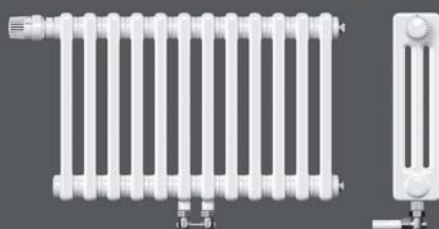




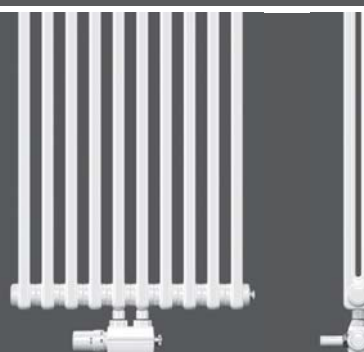
**LASERLINE Standard**

|                         |     |
|-------------------------|-----|
| Technical specification | 218 |
| Models and outputs      | 222 |
| Installation notes      | 225 |
| Radiator exponents      | 227 |



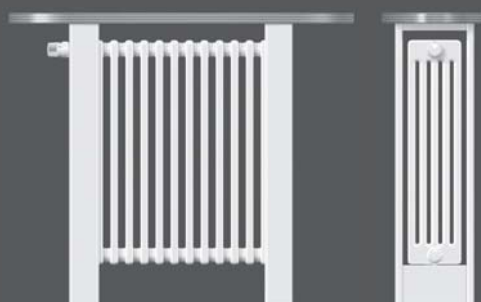
**LASERLINE Centrally connected valve**

|                         |     |
|-------------------------|-----|
| Technical specification | 228 |
| Models and outputs      | 232 |



**LASERLINE Twin**

|                         |     |
|-------------------------|-----|
| Technical specification | 235 |
| Models and outputs      | 236 |



**LASERLINE Architecture Heated bar tables**

|                         |     |
|-------------------------|-----|
| Technical specification | 238 |
| Models and outputs      | 239 |



**LASERLINE Architecture Heated benches**

|                         |     |
|-------------------------|-----|
| Technical specification | 241 |
| Models and outputs      | 242 |



ULOW-E2

Profile panel radiators

Plan panel radiators

Vertical radiators



General information

Preformed plate system

Stapler system

Special systems




Towel warmers

Design radiators



# LASERLINE STANDARD



**EN 442**  
 GEPRÜFT


**CE**


**55**  
**45**  
 DIE neue WÄRME


HEIZKÖRPER  
 RAL GÜTEZEICHEN  
 AUS STAHL


**EN ISO 9001**


DIN EN **442**


 **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 bar max. 10 Heated bar tables

 **Max. operating temperature** 110 °C



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-wrap-ped.

### 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!)

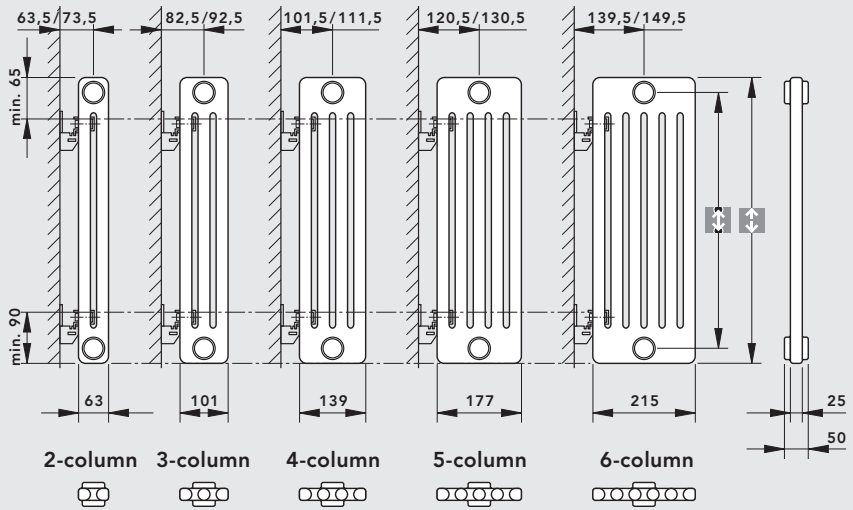
### Fixing and scope of delivery

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.

