LASERLINE STANDARD

Overall heights 155 - 3000 mm
Any height between 300 and 3000 mm is available to the nearest millimetre at the customer's request.

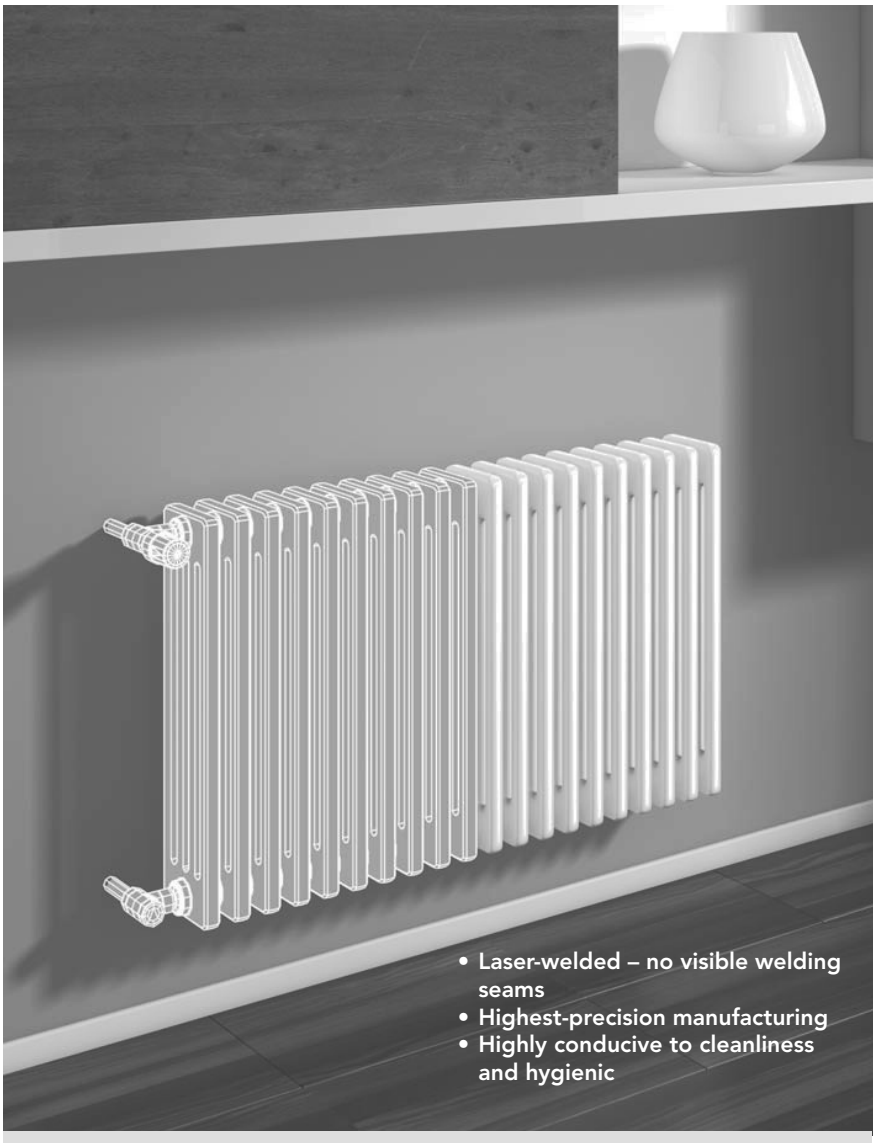
Overall length 200 - 2500 mm
Scope of delivery in a single block by model up to a max. overall length of 2100 mm is possible, otherwise supplied in block parts including plugs, nipples and gaskets.

Overall depth
2-column: 63 mm
3-column: 101 mm
4-column: 139 mm
5-column: 177 mm
6-column: 215 mm

Connections
4 x 1/2" internal thread (front)
also suitable for the boss spacings of older DIN-compliant steel or cast iron radiators
Further possible connections: 3/8", 3/4" and 1"

Max. operating pressure
10 Heated bar tables

Max. operating temperature 110 °C



Guarantee statements are available to download at **www.vogelundnoot.com/download**

Design Column radiators made from precision-engineered steel pipes and fully laser-welded head pieces connected to completed radiators or blocks.
Pipes and head pieces flattened on the external sides to increase the heat output. No protruding welding burrs either inside or outside. The boss spacing is the overall height minus 65 mm. Connections for the supply, return, vent plug and drain are located on the front. The surfaces have been pre-treated and subject to electrophoretic immersion coating and cured powder coating.

Packaging
Environmentally friendly transport packaging with side protection (enclosing cardboard packaging), and shrink-wrapped.

Safety
Construction in line with work safety requirements in accordance with the guidelines of the statutory accident insurer (GUV). Tested and registered in accordance with European standard EN 442 Reg. No. 6R0900. Complies with the old BAGUV guidelines. Awarded a hygiene certificate.

