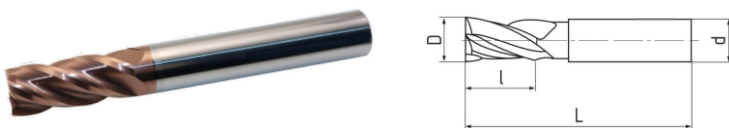


## VHM Universal-Schaftfräser 4-schneidig



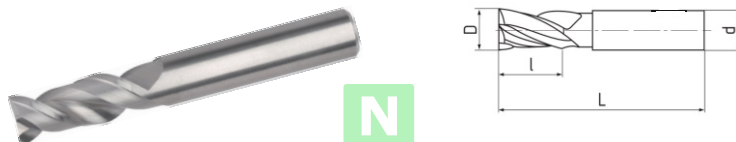
| Bestellcode<br>Order Code | D   | d  | l  | L   | EUR    |
|---------------------------|-----|----|----|-----|--------|
| HA1100-Z4-0100            | 1   | 4  | 3  | 50  | 5,21   |
| HA1100-Z4-0150            | 1,5 | 4  | 4  | 50  | 5,21   |
| HA1100-Z4-0200            | 2   | 4  | 5  | 50  | 5,21   |
| HA1100-Z4-0250            | 2,5 | 4  | 6  | 50  | 5,21   |
| HA1100-Z4-0300            | 3   | 3  | 8  | 50  | 5,21   |
| HA1100-Z4-0310            | 3   | 3  | 11 | 75  | 7,22   |
| HA1100-Z4-0400            | 4   | 4  | 10 | 50  | 5,21   |
| HA1100-Z4-0410            | 4   | 4  | 12 | 75  | 7,22   |
| HA1100-Z4-0500            | 5   | 5  | 13 | 50  | 6,89   |
| HA1100-Z4-0510            | 5   | 5  | 15 | 75  | 10,25  |
| HA1100-Z4-0600            | 6   | 6  | 15 | 50  | 6,89   |
| HA1100-Z4-0610            | 6   | 6  | 20 | 75  | 10,87  |
| HA1100-Z4-0620            | 6   | 6  | 25 | 100 | 13,42  |
| HA1100-Z4-0800            | 8   | 8  | 20 | 60  | 12,21  |
| HA1100-Z4-0810            | 8   | 8  | 25 | 75  | 14,05  |
| HA1100-Z4-0820            | 8   | 8  | 30 | 100 | 19,42  |
| HA1100-Z4-1000            | 10  | 10 | 25 | 75  | 16,82  |
| HA1100-Z4-1020            | 10  | 10 | 40 | 100 | 35,68  |
| HA1100-Z4-1040            | 10  | 10 | 50 | 150 | 39,91  |
| HA1100-Z4-1200            | 12  | 12 | 25 | 75  | 23,05  |
| HA1100-Z4-1220            | 12  | 12 | 45 | 100 | 37,14  |
| HA1100-Z4-1240            | 12  | 12 | 60 | 150 | 53,90  |
| HA1100-Z4-1600            | 16  | 16 | 45 | 100 | 83,29  |
| HA1100-Z4-1640            | 16  | 16 | 70 | 150 | 129,00 |
| HA1100-Z4-2000            | 20  | 20 | 45 | 100 | 124,49 |
| HA1100-Z4-2040            | 20  | 20 | 70 | 150 | 192,92 |

## HPC VHM-Schaftfräser 4-schneidig mit ungleichem Drallwinkel



| Bestellcode<br>Order Code | D   | d  | l  | L  | EUR   |
|---------------------------|-----|----|----|----|-------|
| HA3538-Z4-0100            | 1   | 4  | 3  | 50 | 8,93  |
| HA3538-Z4-0150            | 1,5 | 4  | 4  | 50 | 8,93  |
| HA3538-Z4-0200            | 2   | 4  | 5  | 50 | 8,93  |
| HA3538-Z4-0250            | 2,5 | 4  | 6  | 50 | 8,93  |
| HA3538-Z4-0300            | 3   | 3  | 8  | 50 | 8,93  |
| HA3538-Z4-0400            | 4   | 4  | 10 | 50 | 8,93  |
| HA3538-Z4-0500            | 5   | 5  | 13 | 50 | 11,58 |
| HA3538-Z4-0600            | 6   | 6  | 15 | 50 | 11,58 |
| HA3538-Z4-0800            | 8   | 8  | 20 | 60 | 18,02 |
| HA3538-Z4-1000            | 10  | 10 | 25 | 75 | 28,64 |
| HA3538-Z4-1200            | 12  | 12 | 25 | 75 | 37,02 |