## 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

| 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              |

| 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   |

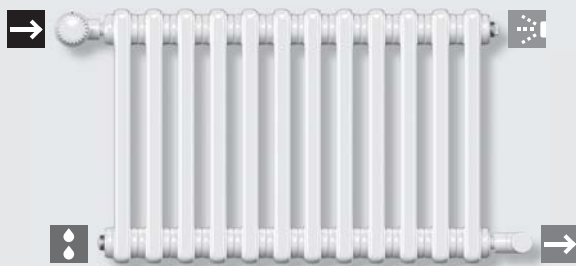
| Model       | Overall height [mm] | Max. elements per block | Nipples supplied by manufacturer max. elements |
|-------------|---------------------|-------------------------|--|
| 5-column    | 2001 - 2200         | 12                      | 18   |
|             | 2201 - 2500         | 11                      | 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                      |  |

- 1 ULOW-E2
- Profile panel radiators
- Plan panel radiators
- Vertical radiators
- 2 General information
- Preformed plate system
- Stapler system
- Special systems
- 3 Towel warmers
- Design radiators
- 4 Standard Column radiators

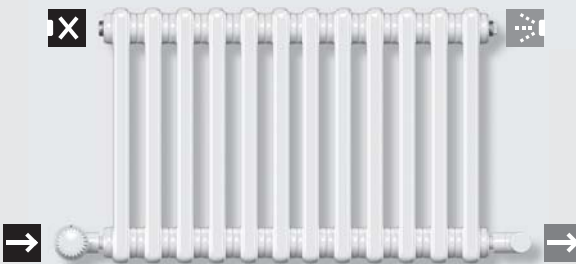
Connection types – double pipe system



A: Single-sided connection

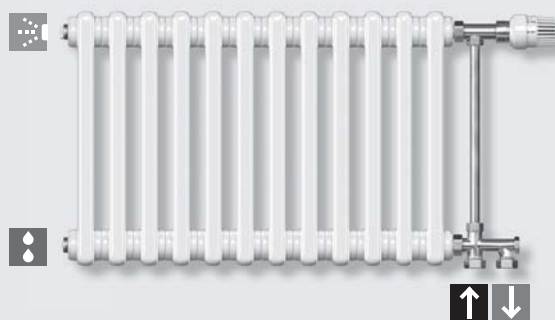


B: Connection on both sides



C: Connection on top

Connection type – single pipe system



Excess temperatures  $\Delta T$

Conversion factor  $U_f$

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.

Conversion factor  $U_f$  to determine the heat output for  $\Delta T$  other than 50 K

| Supply temperature $t_1$ °C | Room air temperature $t_r$ °C | Return temperature $t_2$ °C |    |    |    |    |    |    |
|-----------------------------|-------------------------------|-----------------------------|----|----|----|----|----|----|
|                             |                               | 70                          | 65 | 60 | 55 | 50 | 45 | 40 |
|                             |                               | $\Delta T$                  |    |    |    |    |    |    |
| 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 |

| $\Delta T$ K | $U_f$ | $\Delta T$ 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,  $t_2 = 65$  °C,  $t_r = 20$  °C. Excess temperature  $\Delta T = 50$  K.

In order to determine other  $\Delta T$ , a conversion factor is used as shown above.

**Example**

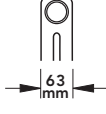
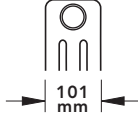
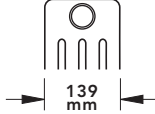
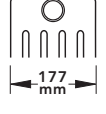
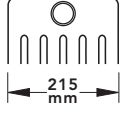


















**VOGEL&NOOT** Laserline tube radiator, model 6050, 10 elements

Standard heat output at  $\Delta T = 50$  K: 103.76 Watts/element x 10 elements = 1037.6 Watts.

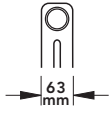
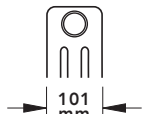
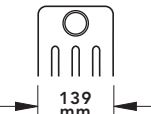
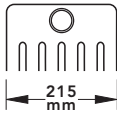

















Supply of 70 °C, return of 55 °C, room temperature 18 °C gives  $\Delta T = 45$  K (see table on the left).

Conversion factor  $U_f = 0.871$  (see table above).

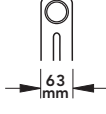
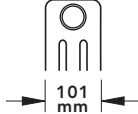
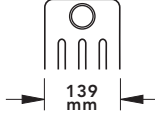
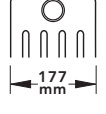
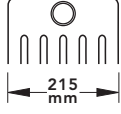








Actual heat output: 1037.6 x 0.871 = 903.75 Watts

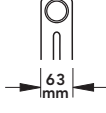
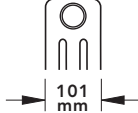
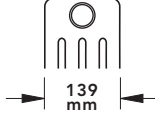
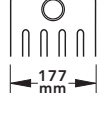
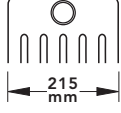








