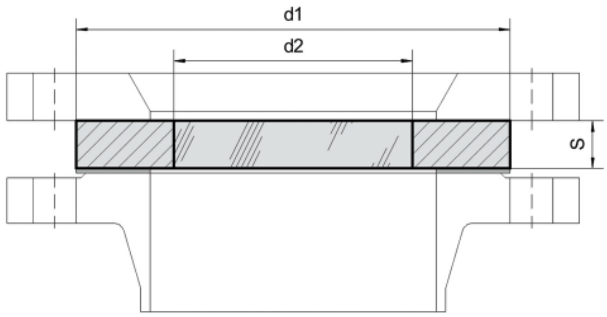
Certificate of conformity to EN 10204-3.1B or 3.1A

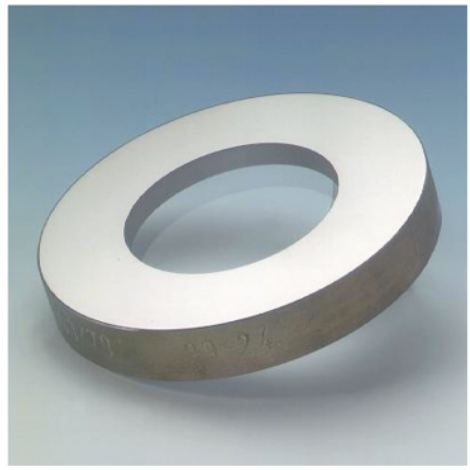
Ring materials	Operating temperature
Carbon Steel (1.0570)	-10°C to +300°C
Duplex Stainless Steel (1.4462)	-30°C to +280°C
Hastelloy C-22 (2.4602)	-60°C to +300°C
Hastelloy C-4 (2.4610)	-60°C to +300°C
Other materials available	

d1	d2	Pressure rating				
		10 bar	16 bar	25 bar	40 bar	64 bar
		S				
45	25	10	10	10	10	15
60	35	10	10	12	15	18
63	35	10	10	12	15	20
80	45	10	12	15	20	22
100	55	12	15	20	25	28
125	65	15	20	25	25	30
150	70	20	25	30	30	32
175	80	20	25	30	30	35
200	100	25	30	30	35	40
250	120	30	30	35	40	-

LUMIGLAS®

Lumistar 76 sintered sight glass





Application:

As a replacement for conventional glass in the following assemblies:

· Circular sight ports to DIN 28121

· Plus any other assemblies where the glass is of the same dimensions, welding neck flanges with flat or raised face

Operating conditions:

Temperature: -60°C to +300°C
Pressure: Up to 40bar
Higher pressures possible

Advantages:

-Reliability against total failure - the possibility of sudden unexpected rupture is totally excluded
-High resistance to bending and over-tightening offers simple and fast installation with no risk of breakage
-Extreme resistance to impact, pressure and temperature
-Reusable in the same or other applications - conventional glass is not
-Wide acceptance in the European & American chemical industries

Aprovals and technical data:

Manufactured and tested in conformance with:
- Pressure Equipment Directive 97/23/EG 02/98, Module H/H1 (DIN/EN/so 9001
- AD 2000 Standards W0/TRD 100
- Factory Mutual Approval
- Sight glass fused to metal conforming to DIN 7079
- Borosilicate glass to DIN 7080

Ring materials	Operating temperature
Carbon Steel (1.0570)	-10°C to +300°C
Duplex Stainless Steel (1.4462)	-30°C to +280°C
Hastelloy C-22 (2.4602)	-60°C to +300°C
Hastelloy C-4 (2.4610)	-60°C to +300°C
Other materials available	

