

ROD SOURCE SHIELDS LB 8300

Technical Information



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1. Maximum permissible activities during transport

The activities indicated here are the maximum activities with which the individual shields can be loaded according to the international dose rate limit for the transport of radioactive substances. National dose rate limits for the operation of measurement systems are usually significantly lower and only allow loading with significantly lower activities. The national provisions must be complied with.

Shield model	Maximum activity (Co-60)		Maximum activity (Cs-137)	
Variant 100	1.38 MBq/mm	max. 0.037 mCi/mm	49.71 MBq/mm	max. 1.34 mCi/mm
Variant 150	11.94 MBq/mm	max. 0.32 mCi/mm	1657.29 MBq/mm	44.79 mCi/mm
Variant 200	67.44 MBq/mm	max. 1.82 mCi/mm	43166 MBq/mm	1166 mCi/mm
Variant 270	475.60 MBq/mm	max. 12.85 mCi/mm	43166 MBq/mm	1166 mCi/mm
	calculated values			

2. Ambient conditions during mounting

The shield is lifted and positioned using the two lifting eyes. The minimum permissible temperature during assembly is -20 °C. Follow the instructions in the operating manual.

3. Technical data

3.1. Variant 100

Variant	Housing	Shielding	Number of support plates	Source length	Weight	Operating temperature	Coating	Fire proof
ID: 69540-01	Carbon steel S235	43 mm lead (rotatable cylinder), 40 mm lead (filled side structure)	-	500 mm	97 kg	-40°...+200°C	RAL 1004 2K polyurethane varnish	NO
ID: 69540-02			-	600 mm	110 kg			
ID: 69540-03			-	700 mm	123 kg			
ID: 69540-04			-	800 mm	136 kg			
ID: 69540-05			1	900 mm	150 kg			
ID: 69540-06			1	1000 mm	163 kg			
ID: 69540-07			1	1100 mm	176 kg			
ID: 69540-08			1	1200 mm	189 kg			
ID: 69540-09			1	1240 mm	193 kg			

3.2. Variant 150

Variant	Housing	Shielding	Number of support plates	Source length	Weight	Operating temperature	Coating	Fire proof
ID: 69550-01	Carbon steel S235	70 mm lead (rotatable cylinder), 63 mm lead (filled side structure)	-	500 mm	249 kg	-40°...+200°C	RAL 1004 2K polyurethane varnish	NO
ID: 69550-02			-	600 mm	274 kg			
ID: 69550-03			-	700 mm	303 kg			
ID: 69550-04			-	800 mm	338 kg			
ID: 69550-05			1	900 mm	368 kg			
ID: 69550-06			1	1000 mm	397 kg			
ID: 69550-07			1	1100 mm	426 kg			
ID: 69550-08			1	1200 mm	456 kg			
ID: 69550-09			1	1240 mm	466 kg			