| Standard heat output (Watts) at 75/65/20 °C in accordance with EN 442, DIN registration number 6R0900               |                                  |   |   |  |   |   |
|---|----------------------------------|---|---|--|---|---|
| Attention: the 155 mm-height radiator cannot be mounted using the 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<br><b>155 mm</b>   | <b>Model</b>                     | <b>2016</b>   | <b>3016</b>   | <b>4016</b>  | <b>5016</b>   | <b>6016</b>   |
|   | Output/element in Watts          | 12,66   | 17,51   | 22,83  | 28,71   | 34,80   |
|  Boss spacing<br><b>90 mm</b>      | 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<br><b>300 mm</b>   | <b>Model</b>                     | <b>2030</b>   | <b>3030</b>   | <b>4030</b>  | <b>5030</b>   | <b>6030</b>   |
|   | Output/element in Watts          | 25,24   | 35,40   | 45,56  | 55,98   | 66,39   |
|  Boss spacing<br><b>235 mm</b>     | 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<br><b>350 mm</b>   | <b>Model</b>                     | <b>2035</b>   | <b>3035</b>   | <b>4035</b>  | <b>5035</b>   | <b>6035</b>   |
|   | Output/element in Watts          | 28,96   | 40,50   | 52,04  | 63,99   | 75,93   |
|  Boss spacing<br><b>285 mm</b>     | 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<br><b>365 mm</b> | <b>Model</b>                     |   | <b>3037</b>   | <b>4037</b>  | <b>5037</b>   | <b>6037</b>   |
|   | Output/element in Watts          |   | 42,01   | 53,96  | 66,36   | 78,76   |
|  Boss spacing<br><b>300 mm</b>   | 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<br><b>400 mm</b> | <b>Model</b>                     | <b>2040</b>   | <b>3040</b>   | <b>4040</b>  | <b>5040</b>   | <b>6040</b>   |
|   | Output/element in Watts          | 32,63   | 45,52   | 58,40  | 71,87   | 85,33   |
|  Boss spacing<br><b>335 mm</b>   | 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<br><b>415 mm</b> | <b>Model</b>                     |   | <b>3042</b>   | <b>4042</b>  |   | <b>6042</b>   |
|   | Output/element in Watts          |   | 47,01   | 60,29  |   | 88,12   |
|  Boss spacing<br><b>350 mm</b>   | 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<br><b>450 mm</b> | <b>Model</b>                     | <b>2045</b>   | <b>3045</b>   | <b>4045</b>  | <b>5045</b>   | <b>6045</b>   |
|   | Output/element in Watts          | 36,26   | 50,47   | 64,68  | 79,64   | 94,60   |
|  Boss spacing<br><b>385 mm</b>   | 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<br><b>500 mm</b> | <b>Model</b>                     | <b>2050</b>   | <b>3050</b>   | <b>4050</b>  | <b>5050</b>   | <b>6050</b>   |
|   | Output/element in Watts          | 39,87   | 55,38   | 70,88  | 87,32   | 103,76  |
|  Boss spacing<br><b>435 mm</b>   | 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<br><b>550 mm</b> | <b>Model</b>                     | <b>2055</b>   | <b>3055</b>   | <b>4055</b>  | <b>5055</b>   | <b>6055</b>   |
|   | Output/element in Watts          | 43,46   | 60,25   | 77,03  | 94,93   | 112,83  |
|  Boss spacing<br><b>485 mm</b>   | 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<br> | 3-columns<br> | 4-columns<br> | 5-columns<br> | 6-columns<br> |
| <b>Increments</b>  | All lengths from 200 to 2500 mm in increments of 50 mm, the element width is 50 mm. |  |  |   |  |  |
|  Overall height<br><b>565 mm</b>    | <b>Model</b>  | <b>2057</b>  | <b>3057</b>  | <b>4057</b>   | <b>5057</b>  | <b>6057</b>  |
|  | Output/element in Watts   | 44,53  | 61,70  | 78,86   | 97,20  | 115,54   |
|  Boss spacing<br><b>500 mm</b>      | 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<br><b>600 mm</b>    | <b>Model</b>  | <b>2060</b>  | <b>3060</b>  | <b>4060</b>   | <b>5060</b>  | <b>6060</b>  |
|  | Output/element in Watts   | 47,02  | 65,07  | 83,12   | 102,48   | 121,83   |
|  Boss spacing<br><b>535 mm</b>      | 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<br><b>665 mm</b>    | <b>Model</b>  | <b>2067</b>  | <b>3067</b>  | <b>4067</b>   | <b>5067</b>  | <b>6067</b>  |
|  | Output/element in Watts   | 51,64  | 71,31  | 90,97   | 112,20   | 133,42   |
|  Boss spacing<br><b>600 mm</b>      | 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<br><b>750 mm</b>  | <b>Model</b>  | <b>2075</b>  | <b>3075</b>  | <b>4075</b>   | <b>5075</b>  | <b>6075</b>  |
|  | Output/element in Watts   | 57,65  | 79,40  | 101,15  | 124,80   | 148,45   |
|  Boss spacing<br><b>685 mm</b>    | 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<br><b>900 mm</b>  | <b>Model</b>  | <b>2090</b>  | <b>3090</b>  | <b>4090</b>   | <b>5090</b>  | <b>6090</b>  |
|  | Output/element in Watts   | 68,22  | 93,57  | 118,92  | 146,79   | 174,65   |
|  Boss spacing<br><b>835 mm</b>    | 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<br><b>965 mm</b>  | <b>Model</b>  | <b>2097</b>  | <b>3097</b>  | <b>4097</b>   |  | <b>6097</b>  |
|  | Output/element in Watts   | 72,80  | 99,69  | 126,57  |  | 185,91   |
|  Boss spacing<br><b>900 mm</b>    | 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<br><b>1000 mm</b> | <b>Model</b>  | <b>2100</b>  | <b>3100</b>  | <b>4100</b>   | <b>5100</b>  | <b>6100</b>  |
|  | Output/element in Watts   | 75,26  | 102,97   | 130,67  | 161,31   | 191,95   |
|  Boss spacing<br><b>935 mm</b>    | 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<br><b>1065 mm</b> | <b>Model</b>  | <b>2107</b>  | <b>3107</b>  | <b>4107</b>   | <b>5107</b>  | <b>6107</b>  |
|  | Output/element in Watts   | 72,71  | 109,07   | 138,29  | 170,72   | 203,15   |
|  Boss spacing<br><b>1000 mm</b>   | 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<br><b>1100 mm</b> | <b>Model</b>  | <b>2110</b>  | <b>3110</b>  | <b>4110</b>   | <b>5110</b>  | <b>6110</b>  |
|  | Output/element in Watts   | 82,30  | 112,34   | 142,38  | 175,77   | 209,16   |
|  Boss spacing<br><b>1035 mm</b>   | 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   |