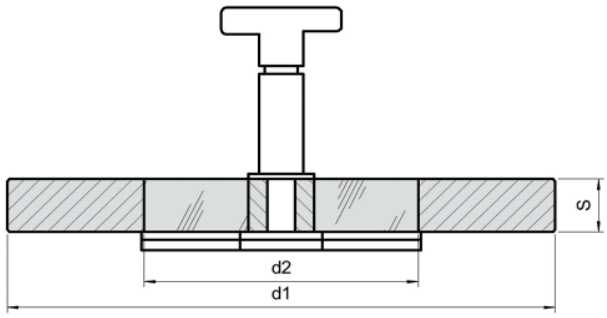
Material certificates

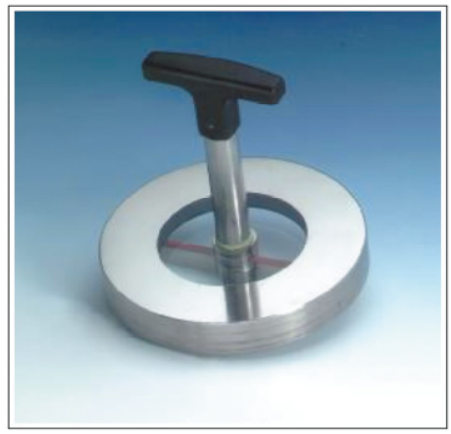
Certificate of conformity to EN 10204-3.1B or 3.1A

Nominal bore	Pressure rating					
	16 bar			40 bar		
	d1	d2	S	d1	d2	S
25	70	30	10	70	30	15
32	82	40	12	82	40	15
40	92	45	15	92	45	20
50	107	50	15	107	50	20
65	127	70	15	127	70	25
80	142	75	20	142	75	25
100	162	80	20	162	80	25
125	192	100	20	192	100	30
150	218	100	25			
200	273	120	30			

LUMIGLAS®

Lumistar sintered with scraper sight glasses 73.SW





Wipers may be used to prevent the cristallisation of mediaonto the glass and to remove dust and dirt.
Centrally operated wipers are mounted through thesightglass disc on either DIN 28120(DN 50 - 200), DIN11851(DN 65 -125) or similar sightglasses

Advantages:

- Security against total failure
- Simple installation
- Can be combined with sight glass luminaries
- Long operating life

Ring materials	Operating temperature
Carbon Steel (1.0570)	-10°C to +150°C
Duplex Stainless Steel (1.4462)	-30°C to +150°C
Hastelloy C-22 (2.4602)	-60°C to +150°C
Alloy 59 (2.4605)	-60°C to +150°C
Hastelloy C-4 (2.4610)	-60°C to +150°C

Approvals and technical data:

Manufactured and tested in conformance with:

- Pressure Equipment Directive 97/23/EG 02/98,Module H(DIN/EN/Iso 9001
- AD2000 Standards wO/TRD 100
- Sight glass fused to metal conforming to DIN7079 PN10 to PN16, higher pressure ranges possible
- Max.operating temperature 150 °c
- Ring materials 1.4462,2.6402,2.4605,2.4610 amongst others
- Gland material 1.3912 (Alloy 36)
- Glass quality: Borosilicate to DIN 7080/DIN 7079

Material certificates

Certificate of conformity to EN 10204-3.1B or 3.1A

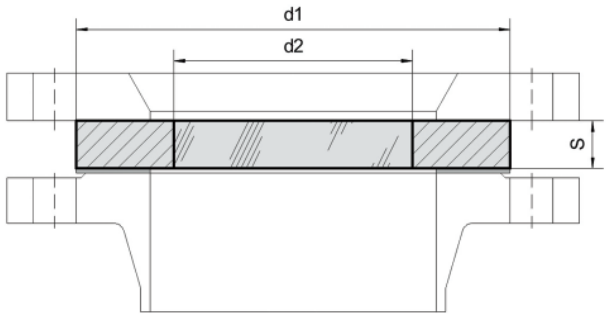
Technical data - wiper:

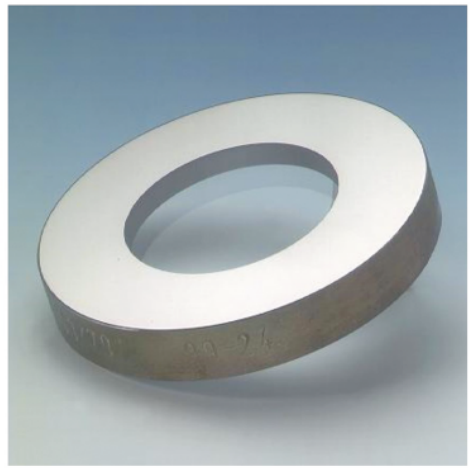
Wiper blades silicon rubber, PTFE, and othersAll product contact parts are of stainless steelrings - VITON

d1	d2	Pressure rating	
		10 bar	16 bar
		S	
80	45	12	12
100	55	15	15
125	65	15	20
150	70	20	25
175	80	20	25
200	100	25	30
250	120	30	30

LUMIGLAS®

Lumistar 176 sintered sight glass





Application:

As a replacement for conventional glass in the following assemblies:

· Circular sight ports to DIN 28121

· Plus any other assemblies where the glass is of the same dimensions, welding neck flanges with flat or raised face

Operating conditions:

Temperature: -60°C to +300°C
Pressure: Up to 40bar
Higher pressures possible

Advantages:

-Reliability against total failure - the possibility of sudden unexpected rupture is totally excluded
-High resistance to bending and over-tightening offers simple and fast installation with no risk of breakage
-Extreme resistance to impact, pressure and temperature
-Reusable in the same or other applications - conventional glass is not
-Wide acceptance in the European & American chemical industries

Aprovals and technical data:

Manufactured and tested in conformance with:
- Pressure Equipment Directive 97/23/EG 02/98, Module H/H1 (DIN/EN/so 9001
- AD 2000 Standards W0/TRD 100
- Factory Mutual Approval
- Sight glass fused to metal conforming to DIN 7079
- Borosilicate glass to DIN 7080

Ring materials	Operating temperature
Carbon Steel (1.0570)	-10°C to +300°C
Duplex Stainless Steel (1.4462)	-30°C to +280°C
Hastelloy C-22 (2.4602)	-60°C to +300°C
Hastelloy C-4 (2.4610)	-60°C to +300°C
Other materials available	

Material certificates

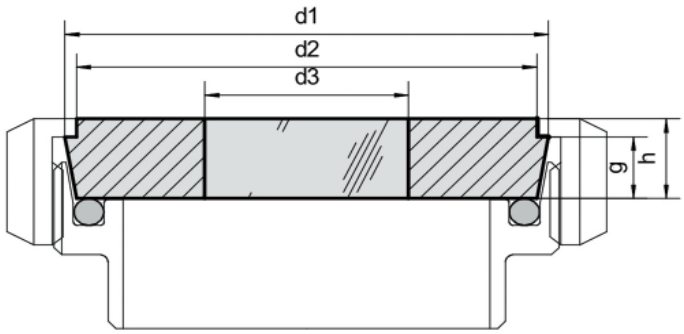
Certificate of conformity to EN 10204-3.1B or 3.1A

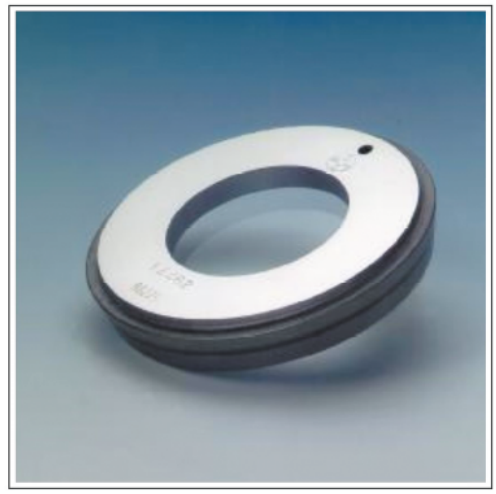
Nominal size	Pressure rating								
	150 psi			300 psi			600 psi		
	D1	D2	S	D1	D2	S	D1	D2	S
1"	63	35	10	70	40	12	70	40	18
1½"	82	45	12	92	50	15	92	50	22
2"	100	55	15	107	50	20	107	50	24
3"	134	70	15	145	70	20	145	70	28
4"	171	80	20	171	80	25	190	80	32
5"	192	100	20	-	-	-	-	-	-
6"	218	100	25	244	120	35	263	100	40
8"	273	120	30	305	125	35	315	100	40
10"	336	150	30	358	130	35	-	-	-

LUMIGLAS®

Lumistar 81sintered sight glass

Sight Glass Discs for Screwed Fittings to DIN 11851





For：

- Screwed sightglass fitting to DIN 11851
- for use in food processing, cosmetic and pharmaceuticalapplications where a product or process has to be observed or controlled inside stirred vessels, tanks, dryers, columns, centrifuges, mixers, evaporators, etc.