Technical data
Boss size: 1", element length: 50 mm

Attention!
The manufacturer's length tolerance is 0 to + 1%. Please take this into account during pre-assembly!

Note:
In the case of LaserLine Column radiators that are composed of blocks and are to be connected by means of nipples, the overall length increases by 30 mm (15 mm for each of the screw plugs!)

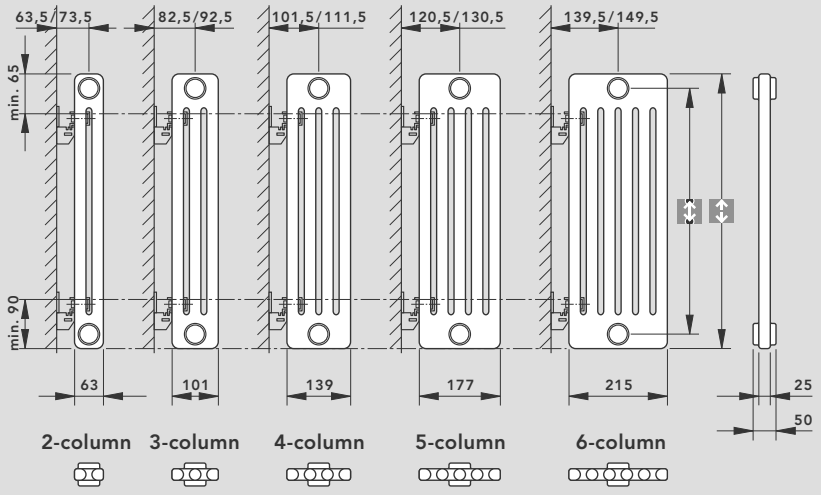
Fixing and scope of delivery
Delivery without fixings and connection materials (see Accessories)

Coating
In accordance with DIN 55 900, with electrophoretic immersion coating and cured powder coating in RAL 9016 Traffic White, other RAL colours and bathroom suite colours are available upon request.

LASERLINE STANDARD

Models overview, dimensions and block lengths

Models overview



Note:
The entire Laserline series is manufactured without clip brackets as standard. The delivery does not include fixings, or vent plugs or dummy plugs.

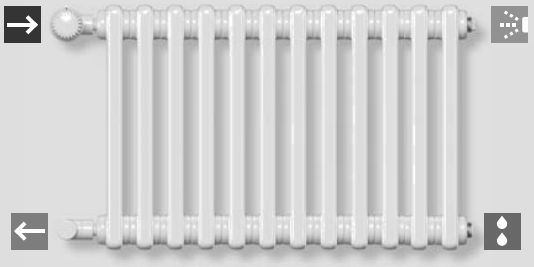
Boss spacing:
Overall height – 65 mm

Model	Overall height [mm]	Max. elements per block	Nipples supplied by manufacturer max. elements
2-column	155 - 800	42	60
	801 - 1000	42	48
	1001 - 2400	19	-
	2401 - 3000	16	-
3-column	155 - 800	42	60
	801 - 1000	42	48
	1001 - 2400	19	-
	2401 - 3000	16	-
4-column	155 - 800	42	60
	801 - 1000	32	48
	1001 - 1850	19	-
	1851 - 2000	18	19
	2001 - 2200	16	19
	2201 - 2500	14	16
	2501 - 2800	12	16
	2801 - 3000	11	16
5-column	155 - 665	42	60
	666 - 750	37	53
	751 - 800	32	48
	801 - 1000	26	40
	1001 - 1400	19	-
	1401 - 1500	18	19
	1501 - 1600	17	19
	1601 - 1800	16	19
	1801 - 2000	14	19

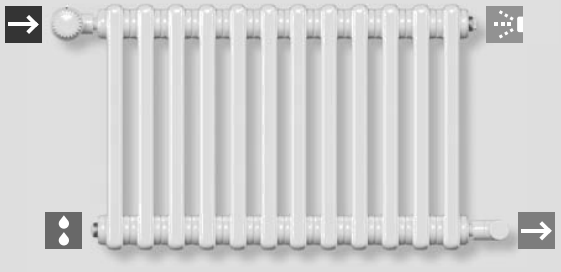
Model	Overall height [mm]	Max. elements per block	Nipples supplied by manufacturer max. elements
5-column	2001 - 2200	12	18
	2201 - 2500	11	16
	2501 - 2800	10	14
	2801 - 3000	9	13
6-column	155 - 500	42	60
	501 - 600	35	52
	601 - 665	32	48
	666 - 750	28	42
	751 - 800	26	42
	801 - 900	24	36
	901 - 1000	22	33
	1001 - 1200	19	-
	1201 - 1400	16	19
	1401 - 1500	15	19
	1501 - 1600	14	19
	1601 - 1800	13	19
	1801 - 1900	12	18
	1901 - 2000	11	17
	2001 - 2100	11	16
	2101 - 2300	10	15
	2301 - 2500	9	14
	2501 - 2600	9	13
	2601 - 2800	8	12
	2801 - 3000	8	11