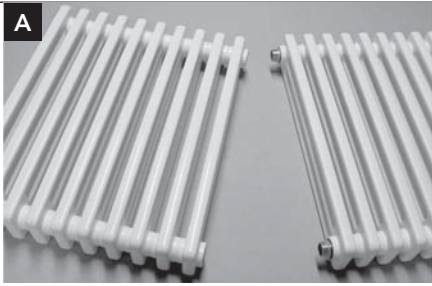
LASERLINE STANDARD

| 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   |
|  |   |  |  |  |  |  |
| <b>Increments</b>  | All lengths from 200 to 2500 mm in increments of 50 mm, the element width is 50 mm. |   |   |  |   |   |
|  Overall height<br><b>1200 mm</b>   | <b>Model</b>  | <b>2120</b>   | <b>3120</b>   | <b>4120</b>  | <b>5120</b>   | <b>6120</b>   |
|  | Output/element in Watts   | 89,35   | 121,70  | 154,04   | 190,17  | 226,29  |
|  Boss spacing<br><b>1135 mm</b>     | 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<br><b>1500 mm</b>   | <b>Model</b>  | <b>2150</b>   | <b>3150</b>   | <b>4150</b>  | <b>5150</b>   | <b>6150</b>   |
|  | Output/element in Watts   | 110,64  | 149,80  | 188,95   | 233,18  | 277,41  |
|  Boss spacing<br><b>1435 mm</b>     | 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<br><b>1800 mm</b>   | <b>Model</b>  | <b>2180</b>   | <b>3180</b>   | <b>4180</b>  | <b>5180</b>   | <b>6180</b>   |
|  | Output/element in Watts   | 132,23  | 178,08  | 223,92   | 276,14  | 328,35  |
|  Boss spacing<br><b>1735 mm</b>     | 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<br><b>2000 mm</b> | <b>Model</b>  | <b>2200</b>   | <b>3200</b>   | <b>4200</b>  | <b>5200</b>   | <b>6200</b>   |
|  | Output/element in Watts   | 146,83  | 197,10  | 247,36   | 304,85  | 362,34  |
|  Boss spacing<br><b>1935 mm</b>   | 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   |
|  |   |  |  |  |  |  |
| <b>Increments</b>  | All lengths from 200 to 1250 mm in increments of 50 mm, the element width is 50 mm. |   |   |  |   |   |
|  Overall height<br><b>2200 mm</b> | <b>Model</b>  | <b>2220</b>   | <b>3220</b>   | <b>4220</b>  | <b>5220</b>   | <b>6220</b>   |
|  | Output/element in Watts   | 161,63  | 216,28  | 270,93   | 333,68  | 396,42  |
|  Boss spacing<br><b>2135 mm</b>   | 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<br><b>2500 mm</b> | <b>Model</b>  | <b>2250</b>   | <b>3250</b>   | <b>4250</b>  | <b>5250</b>   | <b>6250</b>   |
|  | Output/element in Watts   | 184,23  | 245,44  | 306,30   | 377,21  | 447,78  |
|  Boss spacing<br><b>2435 mm</b>   | 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<br><b>2800 mm</b> | <b>Model</b>  | <b>2280</b>   | <b>3280</b>   | <b>4280</b>  | <b>5280</b>   | <b>6280</b>   |
|  | Output/element in Watts   | 207,36  | 275,09  | 342,82   | 421,18  | 499,53  |
|  Boss spacing<br><b>2735 mm</b>   | 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<br><b>3000 mm</b> | <b>Model</b>  | <b>2300</b>   | <b>3300</b>   | <b>4300</b>  | <b>5300</b>   | <b>6300</b>   |
|  | Output/element in Watts   | 223,10  | 295,18  | 367,25   | 450,78  | 534,30  |
|  Boss spacing<br><b>2935 mm</b>   | 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   |