Operating conditions:

Temperature: -60°C to +300°C
Pressure: Up to 40bar
(higher pressures on request)

Advantages:

- Perfect sealing to atmospheric side
- Easy, economical installation
- Long operating life
- Security against total failure

Approvals and technical data:

Manufactured and tested in conformance with:
- Pressure Equipment Directive 97/23/EG 02/98, Module H (DIN/EN/SO 9001
- AD 2000 Standards W0/TRD 100
- Sight glass fused to metal conforming to DIN 7079
- Borosilicate glass to DIN 7079

Ring materials	Operating temperature
Duplex Stainless Steel (1.4462)	-30°C to +280°C
Hastelloy C-22 (2.4602)	-60°C to +300°C
Alloy 59 (2.4605)	-60°C to +300°C
Hastelloy C-4 (2.4610)	-60°C to +300°C

Material certificates

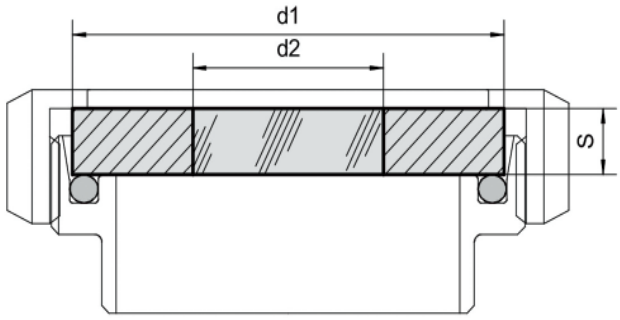
Certificate of conformity EN 10204-3.1B or 3.1A

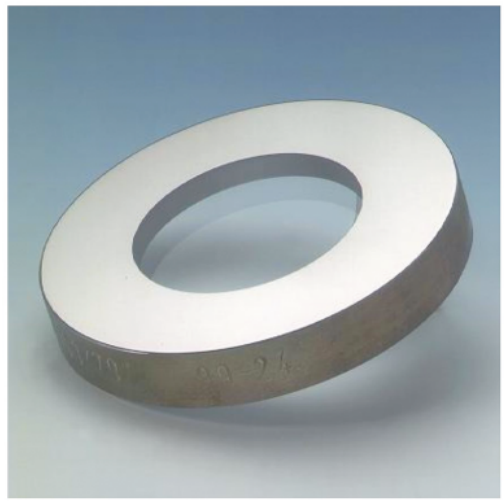
Nominal bore DN	d1	d2	d3	h	g	Pressure rating [bar]
32	50	41	23	13	10	40
40	56	48	25	13	10	40
50	68.5	61	35	14	11	25
65	86	79	45	16	12	25
80	100	93	50	16	12	16
90	111	103	55	20	15	16
100	121	114	60	20	15	16
125	150	137	70	23	17	16
150	176	163	80	24	18	16

LUMIGLAS®

Lumistar 82 sintered sight glass

for Screwed Sightglass Fittings similar to DIN 11851





For：

- Screwed sightglass fitting to DIN 11851
- for use in food processing, cosmetic and pharmaceuticalapplications where a product or process has to be observed or controlled inside stirred vessels, tanks, dryers, columns, centrifuges, mixers, evaporators, etc.

Operating conditions:

Temperature: -60°C to +300°C
Pressure: Up to 40bar
(higher pressures on request)

Advantages:

- Reliability against total failure - the possibility of suddenunexpected rupture is totally excluded
- Simple assembly
- Long woring life

Ring material	Operation temperature
Duplex Stainless Steel (1.4462)	-30°C to ~ +280°C
Hastelloy C-22(2.4602)	-60°C to ~ +280°C
Hastelloy C-4(2.4610)	-60°C to ~ +280°C
Other materials available	

Approvals and technical data:

Manufactured and tested in conformance with:
- Pressure Equipment Directive 97/23/EG 02/98, Module H (DIN/EN/SO 9001
- AD 2000 Standards W0/TRD 100
- Sight glass fused to metal conforming to DIN 7079
- Borosilicate glass to DIN 7079

Material certificates

Certificate of conformity EN 10204-3.1B or 3.1A

Nominal bore DN	d1	d2	S	Max.operating Pressure [bar]
32	45	25	10	40
40	50	25	10	40
50	63	35	10	16
65	80	45	10	10
80	93	50	10	10
100	113	60	15	16
125	142	75	20	16
150	166	80	20	16