## VHM Schaftfräser 3-schneidig für Alu



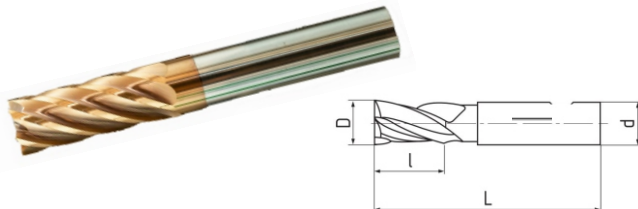
| Bestellcode<br>Order Code | D   | d  | l  | L   | EUR   |
|---------------------------|-----|----|----|-----|-------|
| HA1163-Z3-0100            | 1   | 4  | 3  | 50  | 5,21  |
| HA1163-Z3-0150            | 1,5 | 4  | 5  | 50  | 5,21  |
| HA1163-Z3-0200            | 2   | 4  | 6  | 50  | 5,21  |
| HA1163-Z3-0250            | 2,5 | 4  | 8  | 50  | 5,21  |
| HA1163-Z3-0300            | 3   | 3  | 9  | 50  | 5,21  |
| HA1163-Z3-0310            | 3   | 3  | 11 | 75  | 7,22  |
| HA1163-Z3-0400            | 4   | 4  | 12 | 50  | 5,21  |
| HA1163-Z3-0410            | 4   | 4  | 13 | 75  | 7,22  |
| HA1163-Z3-0500            | 5   | 5  | 15 | 50  | 6,89  |
| HA1163-Z3-0510            | 5   | 5  | 15 | 75  | 10,25 |
| HA1163-Z3-0600            | 6   | 6  | 18 | 50  | 6,89  |
| HA1163-Z3-0610            | 6   | 6  | 20 | 75  | 10,87 |
| HA1163-Z3-0620            | 6   | 6  | 25 | 100 | 13,42 |
| HA1163-Z3-0800            | 8   | 8  | 24 | 60  | 12,21 |
| HA1163-Z3-0810            | 8   | 8  | 25 | 75  | 14,05 |
| HA1163-Z3-0820            | 8   | 8  | 35 | 100 | 19,42 |
| HA1163-Z3-1000            | 10  | 10 | 30 | 75  | 16,82 |
| HA1163-Z3-1020            | 10  | 10 | 40 | 100 | 35,68 |
| HA1163-Z3-1040            | 10  | 10 | 50 | 150 | 39,91 |
| HA1163-Z3-1200            | 12  | 12 | 35 | 75  | 23,05 |
| HA1163-Z3-1220            | 12  | 12 | 45 | 100 | 37,14 |
| HA1163-Z3-1240            | 12  | 12 | 60 | 150 | 53,90 |

## VHM Radiusfräser 2-schneidig



| Bestellcode<br>Order Code | R    | D    | d  | l  | L  | EUR   |
|---------------------------|------|------|----|----|----|-------|
| HA1119-Z2-0100            | 0,5  | 1,0  | 4  | 3  | 50 | 5,75  |
| HA1119-Z2-0150            | 0,75 | 1,5  | 4  | 4  | 50 | 5,75  |
| HA1119-Z2-0200            | 1,0  | 2,0  | 4  | 5  | 50 | 5,75  |
| HA1119-Z2-0250            | 1,25 | 2,5  | 4  | 7  | 50 | 5,75  |
| HA1119-Z2-0300            | 1,5  | 3,0  | 3  | 8  | 50 | 5,75  |
| HA1119-Z2-0400            | 2,0  | 4,0  | 4  | 10 | 50 | 5,75  |
| HA1119-Z2-0500            | 2,5  | 5,0  | 5  | 12 | 50 | 8,00  |
| HA1119-Z2-0600            | 3,0  | 6,0  | 6  | 15 | 50 | 8,00  |
| HA1119-Z2-0800            | 4,0  | 8,0  | 8  | 20 | 60 | 12,72 |
| HA1119-Z2-1000            | 5,0  | 10,0 | 10 | 25 | 75 | 18,01 |
| HA1119-Z2-1200            | 6,0  | 12,0 | 12 | 30 | 75 | 24,71 |