Standard heights [mm]	Boss spacing [mm]
155	90
300	235
350	285
365	300
400	335
415	350
450	385
500	435
550	485
565	500
600	535
665	600
750	685
900	835
965	900
1000	935
1065	1000
1100	1035
1200	1135
1500	1435
1800	1735
2000	1935
2200	2135
2500	2435
2800	2735
3000	2935

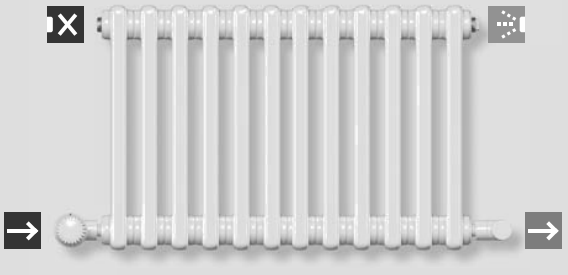
Connection types – double pipe system



A: Single-sided connection

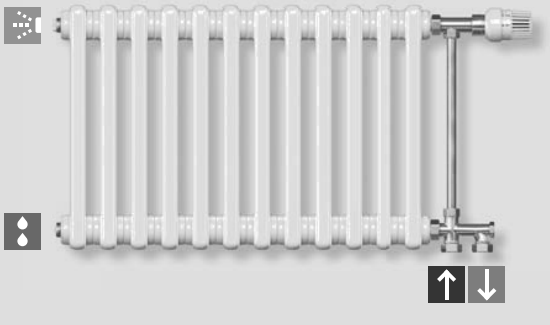


B: Connection **on both sides**



C: Connection **on top**

Connection type – single pipe system



Excess temperatures ΔT

The table values have been calculated by arithmetic or logarithms and have been rounded up or down in line with practical considerations. It is therefore usually not necessary to make calculations yourself.

Supply temperature t_1 °C	Room air temperature t_r °C	Return temperature t_2 °C						
		70	65	60	55	50	45	40
		ΔT						
90	15	65	62	59	56	53	50	46
	18	62	59	56	53	50	46	43
	20	60	57	54	51	48	44	40
	22	58	55	52	49	46	42	38
	24	56	53	50	47	43	40	36
85	15	63	60	57	54	51	48	44
	18	60	57	54	51	48	44	41
	20	58	55	52	49	46	42	39
	22	56	53	50	47	44	40	36
	24	54	51	48	45	41	38	34
80	15	60	58	55	52	49	46	42
	18	57	55	52	49	46	42	39
	20	55	53	50	47	44	40	37
	22	53	51	48	45	42	38	35
	24	51	49	46	43	39	36	32
75	15	58	55	53	50	47	44	40
	18	55	52	50	47	44	41	37
	20	53	50	48	45	42	38	35
	22	51	48	46	43	40	36	33
	24	49	46	44	41	37	34	30
70	15	-	53	50	48	45	42	38
	18	-	50	47	45	42	39	35
	20	-	48	45	43	40	36	33
	22	-	46	43	40	37	34	31
	24	-	44	41	38	35	32	29
65	15	-	-	48	45	43	40	36
	18	-	-	45	42	39	36	33
	20	-	-	43	40	37	34	31
	22	-	-	41	38	35	32	29
	24	-	-	39	36	33	30	27
60	15	-	-	-	43	40	37	34
	18	-	-	-	40	37	34	31
	20	-	-	-	38	35	32	29
	22	-	-	-	36	33	30	27
	24	-	-	-	34	31	28	25
55	15	-	-	-	-	38	35	32
	18	-	-	-	-	35	32	29
	20	-	-	-	-	33	30	27
	22	-	-	-	-	31	28	25
	24	-	-	-	-	29	26	23
50	15	-	-	-	-	-	33	30
	18	-	-	-	-	-	30	27
	20	-	-	-	-	-	28	25
	22	-	-	-	-	-	26	23
	24	-	-	-	-	-	24	21

Conversion factor U_f

Conversion factor U_f to determine the heat output for ΔT other than 50 K

ΔT K	U_f	ΔT K	U_f
65	1,408	43	0,821
64	1,380	42	0,796
63	1,352	41	0,771
62	1,324	40	0,747
61	1,296	39	0,723
60	1,268	38	0,699
59	1,241	37	0,675
58	1,213	36	0,651
57	1,186	35	0,627
56	1,159	34	0,604
55	1,132	33	0,581
54	1,105	32	0,558
53	1,079	31	0,535
52	1,052	30	0,513
51	1,026	29	0,491
50	1,000	28	0,469
49	0,974	27	0,447
48	0,948	26	0,426
47	0,922	25	0,404
46	0,897	24	0,383
45	0,871	23	0,363
44	0,846	22	0,342
43	0,821	21	0,322
44	0,796		