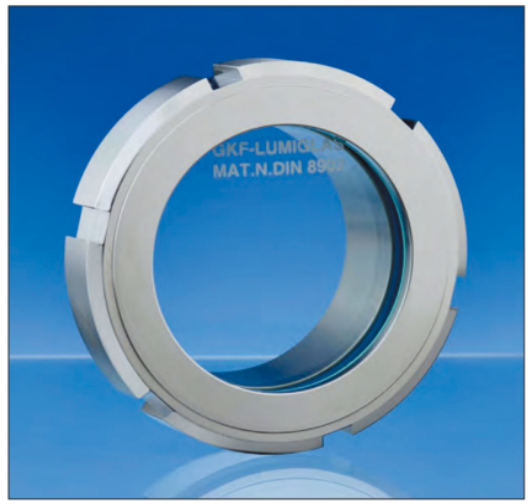
LUMIGLAS®

Rumi threaded sight glasses MV

For Screwed Sightglass Fittings similar to DIN 11851
Threaded brackets are weldable
According to DIN11864-1,

It can be used in sterile areas:

It is used to observe the inside of bioreactors, laboratory mixers, filters, iron drums, oil tanks, agitators, separators, pipes and other similar closed vessels. Suitable for use in the pharmaceutical and food industries. For example: brewery, cattleDairy processing enterprises.



Operating conditions :

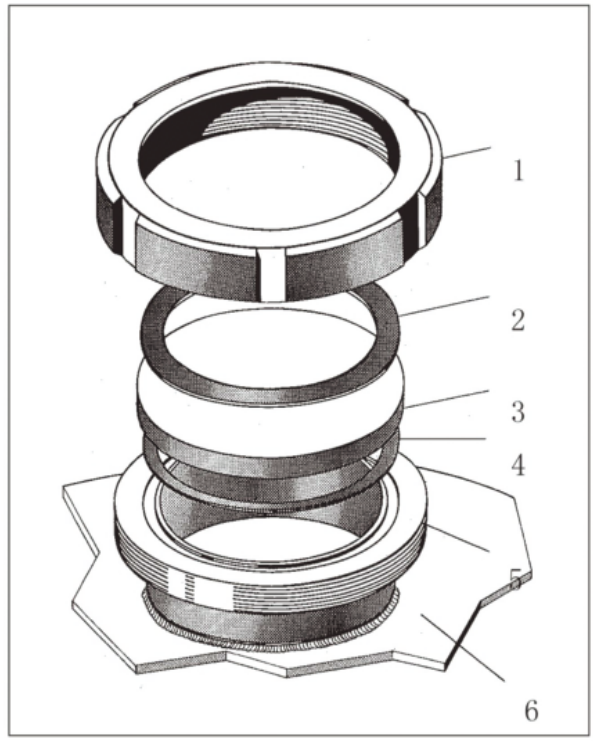
Pressure: up to 6 bar (higher pressure device can be customized), vacuum

Temperature:Up to 280C, choose the appropriate gasket according to the temperature.

Combination:

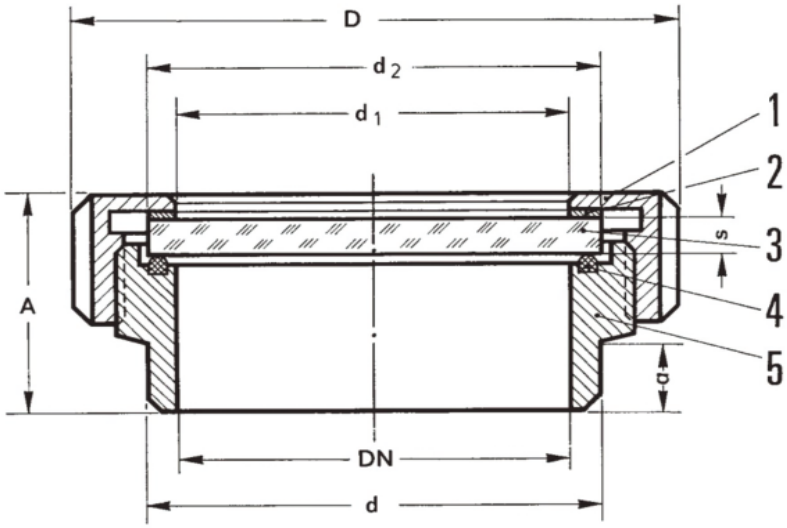
- 1. Different Rumi spotlights
- 2.2 DN50: Scraper model SW1
- 3.2 DN125: spotlight-scraper combination

