

Intermediate flange execution for flanges according to DIN EN 1092-1

### USAGE

Glass ring tubular sight glasses are used for observing filling and flow in pipelines. The sight glass allows for reliable 360° monitoring of the function and performance of individual devices as well as entire systems.

Glass ring tubular sight glasses of type 640A are suitable for mounting between flanges according to ASME B16.5 Class 150 lbs RF. The sight glass is free of dead space when installed correctly.

#### Operating conditions:

Temperature: (depending on the glass material)	up to 80 °C with acrylic glass up to 280 °C tempered borosilicate glass
Pressure:	≤ 20 barg

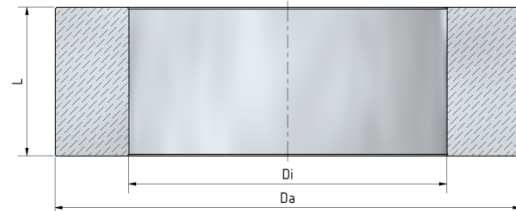
#### Materials:

Borosilicate glass tempered
Acrylic glass (PMMA)
Special materials upon request

### INSTALLATION NOTE

Appropriate seals should be used for the sealing surfaces. The screw material should be equivalent to or higher than the flange material. If possible, the screw thread and the screw head should be lubricated. The sight glasses must be installed so that no pipe forces (tension, pressure, and torsion), vibrations, and pressure shocks can act on the glass rings!

### DRAWING



NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"
Di [mm]	16	21	27	35	41	53	63	78	102	128	154	203	255	305	336	386	437	487
Da [mm]	35	43	51	63	73	92	105	127	157	186	216	270	324	381	413	470	534	584
Gew. <sup>1 3</sup>	0,09	0,13	0,18	0,26	0,34	0,53	0,77	0,95	1,34	1,72	2,16	2,99	3,77	4,91	5,2	6,5	8,5	9,4
Gew. <sup>2 3</sup>	0,04	0,07	0,09	0,13	0,17	0,26	0,33	0,47	0,66	0,84	1,06	1,47	1,85	2,42	2,67	3,33	4,36	4,81
PS <sup>1 4</sup>	20	20	20	20	20	20	20	20	20	19	16	15	10	10	10	10	10	10
PS <sup>2 4</sup>	19	18	16	16	16	16	14	14	10	10	8	8	6	6	6	6	6	6

<sup>1</sup>Borosilicate glass

<sup>2</sup>Acrylic glass

<sup>3</sup>Weight in [kg] for L = 50 mm

<sup>4</sup>max. operating pressure in [barg]

Other materials, sizes, lengths and flange standards available on request

### ASSEMBLY EXAMPLE



The delivery is made without screws, gaskets, and flanges

### PRODUCT CODE

Example for Explaining the Code Composition

**11 - 640A - 10 - 2 - 50 - 000**

GROUP	TYPE	NPS	GLASS	TOTAL LENGTH	VARIANT
11	640A	1) -	1) Acrylic glass	100) 100 mm (only acrylic)	000) Standard
		2) 1/2"	2) Tempered borosilicate glass	050) 50 mm (Standard)	
		3) 3/4"		6) Special	
		4) 1"			
		5) 1 1/4"			
		6) 1 1/2"			
		7) 2"			
		8) 2 1/2"			
		9) 3"			
		10) 4"			
		11) 5"			
		12) 6"			
		13) 8"			
		14) 10"			
		15) 12"			
		16) 14"			
		17) 16"			
		18) 18"			
		19) 20"			



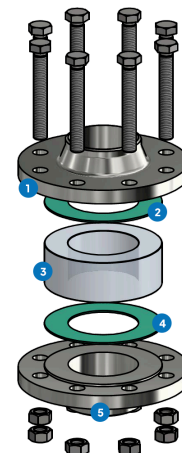
Unless otherwise stated, the highlighted factory standard will be delivered.

### EXAMPLE

The product code **11-640A-10-2-050-000** corresponds to the standard version:  
 ACI type 640A  
 NPS 4"  
 PS max. 20 barg  
 Borosilicate glass tempered  
 Standard length 50 mm

### STRUCTURE

1. WN-Flange Class 150 lbs RF according to ASME B16.5
2. Gasket
3. Glass ring tubular sight glass type 640A
4. Gasket
5. WN-Flange Class 150 lbs RF according to ASME B16.5



For aggressive media, FEP or Halar® coated glass ring sight glasses can be used.

### QUICK OVERVIEW



max. 20 barg



heat resistant up to 280 °C



for liquid media



for gaseous media



Nominal sizes NPS 1/2" - 20"



custom made designs available

### OPERATING CONDITIONS

Operating conditions depend on the choice of glass and the seals:

		Sight glass				Gaskets				
		Borosilicate glass tempered	Acrylic glass	PTFE max. 200 °C	FKM max. 200 °C	NBR max. 80 °C	C4400 max. 175 °C	Silicone max. 180 °C	EPDM max. 130 °C	Graphite > 300 °C
TEMPERATURE	up to 80 °C	✓	✓	✓	✓	✓	✓	✓	✓	✓
	up to 130 °C	✓	✗	✓	✓	✗	✓	✓	✓	✓
	up to 175 °C	✓	✗	✓	✓	✗	✓	✓	✗	✓
	up to 180 °C	✓	✗	✓	✓	✗	✗	✓	✗	✓
	up to 200 °C	✓	✗	✓	✓	✗	✗	✗	✗	✓
PRESSURE	up to 280 °C	✓	✗	✗	✗	✗	✗	✗	✗	✓
	up to 20 barg	✓	✓	✓	✗	✗	✓	✗	✗	✓

✓ suitable ✗ unsuitable

**OPTIONAL ACCESSORIES**



**FEP protective screen / coating**

> for high pH values