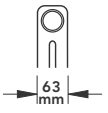
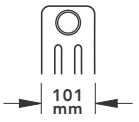
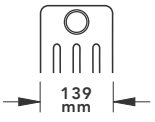
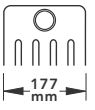
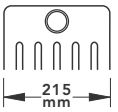
The standard heat output
In accordance with DIN EN 442, this relates to t_1 = 75 °C, t2 = 65 °C, tr = 20 °C
Excess temperature ΔT = 50 K.
In order to determine other ΔT, a conversion factor is used as shown above.

Example
VOGEL&NOOT Laserline tube radiator, model 6050, 10 elements

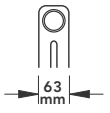
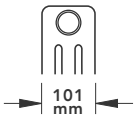
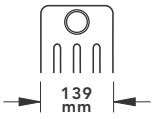
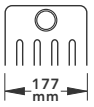
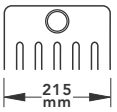
Standard heat output at ΔT = 50 K: 103.76 Watts/element x 10 elements = 1037.6 Watts.
Supply of 70 °C, return of 55 °C, room temperature 18 °C gives ΔT = 45 K (see table on the left).

Conversion factor U_f = 0.871 (see table above).
Actual heat output: 1037.6 x 0.871 = 903.75 Watts

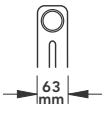
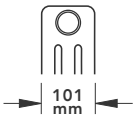
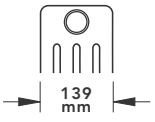
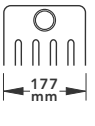
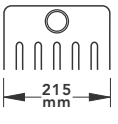
Output tables

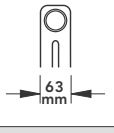
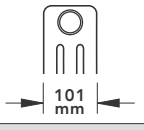
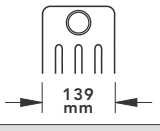
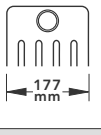
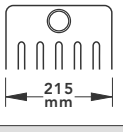
Standard heat output (Watts) at 75/65/20 °C in accordance with EN 442, DIN registration number 6R0900						
Attention: the 155 mm-height radiator cannot be mounted using the radiator mounts!		**2-columns** 	**3-columns** 	**4-columns** 	**5-columns** 	**6-columns** 
Increments	All lengths from 200 to 2500 mm in increments of 50 mm, the element width is 50 mm.					
Overall height 155 mm	**Model**	**2016**	**3016**	**4016**	**5016**	**6016**
	Output/element in Watts	12,66	17,51	22,83	28,71	34,80
Boss spacing 90 mm	Water capacity/element in litres	0,27	0,39	0,51	0,63	0,75
	Weight when empty/ element in kg	0,30	0,45	0,61	0,76	0,93
Overall height 300 mm	**Model**	**2030**	**3030**	**4030**	**5030**	**6030**
	Output/element in Watts	25,24	35,40	45,56	55,98	66,39
Boss spacing 235 mm	Water capacity/element in litres	0,40	0,57	0,75	0,93	1,11
	Weight when empty/ element in kg	0,52	0,78	1,05	1,30	1,57
Overall height 350 mm	**Model**	**2035**	**3035**	**4035**	**5035**	**6035**
	Output/element in Watts	28,96	40,50	52,04	63,99	75,93
Boss spacing 285 mm	Water capacity/element in litres	0,44	0,64	0,84	1,03	1,23
	Weight when empty/ element in kg	0,60	0,89	1,20	1,49	1,86
Overall height 365 mm	**Model**		**3037**	**4037**	**5037**	**6037**
	Output/element in Watts		42,01	53,96	66,36	78,76
Boss spacing 300 mm	Water capacity/element in litres		0,66	0,86	1,06	1,27
	Weight when empty/ element in kg		0,91	1,22	1,54	1,86
Overall height 400 mm	**Model**	**2040**	**3040**	**4040**	**5040**	**6040**
	Output/element in Watts	32,63	45,52	58,40	71,87	85,33
Boss spacing 335 mm	Water capacity/element in litres	0,49	0,70	0,92	1,14	1,35
	Weight when empty/ element in kg	0,68	1,00	1,35	1,67	2,02
Overall height 415 mm	**Model**		**3042**	**4042**		**6042**
	Output/element in Watts		47,01	60,29		88,12
Boss spacing 350 mm	Water capacity/element in litres		0,72	0,95		1,39
	Weight when empty/ element in kg		1,03	1,37		2,08
Overall height 450 mm	**Model**	**2045**	**3045**	**4045**	**5045**	**6045**
	Output/element in Watts	36,26	50,47	64,68	79,64	94,60
Boss spacing 385 mm	Water capacity/element in litres	0,53	0,76	1,01	1,24	1,48
	Weight when empty/ element in kg	0,75	1,12	1,49	1,86	2,24
Overall height 500 mm	**Model**	**2050**	**3050**	**4050**	**5050**	**6050**
	Output/element in Watts	39,87	55,38	70,88	87,32	103,76
Boss spacing 435 mm	Water capacity/element in litres	0,57	0,83	1,09	1,34	1,60
	Weight when empty/ element in kg	0,83	1,23	1,64	2,04	2,46
Overall height 550 mm	**Model**	**2055**	**3055**	**4055**	**5055**	**6055**
	Output/element in Watts	43,46	60,25	77,03	94,93	112,83
Boss spacing 485 mm	Water capacity/element in litres	0,62	0,89	1,17	1,45	1,73
	Weight when empty/ element in kg	0,91	1,34	1,79	2,23	2,68