No.	Component name	Material
1	Guide nuts	Stainless steel 1.4301 (1.4307)
2	Gaskets	Klinger Sil C-4400
3	Glass	Soda-lime glass: heat-resistant tempered glass, DIN 8902, Maximum permissible operating temperature: 150 ° C
		Borosilicate glass: heat-resistant tempered glass, DIN 7080 Maximum permissible operating temperature: 280 ° C
4	O-rings	Viton, PTFE, silicone rubber, EPDM
5	Welded brackets	Stainless steel 1.4301 (1.4307) ; 1.4404
6	Container walls	



LUMIGLAS®

Schematic diagram of the dimensions of the Rumi threaded connection type sight glass



1. Lock nuts
2. Gaskets
3. Glass
4. Seals
5. Welded brackets

		1	2	3	4	5	6
Nominal width	DN	50	65	80	100	125	150
Visible diameter	d_1	50	65	80	100	125	150
Glass	d_2	63	80	94	113	141	166
	s	10	12	12	15	15	15
Viewfinder	D	92	112	127	148	178	210
	d	61	79	93	114	136	163
	A	44	52	57	69	59	62
	a	21	24	25	34	22	22

Ordering Guide：

Rumi threaded sight glasses according to DIN 11851
Nominal width: DN 80, PN 6bar

LUMI GLAS®

Lumi Aseptic Threaded Connection Type Sight Glasses LMV-S

For Screwed Sightglass Fittings similar to DIN 11851
Threaded brackets are weldable
According to DIN11864-1,
Sterile threaded tubes and sintered sight glass lenses are used for visual observation of the reaction process. Threaded brackets can be welded.

Scope of application:

It is used to observe the inside of bioreactors, laboratory mixers, filters, iron drums, oil tanks, agitators, separators, pipes and other similar closed vessels. Suitable for use in sterile areas and in the pharmaceutical and food industries.

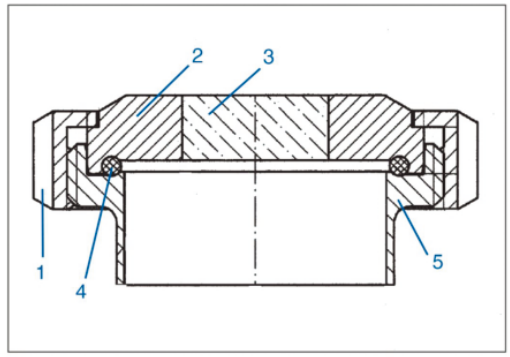
Operating conditions :

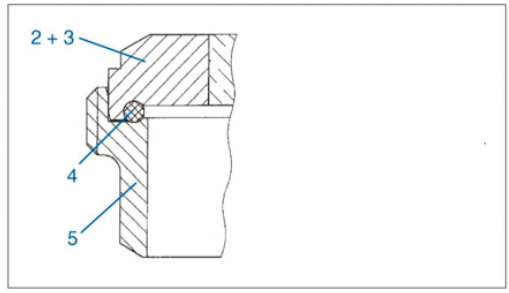
Max. 25 bar, depending on the size of the unit, vacuum

Rumi sterile bolt-on sight glasses LMV-S

Parts and optional materials, view right

No.	Part name	material
1	Guide nuts	stainless steel1.4301（1.4307）or1.4404
2	Sintered sight glasses	The material of the ring is selectable： 1.4462~280℃ 2.4602,24605， 3.4610~280℃
3		Borosilicate glass max. 25 Bar
4	gasket	EPDM/HNBR/MVQ
5	Welded brackets	stainless steel 1.4404 or 1.4435



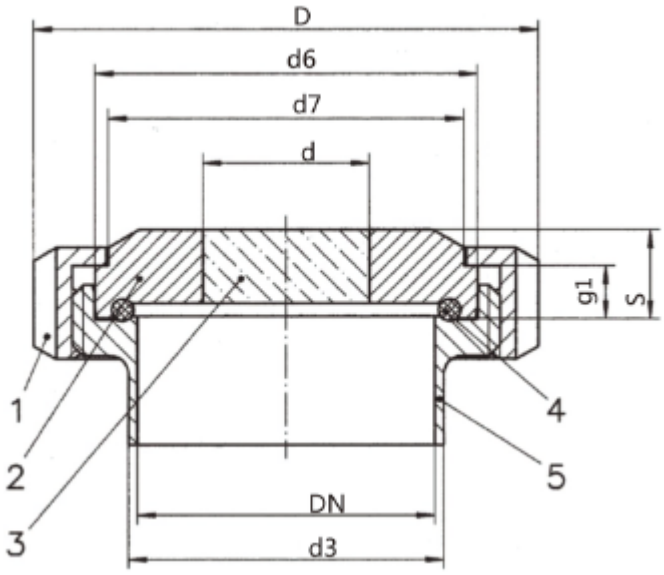


Installation

After the bracket (5) is welded to the container wall, the sealing ring (4) is sinteredThe sight lens (2) and (3) are stacked sequentially as shown in the figure, and pass through the guideFix to the nut (1) and the welding bracket (5). Note: Please detect sintered visionLens lens (2 3) and O-ring (4), whether or not mounted on the device (5)The exact location!