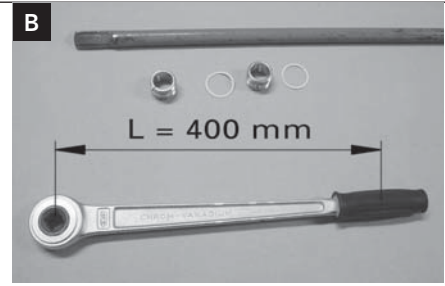
## Tube radiator nipples



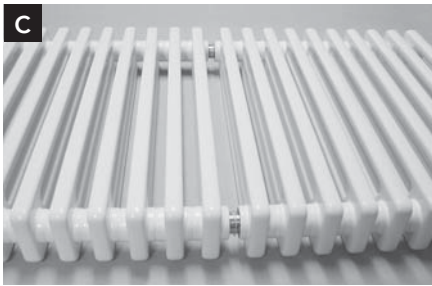
Lay both block parts on an even surface.

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.



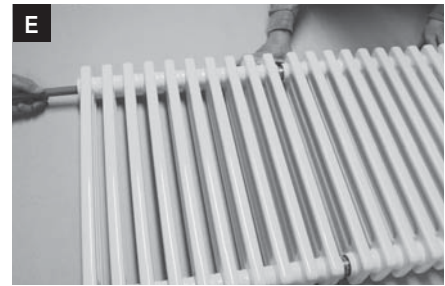
Nipple turning keys are available in lengths of 0.75 m, 1 m, 1.50 m and 2.20 m. Ratchet with 400 mm lever arm.



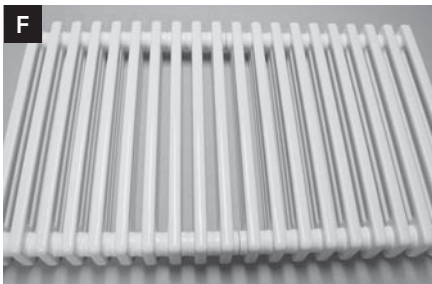
Fit the second block onto the nipples.



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.



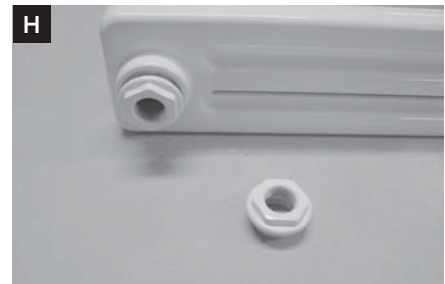
Use the nipple turning key to tighten both nipples alternately. The torque should be 90 +/- 10 Nm. Nipples only tightened on one side will cause leaks!



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.



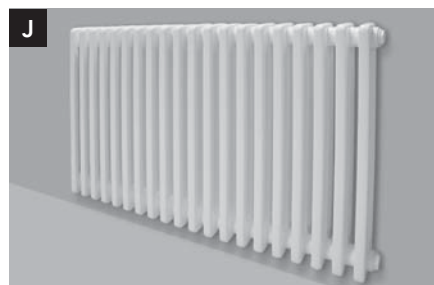
Remember that the dummy plug will add 15 mm to the length of the radiator.



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



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



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.

### <sup>1)</sup> 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                |

LASERLINE STANDARD

Accessories

Fixing

The standard delivery of Laserline Column radiators does not include any fixings. These are to be selected depending on use from the range of accessories and are to be ordered separately. However, connection sets with angle brackets and connection sets with drilled brackets are available as standard fixtures. These sets each include the appropriate number of brackets, radiator mounts, the necessary screws and anchor bolt (suitability to be checked by the customer!) and an instruction sheet\*. When installing, it is recommended that the upper radiator brackets are mounted immediately below the upper boss.

In addition, the accessories range includes drilled tension brackets, floor brackets and wall brackets in various designs and sizes for fixing in conjunction with radiator mounts. A special adjustable wall bracket makes it possible to set a very wide range of wall clearances.

The Laserline tube radiator is also available in a special design with welded-on clip brackets.

It is essential to note in each case the number of fixing points that are required (see next pages). A fixing point is understood to be any load-bearing fixture (spacing brackets and clamping holders are not fixing points). A fixing point above (recommended position directly underneath the boss) and a fixing point underneath (Fig. 1) in each case form a vertical fixture axis.

The load-bearing capacity and stability of the walls must be checked as to whether they can support the intended load in each case. Clip brackets are not supplied with the standard design of the Laserline tube radiator.

Both floor brackets and circular floor brackets are available for free-standing installation of the Laserline Column radiators. The floor brackets also offer the option to fit a height-adjustable window Heated benches support. Both brackets can be used for radiator lengths of up to 1000 mm. A SINGLE floor bracket/circular floor bracket is recommended per fixture axis. In the case of extraordinary loads, it is recommended that the wall bracket for use in public areas should be used (e.g. in schools).