Output tables

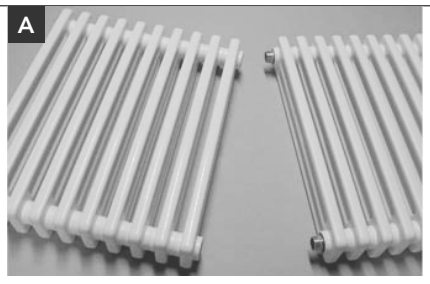
Standard heat output (Watts) at 75/65/20 °C in accordance with EN 442, DIN registration number 6R0900						
		2-columns 	3-columns 	4-columns 	5-columns 	6-columns 
Increments		All lengths from 200 to 2500 mm in increments of 50 mm, the element width is 50 mm.				
Overall height 565 mm	Model	2057	3057	4057	5057	6057
	Output/element in Watts	44,53	61,70	78,86	97,20	115,54
Boss spacing 500 mm	Water capacity/element in litres	0,63	0,91	1,20	1,48	1,76
	Weight when empty/ element in kg	0,93	1,38	1,84	2,29	2,75
Overall height 600 mm	Model	2060	3060	4060	5060	6060
	Output/element in Watts	47,02	65,07	83,12	102,48	121,83
Boss spacing 535 mm	Water capacity/element in litres	0,66	0,96	1,26	1,55	1,85
	Weight when empty/ element in kg	0,98	1,46	1,94	2,42	2,91
Overall height 665 mm	Model	2067	3067	4067	5067	6067
	Output/element in Watts	51,64	71,31	90,97	112,20	133,42
Boss spacing 600 mm	Water capacity/element in litres	0,72	1,04	1,37	1,69	2,01
	Weight when empty/ element in kg	1,08	1,60	2,14	2,66	3,20
Overall height 750 mm	Model	2075	3075	4075	5075	6075
	Output/element in Watts	57,65	79,40	101,15	124,80	148,45
Boss spacing 685 mm	Water capacity/element in litres	0,80	1,15	1,51	1,86	2,22
	Weight when empty/ element in kg	1,21	1,79	2,39	2,97	3,58
Overall height 900 mm	Model	2090	3090	4090	5090	6090
	Output/element in Watts	68,22	93,57	118,92	146,79	174,65
Boss spacing 835 mm	Water capacity/element in litres	0,93	1,34	1,76	2,17	2,59
	Weight when empty/ element in kg	1,44	2,13	2,84	3,53	4,24
Overall height 965 mm	Model	2097	3097	4097		6097
	Output/element in Watts	72,80	99,69	126,57		185,91
Boss spacing 900 mm	Water capacity/element in litres	0,99	1,42	1,87		2,75
	Weight when empty/ element in kg	1,54	2,28	3,04		4,53
Overall height 1000 mm	Model	2100	3100	4100	5100	6100
	Output/element in Watts	75,26	102,97	130,67	161,31	191,95
Boss spacing 935 mm	Water capacity/element in litres	1,02	1,47	1,93	2,38	2,84
	Weight when empty/ element in kg	1,59	2,36	3,14	3,91	4,69
Overall height 1065 mm	Model	2107	3107	4107	5107	6107
	Output/element in Watts	72,71	109,07	138,29	170,72	203,15
Boss spacing 1000 mm	Water capacity/element in litres	1,04	1,55	2,04	2,52	3,00
	Weight when empty/ element in kg	1,76	2,46	3,24	4,15	4,98
Overall height 1100 mm	Model	2110	3110	4110	5110	6110
	Output/element in Watts	82,30	112,34	142,38	175,77	209,16
Boss spacing 1035 mm	Water capacity/element in litres	1,11	1,60	2,10	2,59	3,10
	Weight when empty/ element in kg	1,75	2,59	3,44	4,28	5,14