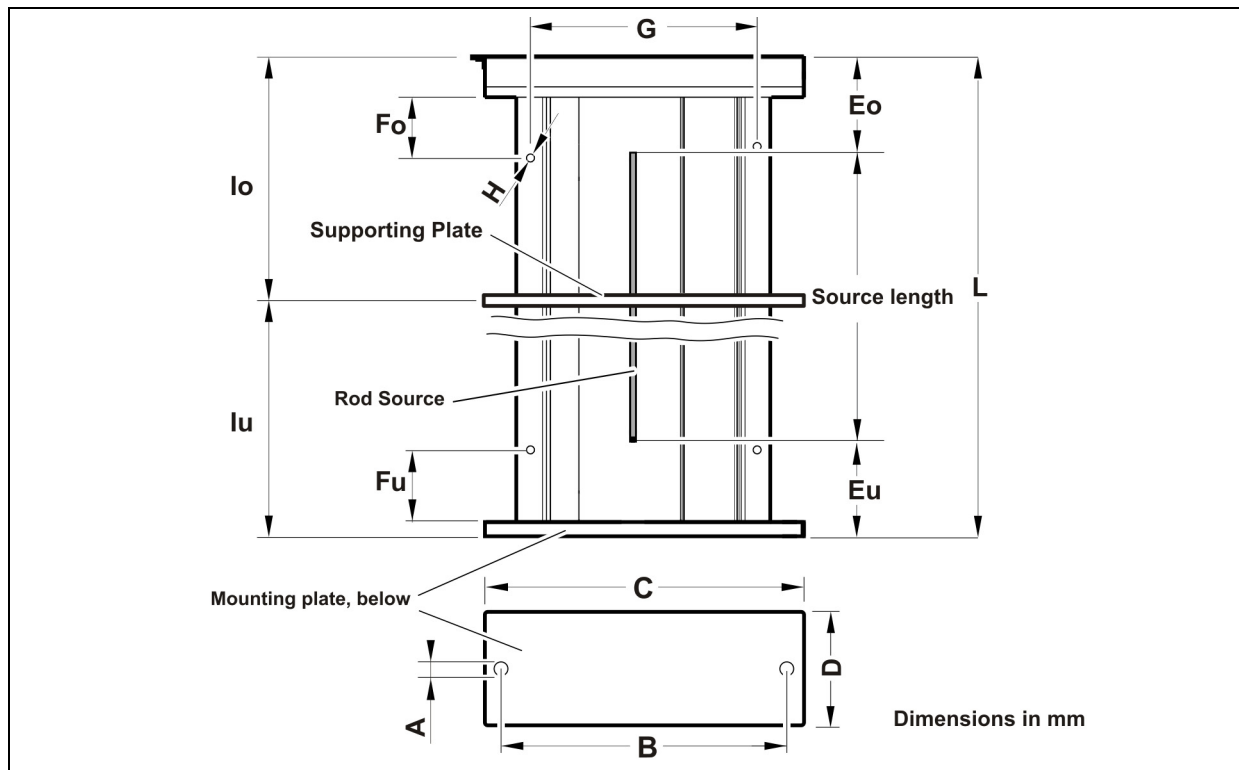
3.3. Variant 200

Variant	Housing	Shielding	Number of support plates	Source length	Weight	Operating temperature	Coating	Fire proof
ID: 69560-01	Carbon steel S235	88 mm lead (rotatable cylinder), 73 mm lead (filled side structure)	-	500 mm	412 kg	-40° ... +200°C	RAL 1004 2K polyurethane varnish	NO
ID: 69560-02			-	600 mm	456 kg			
ID: 69560-03			-	700 mm	500 kg			
ID: 69560-04			-	800 mm	563 kg			
ID: 69560-05			2	900 mm	607 kg			
ID: 69560-06			2	1000 mm	652 kg			
ID: 69560-07			2	1100 mm	697 kg			
ID: 69560-08			2	1200 mm	741 kg			
ID: 69560-09			2	1240 mm	757 kg			

3.4. Variant 270

Variant	Housing	Shielding	Number of support plates	Source length	Weight	Operating temperature	Coating	Fire proof
ID: 69570-01	Carbon steel S235	121 mm lead (rotatable cylinder), 100 mm lead (filled side structure)	-	500 mm	761 kg	-40°...+200°C	RAL 1004 2K polyurethane varnish	NO
ID: 69570-02			-	600 mm	838 kg			
ID: 69570-03			2	700 mm	938 kg			
ID: 69570-04			2	800 mm	1016 kg			
ID: 69570-05			2	900 mm	1094 kg			
ID: 69570-06			2	1000 mm	1171 kg			
ID: 69570-07			2	1100 mm	1249 kg			
ID: 69570-08			2	1200 mm	1327 kg			
ID: 69570-09			2	1240 mm	1355 kg			