LUMIGLAS®

Schematic diagram of electrical data and dimensions of the Rumi aseptic threaded connection sight glasses LMV-S



1	Nut
2	Sintered sight lenses
3	O-rings
4	Between the welds

		1	2	3	4	5
Nominal width	DN	40	50	65	80	100
device	D	78	92	112	127	148
device	d3	41	53	70	85	104
O-rings		40 x 5	52 x 5	68 x 5	83 x 5	102 x 5
Visible diameter	d	28	34	37	47	55
exterior -φreverse side	d6	54,9	66,9	84,9	98,9	118,9
exterior -φreverse side	d7	48	61	79	93	114
Total Strength	s	14	15	20	20	25
Strength	g1	10	11	12	12	15
Maximum pressure	bar	25	25	16	16	10

Combination

Can be combined with different aseptic technology Lumi spotlights, in hazardous and non-hazardous areas.

Ordering Guidelines

For example - sterile threaded mirrors, similar to DIN 11864.1
Nominal width: DN 80 PN, max. 16 bar, 300 ° C
Material：Whether sintered sight glasses need to provide adapters for sterile Rumi spotlights.

LUMIGLAS®

Lumistar Flow sight glasses

The base DIN2642 with double-sided flangesFor installation on pipelines

Suitable for: Visual inspection and monitoring of the filling volume and flow of material in the pipeline.

Connecting flange :
Flange according to DIN2642 (connection size PN10)

Length of construction: DIN 3202F1

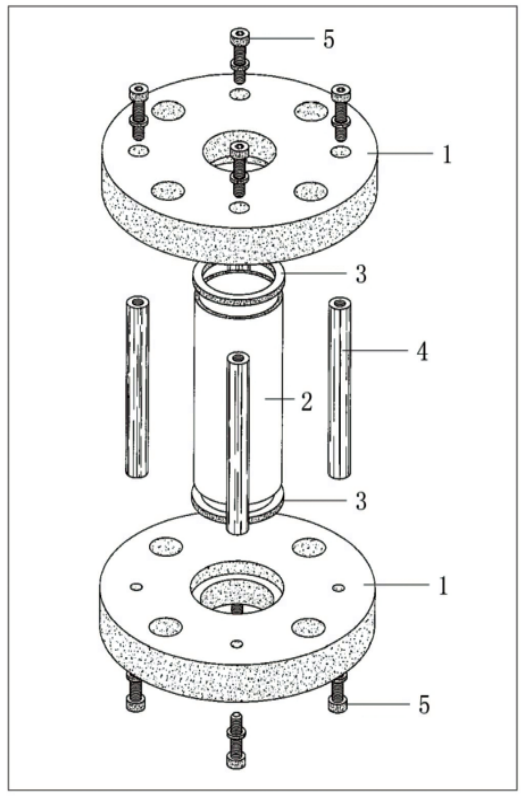
Operating Environment: Pressure: ~6bar, according to different wall thickness (higher compressive strength can be customized)

Operating temperature : up to 220 ° C

Lumi Flow sight glasses

Parts and optional materials, view right

No	Part	Material
1	Link flange	Stainless steel 1.4571 or others
2	Glass cylinder	Borosilicate glass (DURAN)
3	Ring gaskets	silicone or others
4	Spacer shaft	stainless steel 1.4301 or other
5	Connecting bolts	A2 or others (with coils)



Schematic diagram of the structure of the flow sight glass

Special Structures :
- Stainless steel or plexiglass with impact protection
- ANSI Flange - Special structure length.

Installation
-The flow sight glass bolts the joint flange with the matching gasket to the pipe on the structural surface.

-The flow sight glass must be installed without thrust, pressure, or twist.

Lumistar Special Glass Technology Co., Ltd

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