\*Attention: the radiator with the overall height of 155 mm can only be mounted with circular floor brackets or with wall brackets WK 155.

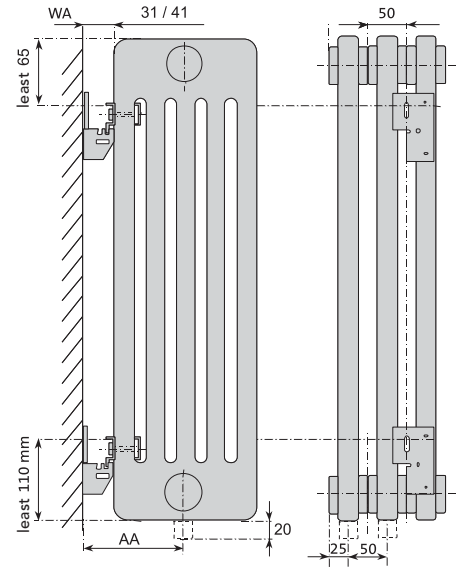
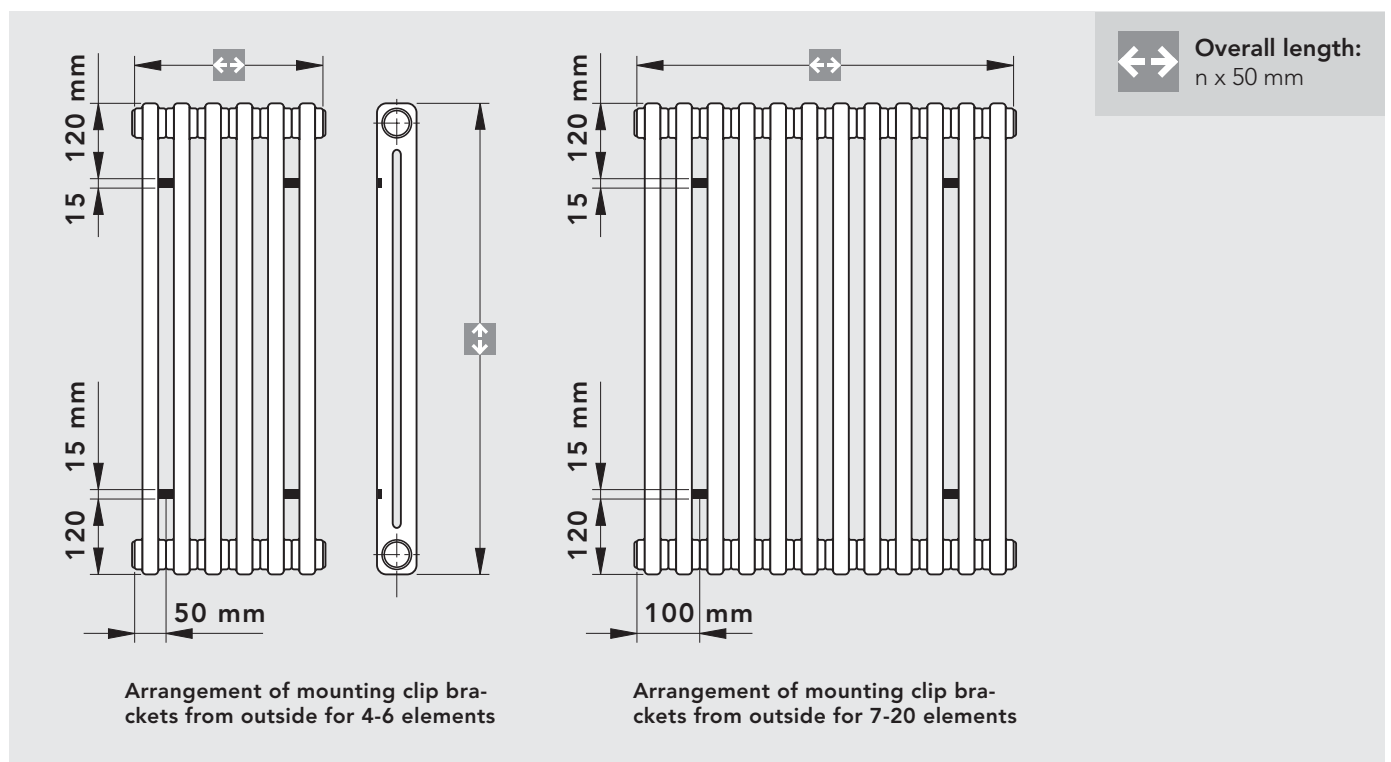


Fig. 1 Fixing and connection dimensions for connection set with angled bracket. The 4-part set includes 4 x the items shown below right, while the 6-part set includes 6 x these items.

| Model    | Overall depth | Angled bracket set |                         |
|----------|---------------|--------------------|-------------------------|
|          |               | wall clearance WA  | connection clearance AA |
| 2-column | 63            | 31 / 41            | 63,5 / 73,5             |
| 3-column | 101           | 31 / 41            | 82,5 / 92,5             |
| 4-column | 139           | 31 / 41            | 101,5 / 111,5           |
| 5-column | 177           | 31 / 41            | 120,5 / 130,5           |
| 6-column | 215           | 31 / 41            | 139,5 / 149,5           |