3.5. Dimensions variant 100 / 150

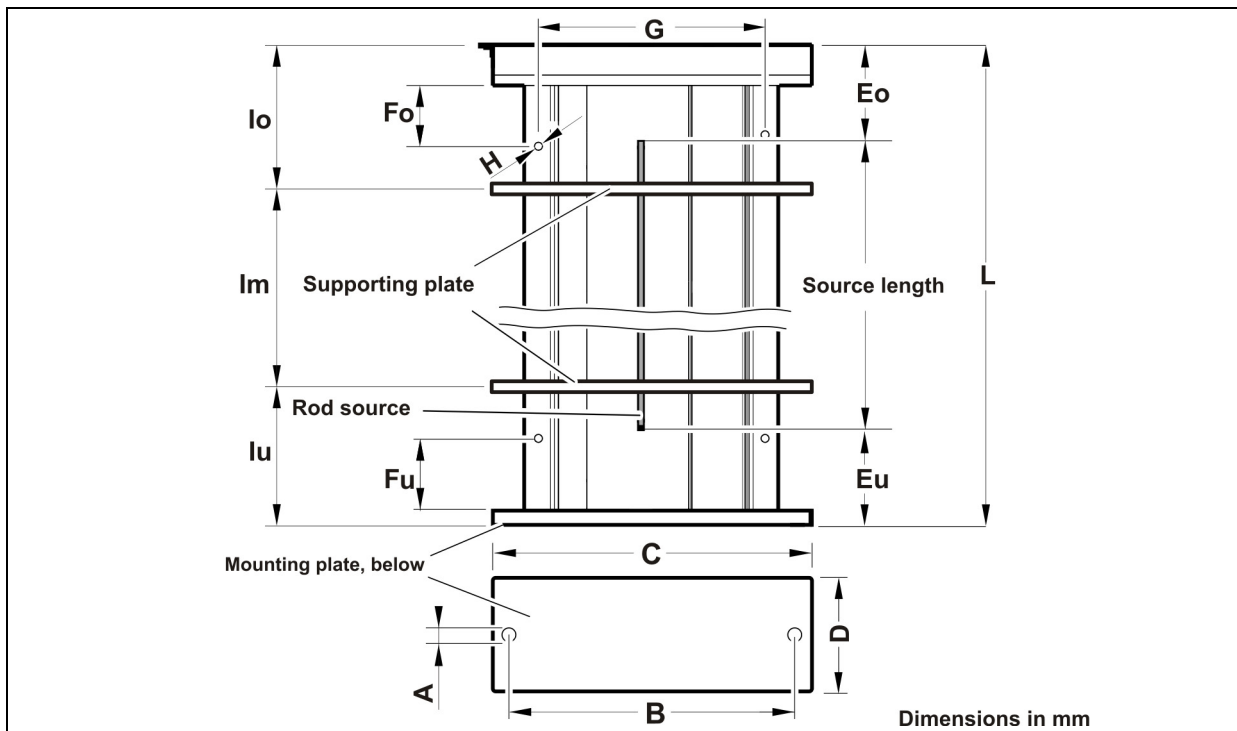


TI-Abb. 1 Dimension Variant 100 / 150

Variant	ID	Source length	L	A	B	C	D	Eu	Eo	Fu	Fo	G	H	lo*	lu*
100	69540-01	500	650											-	-
	69540-02	600	750											-	-
	69540-03	700	850											-	-
	69540-04	800	950											-	-
	69540-05	900	1050	Ø14	305	340	120	77	73	120	132	225	Ø12	531	519
	69540-06	1000	1150											581	569
	69540-07	1100	1250											631	619
	69540-08	1200	1350											681	669
	69540-09	1240	1390											701	689
150	69550-01	500	700											-	-
	69550-02	600	800											-	-
	69550-03	700	900											-	-
	69550-04	800	1000											511	489
	69550-05	900	1100	Ø18	425	465	180	102	98	125	137	332	Ø14	561	539
	69550-06	1000	1200											611	589
	69550-07	1100	1300											661	639
	69550-08	1200	1400											711	689
	69550-09	1240	1490											731	709