Output tables

Standard heat output (Watts) at 75/65/20 °C in accordance with EN 442, DIN registration number 6R0900						
		2-columns 	3-columns 	4-columns 	5-columns 	6-columns 
Increments	All lengths from 200 to 2500 mm in increments of 50 mm, the element width is 50 mm.					
Overall height 1200 mm	Model	2120	3120	4120	5120	6120
	Output/element in Watts	89,35	121,70	154,04	190,17	226,29
Boss spacing 1135 mm	Water capacity/element in litres	1,19	1,73	2,27	2,80	3,33
	Weight when empty/ element in kg	1,90	2,81	3,74	4,65	5,58
Overall height 1500 mm	Model	2150	3150	4150	5150	6150
	Output/element in Watts	110,64	149,80	188,95	233,18	277,41
Boss spacing 1435 mm	Water capacity/element in litres	1,46	2,11	2,77	3,42	4,08
	Weight when empty/ element in kg	2,36	3,49	4,64	5,77	6,92
Overall height 1800 mm	Model	2180	3180	4180	5180	6180
	Output/element in Watts	132,23	178,08	223,92	276,14	328,35
Boss spacing 1735 mm	Water capacity/element in litres	1,72	2,49	3,27	4,04	4,82
	Weight when empty/ element in kg	2,82	4,17	5,53	6,88	8,25
Overall height 2000 mm	Model	2200	3200	4200	5200	6200
	Output/element in Watts	146,83	197,10	247,36	304,85	362,34
Boss spacing 1935 mm	Water capacity/element in litres	1,90	2,75	3,61	4,46	5,31
	Weight when empty/ element in kg	3,12	4,62	6,13	7,63	9,15

Standard heat output (Watts) at 75/65/20 °C in accordance with EN 442, DIN registration number 6R0900						
		2-columns 	3-columns 	4-columns 	5-columns 	6-columns 
Increments	All lengths from 200 to 1250 mm in increments of 50 mm, the element width is 50 mm.					
Overall height 2200 mm	Model	2220	3220	4220	5220	6220
	Output/element in Watts	161,63	216,28	270,93	333,68	396,42
Boss spacing 2135 mm	Water capacity/element in litres	2,08	3,01	3,94	4,87	5,81
	Weight when empty/ element in kg	3,43	5,07	6,73	8,38	10,04
Overall height 2500 mm	Model	2250	3250	4250	5250	6250
	Output/element in Watts	184,23	245,44	306,30	377,21	447,78
Boss spacing 2435 mm	Water capacity/element in litres	2,34	3,39	4,45	5,50	6,55
	Weight when empty/ element in kg	3,89	5,75	7,63	9,49	11,37
Overall height 2800 mm	Model	2280	3280	4280	5280	6280
	Output/element in Watts	207,36	275,09	342,82	421,18	499,53
Boss spacing 2735 mm	Water capacity/element in litres	2,61	3,78	4,95	6,12	7,29
	Weight when empty/ element in kg	4,34	6,43	8,53	10,61	12,71
Overall height 3000 mm	Model	2300	3300	4300	5300	6300
	Output/element in Watts	223,10	295,18	367,25	450,78	534,30
Boss spacing 2935 mm	Water capacity/element in litres	2,79	4,03	5,29	6,53	7,79
	Weight when empty/ element in kg	4,65	6,88	9,12	11,35	13,60

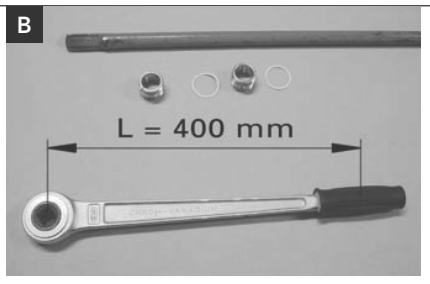
A



Lay both block parts on an even surface.

Carefully remove any colour residue and dirt from the ports. Only use original **VOGEL&NOOT *LaserLine*** nipples and gaskets.
Turn both nipples (approx. one pitch of a screw thread) into the ports of a block; ensure the corresponding nipple is used for the left-handed/right-handed thread. The left thread is marked! (The thread surround is knurled).
Push one gasket onto each nipple.

B



Nipple turning keys are available in lengths of 0.75 m, 1 m, 1.50 m and 2.20 m. Ratchet with 400 mm lever arm.

C

Fit the second block onto the nipples.

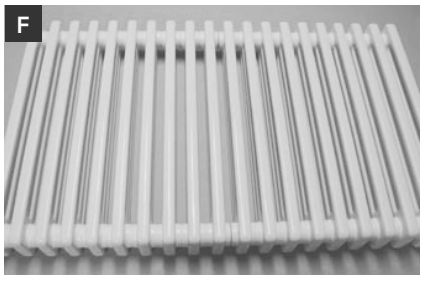
D

Guide the nipple turning key through a port of the last block that was fixed up to the nipple. The square drive of the nipple turning key is provided for the purpose of using the ratchet.