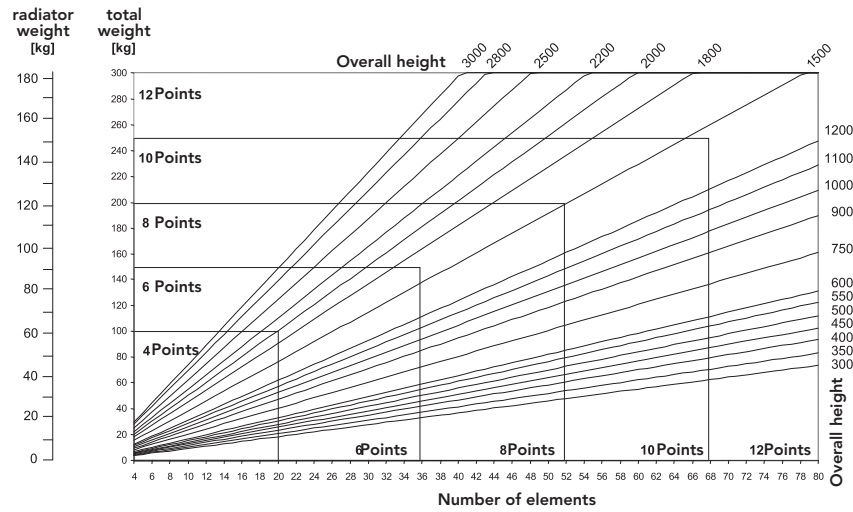


Accessories

2-column:

Maximum block lengths and required fixing points

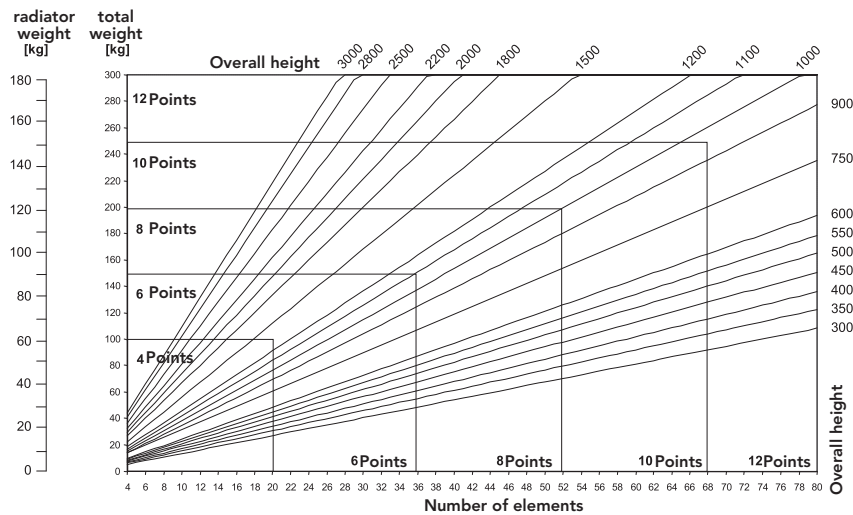
| Overall height [mm] | Max. elements per block |
|---------------------|-------------------------|
| up to 1000          | 40                      |
| up to 3000          | 19                      |



3-column:

Maximum block lengths and required fixing points

| Overall height [mm] | Max. elements per block |
|---------------------|-------------------------|
| up to 1000          | 40                      |
| up to 2200          | 19                      |
| up to 3000          | 14                      |



4-column:

Maximum block lengths and required fixing points

| Overall height [mm] | Max. elements per block |
|---------------------|-------------------------|
| up to 750           | 40                      |
| up to 1000          | 30                      |
| up to 1500          | 19                      |
| up to 2200          | 14                      |
| up to 3000          | 10                      |