## VHM Schlichtfräser 6-schneidig



| Bestellcode<br>Order Code | D  | d  | l  | L   | EUR    |
|---------------------------|----|----|----|-----|--------|
| HA1150-Z6-0300            | 3  | 3  | 8  | 50  | 7,46   |
| HA1150-Z6-0400            | 4  | 4  | 10 | 50  | 7,46   |
| HA1150-Z6-0500            | 5  | 5  | 13 | 50  | 10,84  |
| HA1150-Z6-0600            | 6  | 6  | 15 | 50  | 10,84  |
| HA1150-Z6-0800            | 8  | 8  | 20 | 60  | 14,01  |
| HA1150-Z6-1000            | 10 | 10 | 25 | 75  | 20,36  |
| HA1150-Z6-1200            | 12 | 12 | 30 | 75  | 27,39  |
| HA1150-Z6-1600            | 16 | 16 | 36 | 100 | 83,29  |
| HA1150-Z6-2000            | 20 | 20 | 45 | 100 | 124,49 |

## VHM Schruppfräser 4-schneidig



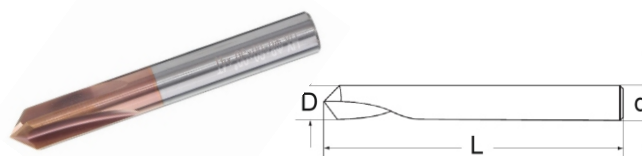
| Bestellcode<br>Order Code | D  | d  | l  | L   | EUR   |
|---------------------------|----|----|----|-----|-------|
| HA1115-Z4-0400            | 4  | 4  | 10 | 50  | 6,91  |
| HA1115-Z4-0420            | 4  | 4  | 16 | 100 | 10,66 |
| HA1115-Z4-0600            | 6  | 6  | 15 | 50  | 11,95 |
| HA1115-Z4-0620            | 6  | 6  | 24 | 100 | 18,20 |
| HA1115-Z4-0800            | 8  | 8  | 20 | 60  | 19,48 |
| HA1115-Z4-0820            | 8  | 8  | 32 | 100 | 28,39 |
| HA1115-Z4-1000            | 10 | 10 | 25 | 75  | 30,80 |
| HA1115-Z4-1020            | 10 | 10 | 40 | 100 | 39,25 |
| HA1115-Z4-1200            | 12 | 12 | 30 | 75  | 40,85 |
| HA1115-Z4-1220            | 12 | 12 | 40 | 100 | 53,24 |

## VHM Fräser mit geraden Schneiden



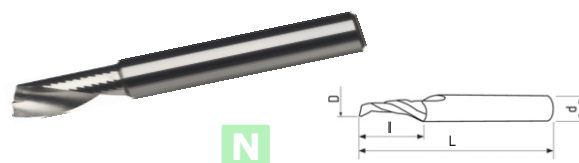
| Bestellcode<br>Order Code | D     | L  | EUR   |
|---------------------------|-------|----|-------|
| HA1020-Z4-0300            | 3,175 | 50 | 5,54  |
| HA1020-Z4-0400            | 4     | 50 | 6,46  |
| HA1020-Z4-0600            | 6     | 50 | 12,92 |
| HA1020-Z4-0800            | 8     | 62 | 17,31 |
| HA1020-Z4-1000            | 10    | 75 | 37,40 |

## VHM Fasenfräser 90° / 60°



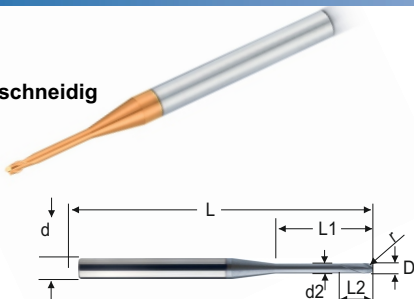
| Bestellcode<br>Order Code | α   | D  | L   | EUR    |
|---------------------------|-----|----|-----|--------|
| HA1170-Z4-9003            | 90° | 3  | 50  | 7,46   |
| HA1170-Z4-9004            | 90° | 4  | 50  | 7,46   |
| HA1170-Z4-9006            | 90° | 6  | 50  | 10,84  |
| HA1170-Z4-9008            | 90° | 8  | 60  | 14,01  |
| HA1170-Z4-9010            | 90° | 10 | 75  | 20,36  |
| HA1170-Z4-9012            | 90° | 12 | 75  | 27,39  |
| HA1170-Z4-9016            | 90° | 16 | 100 | 83,29  |
| HA1170-Z4-9020            | 90° | 20 | 100 | 124,49 |
| HA1170-Z4-6003            | 60° | 3  | 50  | 7,46   |
| HA1170-Z4-6004            | 60° | 4  | 50  | 7,46   |
| HA1170-Z4-6006            | 60° | 6  | 50  | 10,84  |
| HA1170-Z4-6008            | 60° | 8  | 60  | 14,01  |
| HA1170-Z4-6010            | 60° | 10 | 75  | 20,36  |
| HA1170-Z4-6012            | 60° | 12 | 75  | 27,39  |
| HA1170-Z4-6016            | 60° | 16 | 100 | 83,29  |
| HA1170-Z4-6020            | 60° | 20 | 100 | 124,49 |

