

With LRQA Deutschland GmbH (formerly Lloyd's Register Deutschland GmbH) design appraisal.

### USE:

Observation of the liquid level inside closed vessels (boilers, tanks, silos, etc.).

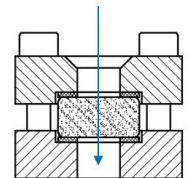
Sight glass fittings type 330 are rectangular longitudinal sight glass fittings for welding in or on, each completed with a sight glass plate inserted between the gaskets and firmly screwed.

### INSTALLATION INSTRUCTIONS:

After welding in the base frame, check whether the sealing surface has warped. If necessary, it must be reworked! Also observe the specified torques for the screw connection according to the operating and maintenance instructions! The operating pressure does not apply to the base frame, this must be tested together with the pressure device according to AD leaflet B9!

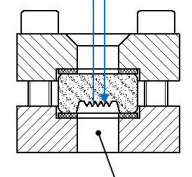


Light beam



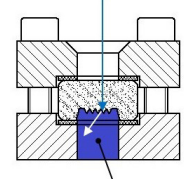
Transparent glass

Light beam



without liquid

Light beam



with liquid

### OPERATING CONDITIONS

<b>Temperature:</b> (depending on glass and seal)	$\leq 243^{\circ}\text{C}$	Borosilicate glass reflex and transparent DIN 7081 (saturated steam or hot water pressure)
	$\leq 280^{\circ}\text{C}$	Borosilicate glass reflex and transparent DIN 7081 (without technically significant glass attack)
	$\leq 320^{\circ}\text{C}$	Borosilicate glass transparent DIN 7081 (with mica protection)
<b>Pressure:</b>	- 0,9 <sup>1</sup> bar(g) up to 16/40 <sup>2</sup> bar(g)	

1) Depending on environment variable

2) See pressure note on next page

### MATERIAL

<b>Base frame:</b>	1.4571; 1.4404
<b>Glass:</b>	Borosilicate glass DIN 7081 reflex or transparent glass
<b>Gasket:</b> <sup>3</sup>	PTFE; FKM; NBR; C4400; Silicone; EPDM; Graphite
<b>Screws:</b>	A4-70
Special materials on request	

3) See „INFO gasket“ leaflet

### REFLECTIVE AND TRANSPARENT GLASS:

In the case of clear media, dark or non-illuminated vessels or a closed level indicator, the use of a reflex sight glass is recommended (see adjacent picture).

Due to the refraction of light in the incorporated prisms the level can be seen better. However, if the vessel is illuminated, the medium is very clear or if the color of the medium should be visible, a transparent glass should be used.

Reflex glass cannot be protected with mica glass, as this will prevent reflection.

We will be happy to help you select the appropriate design.



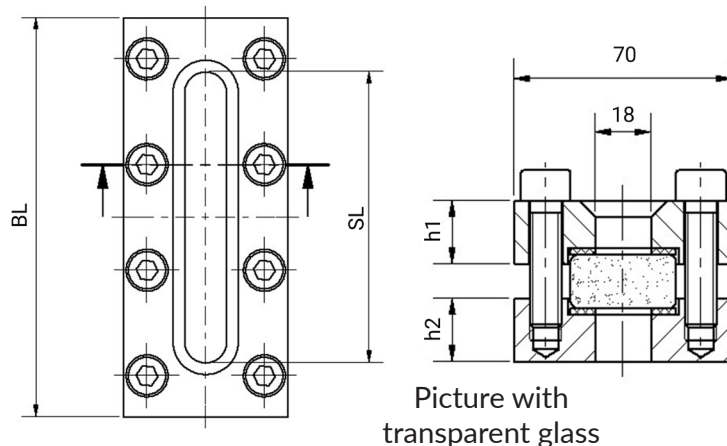
The design appraisal by LRQA Deutschland GmbH (formerly Lloyd's Register Deutschland GmbH) does not replace the final acceptance of the entire plant!

BL [mm]	140	170	220	250	300	310	350	370	400	500	600	620	700	740	800	930	1000
SL [mm]	79	124	174	204	264	264	304	324	354	454	564	574	654	694	754	884	954
Consealed view [mm]	0	0	0	0	0	0	0	0	0	1x46	1x36	1x46	1x46	1x46	1x46	2x46	3x46
h1/h2 [mm] (PN 16)	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Weight [kg] (PN 16)	2,8	3,2	4,0	4,6	5,3	5,6	6,3	6,6	7,1	9,1	10,7	11,1	12,5	13,2	14,2	16,7	18,2
h1/h2 [mm] (PN 40)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Weight [kg] (PN 40)	3,4	4,0	5,0	5,7	6,6	6,9	7,8	8,2	8,8	11,3	13,3	13,8	15,6	16,4	17,7	20,8	22,6

### PRESSURE NOTE:

The operating pressure of 40 bar(g) can only be realized with transparent glasses, with liquid media, without technically significant glass attack. For transparent glasses exposed to steam or aggressive media, the maximum operating pressure is PS=35 bar(g).

More detailed information can be found in our DIN 7081 information sheet.