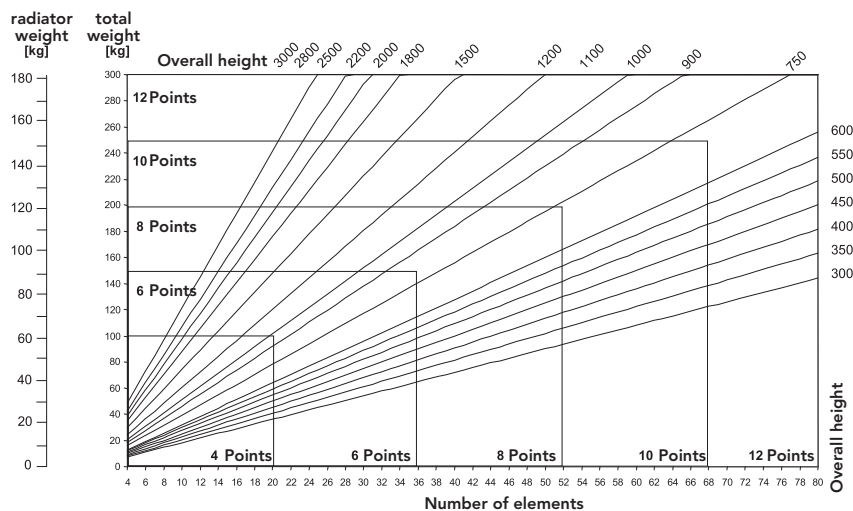


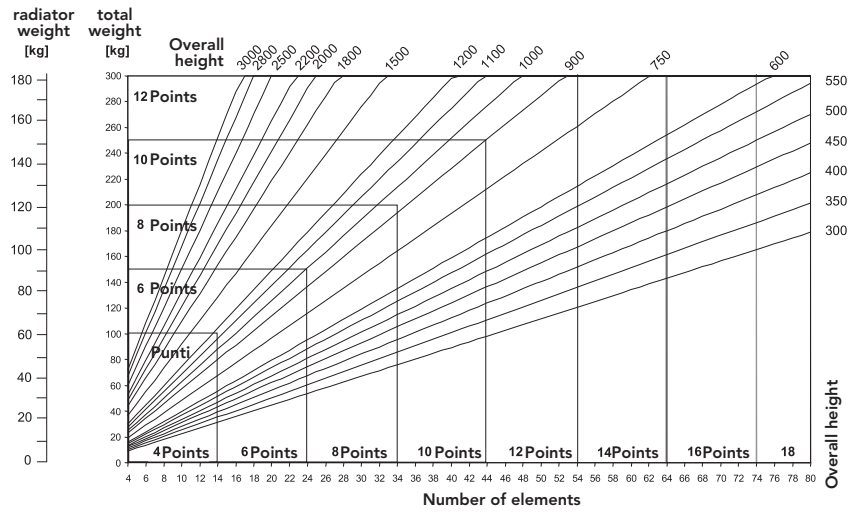
Fig. 2 Determining the necessary fixing points for the 2-, 3- and 4-Column radiators. A fixing point above (recommended position directly underneath the boss) and a fixing point at the bottom in each case (Fig. 1) form a vertical fixture axis.

Accessories

5-column:

Maximum block lengths and required fixing points

| Overall height [mm] | Max. elements per block |
|---------------------|-------------------------|
| up to 600           | 40                      |
| up to 665           | 35                      |
| up to 750           | 30                      |
| up to 1000          | 25                      |
| up to 1200          | 19                      |
| up to 1500          | 15                      |
| up to 2500          | 10                      |
| up to 3000          | 8                       |



6-column:

Maximum block lengths and required fixing points

| Overall height [mm] | Max. elements per block |
|---------------------|-------------------------|
| up to 500           | 40                      |
| up to 600           | 35                      |
| up to 665           | 30                      |
| up to 750           | 25                      |
| up to 1000          | 20                      |
| up to 1200          | 15                      |
| up to 1500          | 13                      |
| up to 2000          | 10                      |
| up to 2500          | 8                       |
| up to 3000          | 7                       |

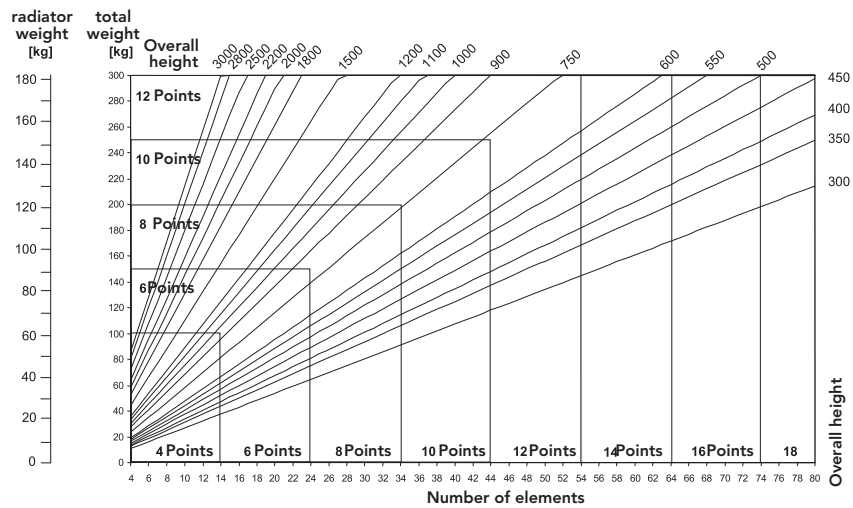


Abb. 3 Determining the necessary fixing points for the 5- and 6-Column radiators. A fixing point above (recommended position directly underneath the boss) and a fixing point at the bottom in each case (Fig. 1) form a vertical fixture axis.

Note:

A SINGLE floor bracket/circular floor bracket is recommended per fixture axis.

The radiator with the overall height of 155 mm can only be mounted with circular floor brackets or with wall brackets WK 155.