E

Use the nipple turning key to tighten both nipples alternately. The torque should be 90 +/- 10 Nm. Nipples only tightened on one side will cause leaks!

F

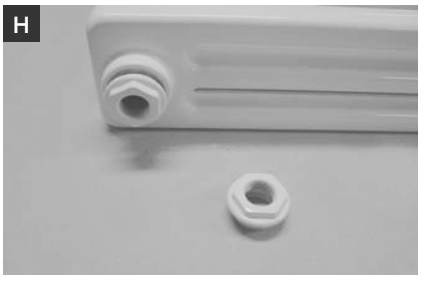


Using the 400 mm-long ratchet with a weight force (on the handle) of 22.5 kg, this will bring about a fastening torque of 90 Nm.

G

Remember that the dummy plug will add 15 mm to the length of the radiator.

H



Remember that the screw plugs with plug gaskets will also add 15 mm to the length of the radiator.

I

Use the plastic key in order to prevent damage to the plugs.

J

Tube radiator ready for connection.

Attention!
The manufacturer's length tolerance is 0 to +1%. Please take this into account in the pre-assembly!

Note:
In the case of **VOGEL&NOOT *LaserLine*** Column radiators that are composed of blocks and are to be connected by means of nipples, the overall length increases by 30 mm (15 mm for each of the screw plugs!).

Block lengths

In order to facilitate the dispatch and transport of **VOGEL&NOOT Laserline** steel Column radiators to and around the construction site, **VOGEL&NOOT Laserline** radiators in larger lengths are supplied in individual element blocks according to model and overall height.

Nipple instructions

VOGEL&NOOT Laserline steel Column radiators supplied in block parts are fixed together on the construction site and connected to one another by nipples. Only the original **VOGEL&NOOT** gaskets supplied with the items are to be used to seal off the nipple ports and the screw plugs at the construction site. Thread paste or similar sealant is not permitted.

The bosses of the individual element blocks and the nipples feature a 1" right-handed thread and a 1" left-handed thread. Two studs are arranged opposite one another on the inside of the nipple, against which the flanges of the nipple turning key will catch during assembly.
In order to ensure the sound sealing of the nipple ports and screw plugs, it is necessary to adhere to the following instructions carefully:

- Lay the block parts horizontally on an even, level surface. In order to protect the coating from damage, cardboard or similar material should be laid underneath.
- Carefully remove any colour residue and dirt from the sites to be sealed and the surfaces of the bosses.
- Only use original **VOGEL&NOOT** Laserline nipples and **VOGEL&NOOT** 1.5 mm gaskets (EPDM, white). Thread paste or similar sealant is not permitted.
- Turn both nipples approximately one pitch of a screw thread into the ports/bosses of a block, ensuring the corresponding one is used for the right-handed/left-handed thread (the surrounds of the left threads are knurled).
- Place a gasket onto each nipple along the central axis so that it is radially aligned.
- Fit the next block part onto the nipple.
- Guide the nipple turning key through a port of the block that was fitted last up to the nipple. The square drive of the nipple turning key is provided for the purpose of using the ratchet. The depth of insertion can already be measured beforehand and marked on the nipple turning key. Only fault-free nipple tools may be used.
- Use the nipple turning key and the ratchet to tighten both nipples alternately and tighten the block parts equally together in this way. Unequal degrees of tightening will result in leaks.

The torque should be 90 +/- 10 Nm 1). The nipples and screw plugs must never be tightened with excessive force! Nipples only tightened on one side will cause leaks!

Installation of the screw plugs

The **VOGEL&NOOT Laserline** steel radiators are sealed after the nipples to the end elements by screw plugs and connected, for the purpose of the supply and return connection, by means of the pipelines. Screw plugs with right-handed and left-handed threads and gaskets are supplied with the radiator blocks.

Attention:
The screw plug length (approx. 15 mm per plug) is to be added to the radiator length.

- Only the original **VOGEL&NOOT** screw plugs and **VOGEL&NOOT** 2.6 mm gaskets (EPDM, white) supplied with the radiator blocks are to be used. Thread paste or similar sealant is not permitted.
- Mating surfaces and threads are to be checked to ensure they appear undamaged and clean.
- Fit the gaskets onto the screw plugs.
- Screw on the plugs by hand, ensuring the correct one is used for the right-handed and left-handed threads. Before fitting the plug collar, the gasket must once more be aligned radially, so that the entire profile seals effectively and the gasket does not become misshapen.
- Screw plugs should only be tightened using a suitable tool (ring spanner or open-jawed spanner). The torque should be 90 +/- 10 Nm 1). The use of a pipe wrench or similar is not permitted.
- The 1" pipe thread of the element blocks is not suitable for direct fitting onto pipes; in order to ensure proper sealing, the screw plugs (with a 1" adapter if necessary– see Accessories) and the supplied gaskets must always be used.