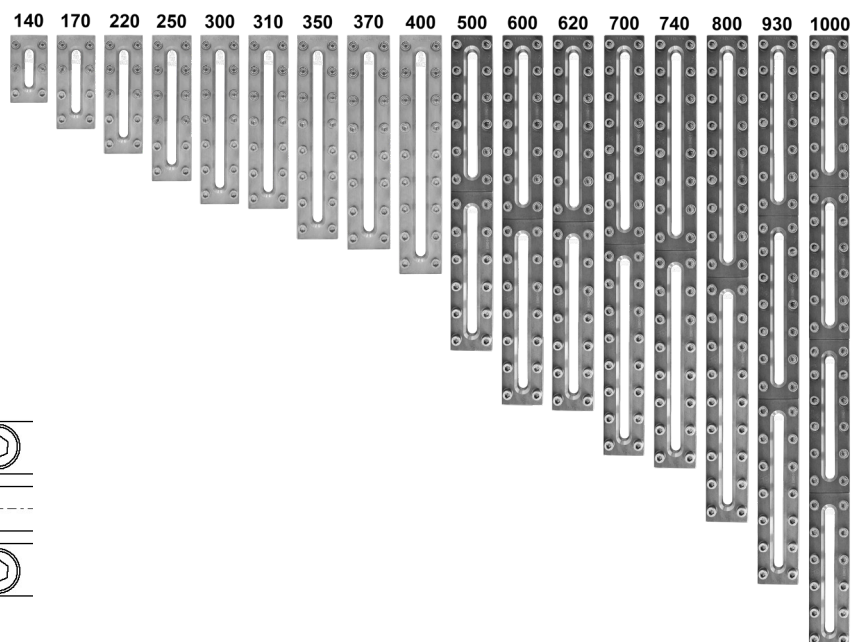
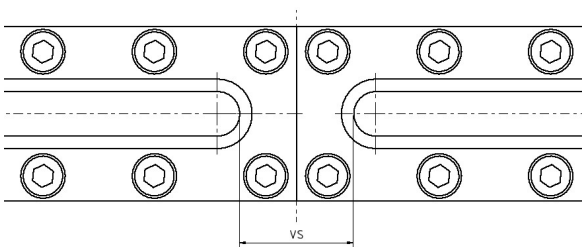


Picture with  
transparent glass

### CONCEALED VIEW (VS):

In the case of level indicators with long construction lengths, there is an obscured view in the area between the individual longitudinal glasses. This is due to the production length of the longitudinal glass according to DIN 7081. From an overall length of 500 mm, an obscured view is therefore unavoidable. The configuration of the size 140 mm to 1000 mm can be taken from the adjacent illustrations.

Special sizes on request.



### PRODUCT CODE:

Example explaining the code composition.

**11-330-400-2-1-4-1-0**

GROUP	TYPE	OVERALL LENGTH	BASE FRAME <sup>1</sup>	GLASS	GASKET	PN	VARIANT
11	330	140	2) 1.4571	1) Borosilicate glass (DIN 7081) transparent	1) PTFE	1) 16	0) Standard
		170	4) 1.4404	2) Borosilicate glass (DIN 7081) transparent	2) FKM	2) 40	
		220	8) Special	+ mica discs	3) NBR		
		250		3) Borosilicate glass (DIN 7081) reflex glass	4) <b>C4400</b>		
		300		4) Borosilicate glass unhardened <sup>2</sup> transparent	5) Silicone		
		310			6) EPDM		
		350			7) Graphite		
		370			8) Special		
		<b>400</b>					
		500					
		600					
		620					
		700					
		740					
		800					
		930					
		1000					

1) Cover frame according to offer/order confirmation

2) Without LRQA Deutschland GmbH (formerly Lloyd's Register Deutschland GmbH) design appraisal



Unless otherwise specified, the highlighted work standard is delivered.

### EXAMPLE:

**11-330-400-2-1-4-1-0** equivalent to:

ACI Type 330

400 mm long

Base frame made of 1.4571

Cover frame made of 1.4571

Borosilicate glass DIN 7080 transparent

Gasket C4400

PN 16

**Standard version**

- Special length possible on request

### OPTIONAL EQUIPMENT:



#### Mica discs

up to 320°C with borosilicate glass  
DIN 7081 transparent

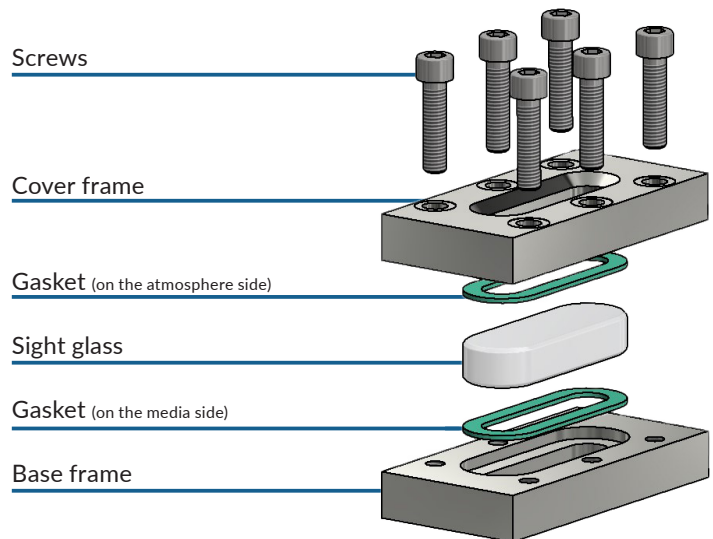


FEP-protective screen or  
FEP-coating  
for higher pH values



For aggressive media or steam, mica discs should be used to protect the glasses. (Not possible for reflective glasses, as this would cause them to lose their function).

### CONSTRUCTION:



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