* Dimensional deviation due to welded construction

3.6. Dimensions variant 200 / 270

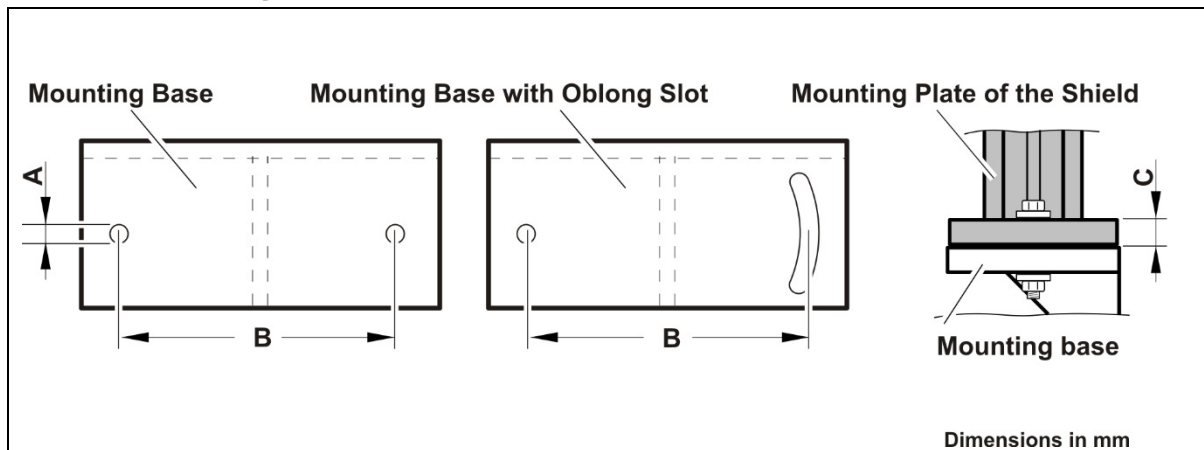


TI-Abb. 2 Dimension Variant 200 / 270

Variant	ID	Source length	L	A	B	C	D	Eu	Eo	Fu	Fo	G	H	lo*	lu*	lm*
200	69560-01	500	750											-	-	-
	69560-02	600	850											-	-	-
	69560-03	700	950											-	-	-
	69560-04	800	1050											-	-	-
	69560-05	900	1150	Ø 26	510	560	220	127	123	130	144	398	Ø14	401	387	362
	69560-06	1000	1250											434.3	420	395.3
	69560-07	1100	1350											467.6	453.6	428.6
	69560-08	1200	1450											501	487	462
	69560-09	1240	1490											514.3	500.3	475.3
270	69570-01	500	830											-	-	-
	69570-02	600	930											-	-	-
	69570-03	700	1030											365.6	385.8	318.6
	69570-04	800	1130											398	381	351
	69570-05	900	1230	Ø 26	510	600	300	167	163	120	137	497,5	Ø14	431.3	413.3	384.3
	69570-06	1000	1330											464.6	447.6	417.6
	69570-07	1100	1430											498	481	451
	69570-08	1200	1530											531.3	514.3	484.3
	69570-09	1240	1570											544.6	5276	497.6

* Dimensional deviation due to welded construction

3.7. Mounting base for LB 8300



TI-Abb. 3 Mounting base dimensions for LB 8300 Rod Source Shields

Variant	Mounting base	A	B	C
100	> 340 x 120	> Ø 14	305	15
150	> 465 x 180	> Ø 18	425	20
200	> 560 x 220	> Ø 26	510	25
270	> 600 x 300	> Ø 26	510	30