Mounting a long radiator

VOGEL&NOOT Laserline steel radiators of larger overall lengths must be lifted upright and positioned onto the wall brackets by at least two people. In order to prevent bowing of the radiators, suitable auxiliary fittings (Heated bar tabless, shelves, tubing etc.) should be used if necessary. The required number of brackets (load-bearing points) must be taken into consideration.

Exchange of element blocks

When changing element blocks, the original **VOGEL&NOOT** nipples, screw plugs and gaskets must be used. The aforementioned directions must be followed.

[1] Example

The fastening torque should be 90 Nm. If using the 400 mm ratchet and weight force (on the handle) of 22.5 kg, this will bring about a fastening torque of 90 Nm.

Radiator exponents "n"

2-column (per radiator element)

Model	Overall height [mm]	Radiator exponent n
2016	155	**1,21**
2030	300	**1,22**
2035	350	**1,23**
-	-	-
2040	400	**1,23**
-	-	-
2045	450	**1,23**
2050	500	**1,24**
2055	550	**1,24**
2057	565	**1,24**
2060	600	**1,24**
2067	665	**1,25**
2075	750	**1,25**
2090	900	**1,26**
2097	965	**1,27**
2100	1000	**1,27**
-	-	-
2110	1100	**1,28**
2120	1200	**1,28**
2150	1500	**1,30**
2180	1800	**1,32**
2200	2000	**1,33**
2220	2200	**1,34**
2250	2500	**1,34**
2280	2800	**1,34**
2300	3000	**1,30**

3-column (per radiator element)

Model	Overall height [mm]	Radiator exponent n
3016	155	**1,22**
3030	300	**1,23**
3035	350	**1,23**
3037	365	**1,23**
3040	400	**1,24**
3042	415	**1,24**
3045	450	**1,24**
3050	500	**1,25**
3055	550	**1,26**
3057	565	**1,26**
3060	600	**1,26**
3067	665	**1,27**
3075	750	**1,28**
3090	900	**1,29**
3097	965	**1,29**
3100	1000	**1,30**
3107	1065	**1,30**
3110	1100	**1,30**
3120	1200	**1,31**
3150	1500	**1,33**
3180	1800	**1,34**
3200	2000	**1,34**
3220	2200	**1,34**
3250	2500	**1,34**
3280	2800	**1,33**
3300	3000	**1,32**

4-column (per radiator element)

Model	Overall height [mm]	Radiator exponent n
4016	155	**1,22**
4030	300	**1,23**
4035	350	**1,24**
4037	365	**1,24**
4040	400	**1,25**
4042	415	**1,25**
4045	450	**1,26**
4050	500	**1,26**
4055	550	**1,27**
4057	565	**1,27**
4060	600	**1,28**
4067	665	**1,29**
4075	750	**1,30**
4090	900	**1,31**
4097	965	**1,32**
4100	1000	**1,32**
4107	1065	**1,33**
4110	1100	**1,33**
4120	1200	**1,34**
4150	1500	**1,35**
4180	1800	**1,35**
4200	2000	**1,35**
4220	2200	**1,35**
4250	2500	**1,34**
4280	2800	**1,30**
4300	3000	**1,32**

5-column (per radiator element)

Model	Overall height [mm]	Radiator exponent n
5016	155	**1,24**
5030	300	**1,24**
5035	350	**1,25**
5037	365	**1,25**
5040	400	**1,26**
-	-	-
5045	450	**1,26**
5050	500	**1,27**
5055	550	**1,28**
5057	565	**1,28**
5060	600	**1,28**
5067	665	**1,29**
5075	750	**1,30**
5090	900	**1,31**
-	-	-
5100	1000	**1,32**
5107	1065	**1,33**
5110	1100	**1,33**
5120	1200	**1,34**
5150	1500	**1,35**
5180	1800	**1,35**
5200	2000	**1,35**
5220	2200	**1,34**
5250	2500	**1,33**
5280	2800	**1,31**
5300	3000	**1,30**

6-column (per radiator element)

Model	Overall height [mm]	Radiator exponent n
6016	155	**1,24**
6030	300	**1,25**
6035	350	**1,26**
6037	365	**1,26**
6040	400	**1,26**
6042	415	**1,27**
6045	450	**1,27**
6050	500	**1,28**
6055	550	**1,28**
6057	565	**1,28**
6060	600	**1,29**
6067	665	**1,29**
6075	750	**1,30**
6090	900	**1,31**
6097	965	**1,32**
6100	1000	**1,32**
6107	1065	**1,32**
6110	1100	**1,33**
6120	1200	**1,33**
6150	1500	**1,34**
6180	1800	**1,35**
6200	2000	**1,34**
6220	2200	**1,34**
6250	2500	**1,32**
6280	2800	**1,30**
6300	3000	**1,28**