LIQUID LEVEL GAUGES
Gauge Glasses

KLINGER

Circular sight glasses

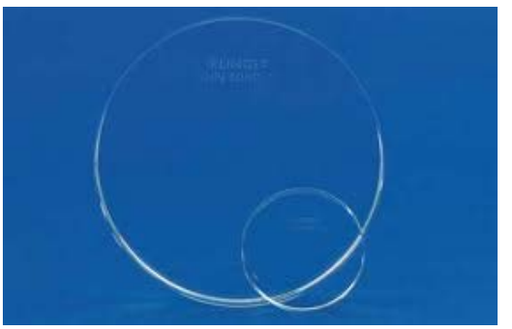
made from borosilicate glass “extra-hard”

From our standard range

Glass		Permiss. PB**)	Gasket		
Diameter mm	Thickness mm	bar	O.D. mm	I.D. mm	Thickness mm
31,75	12,7	175	*)	*)	*)
40	12	50	42	30	1,5
45	10	40	47	32	1,5
45	12	50	47	32	1,5
50	10	25	52	35	1,5
50	12	40	52	35	1,5
60	10	16	62	45	1,5
60	12	25	62	45	1,5
60	15	40	62	45	1,5
63	10	16	65	48	2
63	12	25	65	48	2
63	15	40	65	48	2
70	12	25	72	55	2
80	12	16	82	65	2
80	15	25	82	65	2
80	20	40	82	65	2
90	10	10	92	75	2
100	10	8	102	80	2
100	15	16	102	80	2
100	20	25	102	80	2
100	25	40	102	80	2
110	20	25	112	90	2
120	10	8	122	100	2
125	15	10	127	100	2
125	20	16	127	100	2
125	25	25	127	100	2
150	15	8	152	125	2
150	20	10	152	125	2
150	25	16	152	125	2
150	30	25	152	125	2
170	15	8	172	140	2
175	20	10	177	150	2
175	25	16	177	150	2
175	30	25	177	150	2
200	20	8	202	175	2

Dimensions not in DIN 7080 or OeNORM M7353

*) Gasket set and micas for high-pressure steam gauges **) PB=working pressure (gauge)



Technical datas

Material:
Borosilicate glass, thermally prestressed, optically tested, properties as laid down in DIN and OeNORM.
Extract from the OeNORM: “Chemical pre-stressing of glasses is not permissible.
For safety reasons soda-lime glasses may not be used.”

Resistance to bending strain:
≥160 N/mm²

Mean coefficient of linear expansion:
$\alpha 20/300 \leq 4.5 \cdot 10^{-6} \cdot K^{-1}$, tested to DIN 52328.

Transition temperature:
t_g=550°C, tested to DIN 52324.

Chemical resistance

Alkali resistance:
alkali class 2, tested to ISO 675.

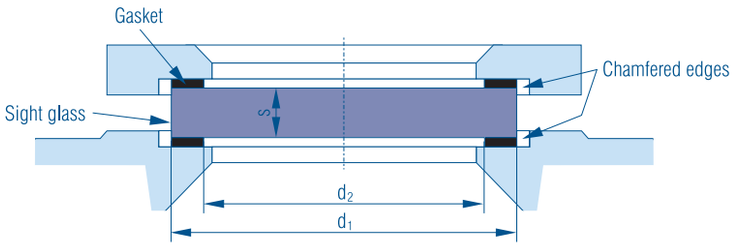
Water resistance:
hydrolytic class 1, tested ISO 719.

Acid resistance:
acid class 1, tested to DIN 12116.

moulded – ground – polished – thermally pre-stressed

Temperatur resistance:
suitable for temperatures from –273°C to +300°C, size 31.75/12.7 up to 356°C

Calculation of the correct glass thickness



$$s = 0{,}55 \cdot d_m \sqrt{\frac{p \cdot S}{10 \cdot \sigma_{bB}}}$$

s : *Theoretical minimum thickness in mm*

d_m : $\frac{d_1 + d_2}{2}$ *Mean diameter of gasket*

d_1 : *O.D. of glasses and gasket*

d_2 : *I.D. of gasket*

p : *Max. permissible working pressure (gauge) in bar*

σ_{bB} : *Minimum bending strength in N/mm²*

S : *Safety factor*