NOTICE



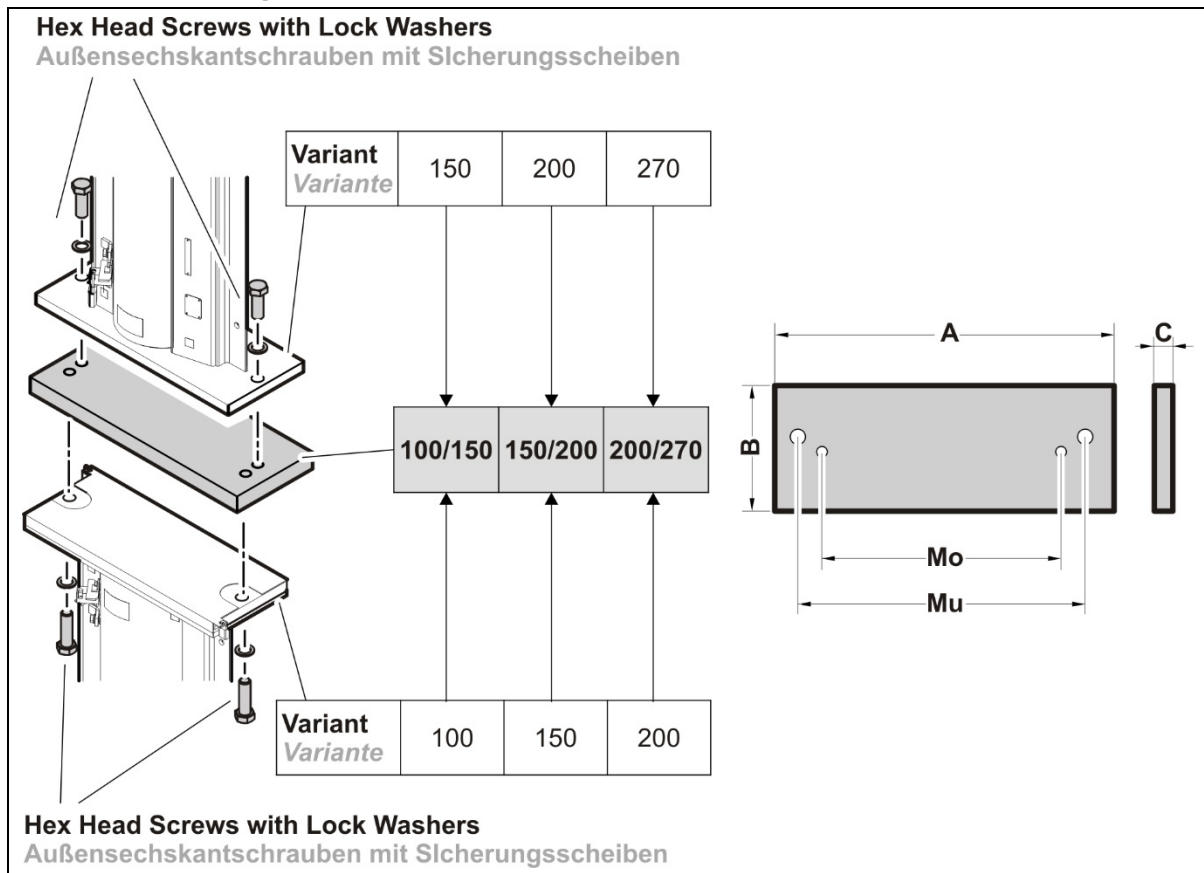
Mounting base installed by the installation contractor or end user. The base must be designed for the total load of the shield(s) and is designed for the total load of the shield(s) and be secured to the vessel or the supporting structure, e.g. welded.

IMPORTANT



The mounting base with the oblong slot allows the shield to be rotated to better aim the radiation beam at the detector.

3.8. Mounting kit adapter plate



TI-Abb. 4 Mounting Kit Adapter Plate

Ident. No.	Description	A	B	C	Mo	Mu	Connection Elements
73291	Mounting Kit Adapter Plate 100/150	465	120	20	305	425	M12x35, M16x45 Lock washer NL12, NL16
73295	Mounting Kit Adapter Plate 150/200	560	180	25	425	510	M24x60, M16x45 Lock washer NL24, NL16
73301	Mounting Kit Adapter Plate 200/270	600	220	40	510	510	M24x60 Lock washer NL24

NOTICE



Only use the supplied screws and lock washers. Tightening torque recommendation:

- ▶ M12: 56 Nm
- ▶ M16: 136 Nm
- ▶ M24: 460 Nm

4. Rod source cascade

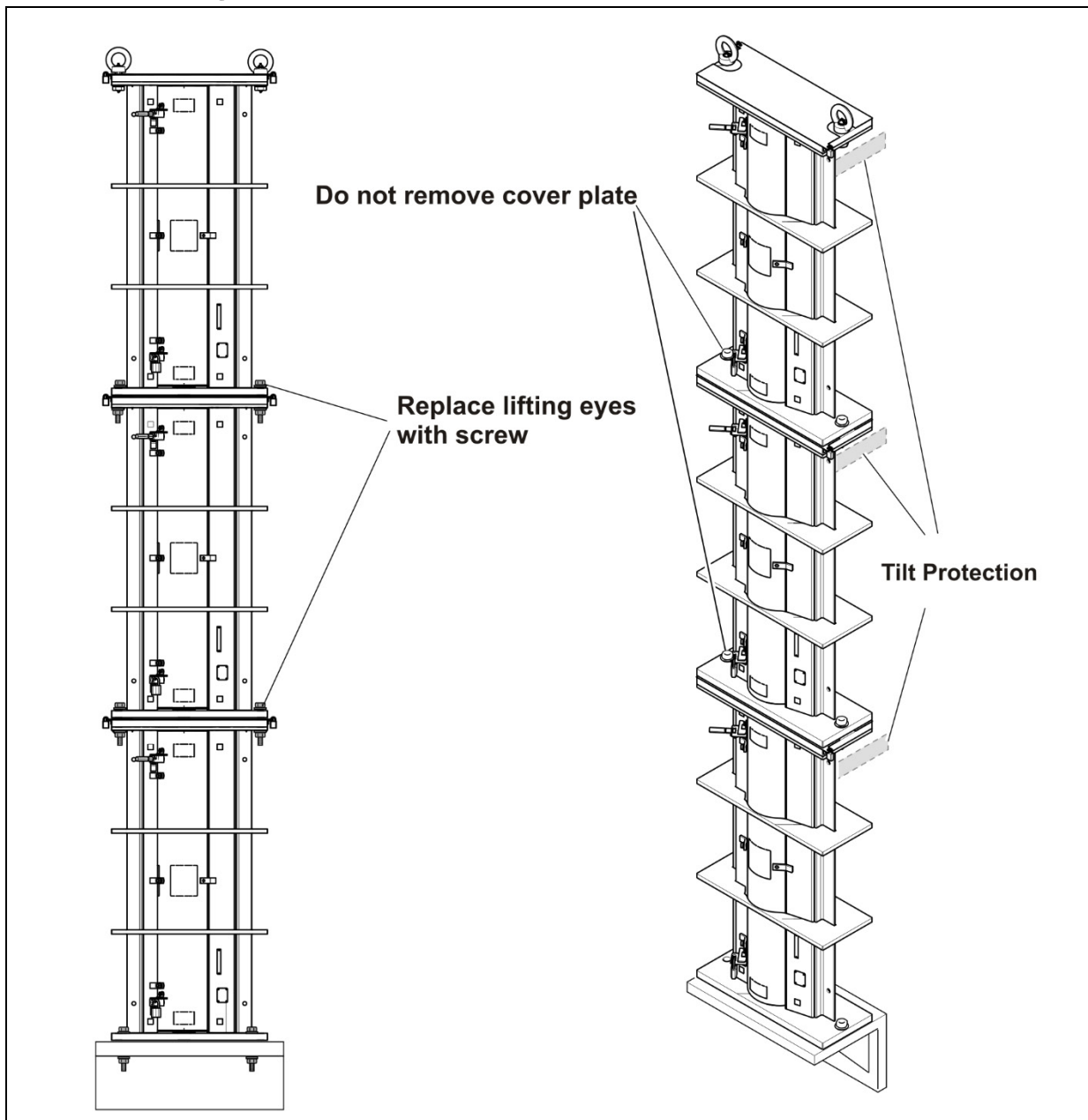
If several rod sources are needed, the individual shields are arranged directly on top of each other or staggered. Multi-part shields are marked by the letters A, B, C etc. from top to bottom. Each part must be secured adequately, e.g. by using a flat iron as anti-tipping device.

NOTICE



Following installation of the shields, the function of the positioning mechanism has to be tested. The shutter check has to be carried out every six months and recorded.

4.1. Mounting variant stacked rod source cascaded



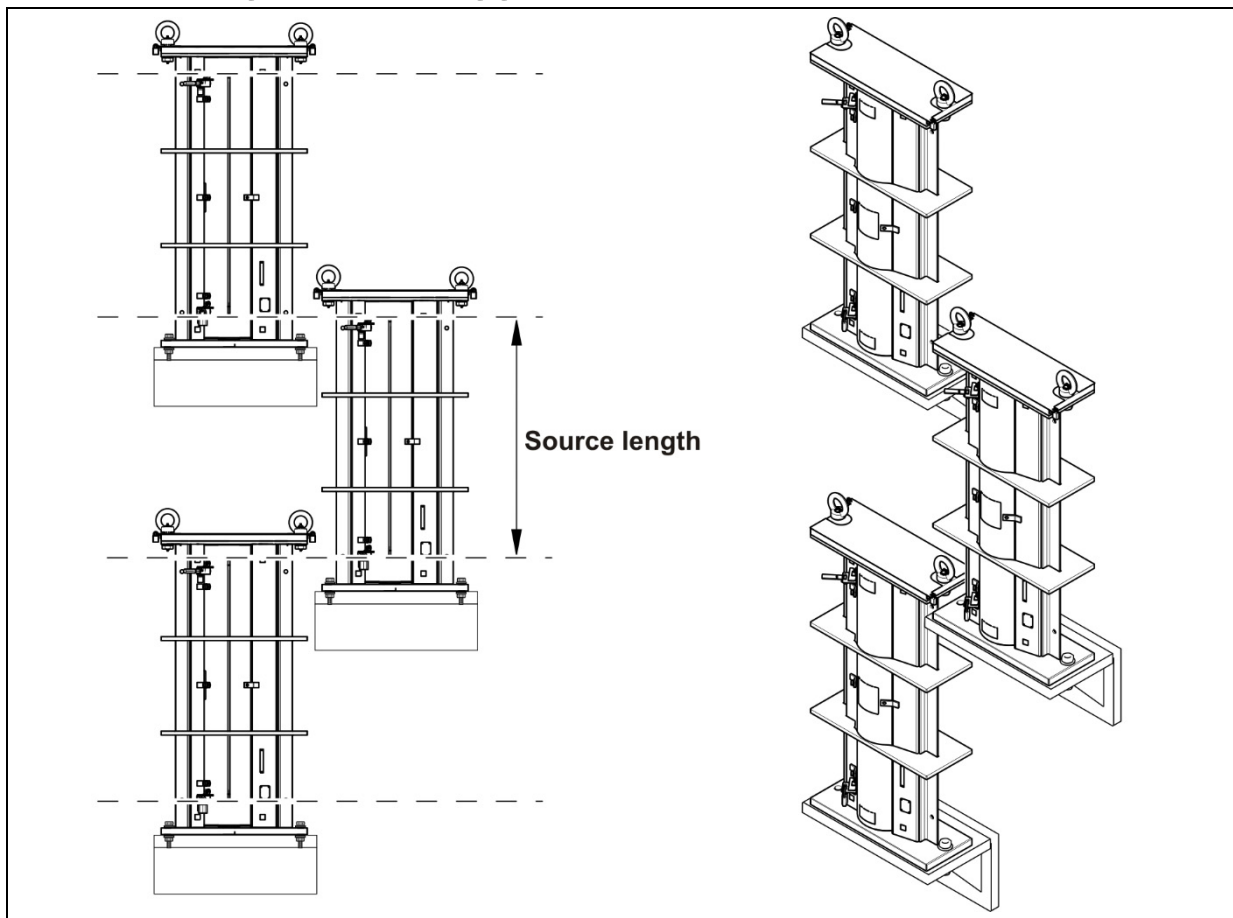
TI-Abb. 5 Mounting variant stacked (example illustration))

NOTICE



Tilt-protections should be installed by the installation contractor or end user, and affixed to the vessel or the supporting structure, e.g. welded. The anti-tipping measures must be installed on both sides and on each shield.

4.2. Mounting variant staggered rod source cascade



TI-Abb. 6 Mounting variants staggered (example illustration)