## VHM Einzahnfräser für Aluminium



| Bestellcode<br>Order Code | D     | d     | l  | L  | EUR   |
|---------------------------|-------|-------|----|----|-------|
| HA1160-Z1-0150N           | 1,5   | 3,175 | 5  | 38 | 5,54  |
| HA1160-Z1-0200N           | 2,0   | 3,175 | 6  | 38 | 5,54  |
| HA1160-Z1-0200L           | 2,0   | 3,175 | 17 | 38 | 5,54  |
| HA1160-Z1-0300N           | 3,175 | 3,175 | 12 | 38 | 5,54  |
| HA1160-Z1-0300L           | 3,175 | 3,175 | 22 | 38 | 5,54  |
| HA1160-Z1-0300XL          | 3,175 | 3,175 | 32 | 55 | 7,41  |
| HA1160-Z1-0400N           | 4     | 3     | 12 | 38 | 8,65  |
| HA1160-Z1-0400L           | 4     | 4     | 22 | 38 | 8,87  |
| HA1160-Z1-0400XL          | 4     | 5     | 32 | 55 | 9,41  |
| HA1160-Z1-0500XL          | 5     | 6     | 32 | 55 | 10,38 |
| HA1160-Z1-0600N           | 6     | 6     | 12 | 50 | 13,83 |
| HA1160-Z1-0600L           | 6     | 6     | 22 | 50 | 14,15 |
| HA1160-Z1-0600XL          | 6     | 6     | 32 | 55 | 14,66 |

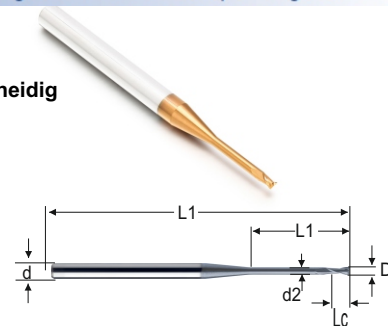
## VHM Mikro Radiusfräser 2-schneidig



| Bestellnummer / Order No. | D   | r    | L2  | d2   | L1 | L  | d | EUR  |
|---------------------------|-----|------|-----|------|----|----|---|------|
| HA1131-Z2-05404505        | 0,5 | 0,25 | 0,5 | 0,45 | 5  | 45 | 4 | 9,86 |
| HA1131-Z2-05404510        | 0,5 | 0,25 | 0,5 | 0,45 | 10 | 45 | 4 | 9,86 |
| HA1131-Z2-06404505        | 0,6 | 0,30 | 0,6 | 0,55 | 5  | 45 | 4 | 9,86 |
| HA1131-Z2-06404510        | 0,6 | 0,30 | 0,6 | 0,55 | 10 | 45 | 4 | 9,86 |
| HA1131-Z2-06404516        | 0,6 | 0,30 | 0,6 | 0,55 | 16 | 45 | 4 | 9,86 |
| HA1131-Z2-08404506        | 0,8 | 0,40 | 0,8 | 0,75 | 6  | 45 | 4 | 9,86 |
| HA1131-Z2-08404510        | 0,8 | 0,40 | 0,8 | 0,75 | 10 | 45 | 4 | 9,86 |
| HA1131-Z2-08404512        | 0,8 | 0,40 | 0,8 | 0,75 | 12 | 45 | 4 | 9,86 |
| HA1131-Z2-08404516        | 0,8 | 0,40 | 0,8 | 0,75 | 16 | 45 | 4 | 9,86 |
| HA1131-Z2-10405006        | 1,0 | 0,50 | 1,0 | 0,95 | 6  | 50 | 4 | 9,86 |
| HA1131-Z2-10405010        | 1,0 | 0,50 | 1,0 | 0,95 | 10 | 50 | 4 | 9,86 |
| HA1131-Z2-10405012        | 1,0 | 0,50 | 1,0 | 0,95 | 12 | 50 | 4 | 9,86 |
| HA1131-Z2-10405016        | 1,0 | 0,50 | 1,0 | 0,95 | 16 | 50 | 4 | 9,86 |
| HA1131-Z2-10405020        | 1,0 | 0,50 | 1,0 | 0,95 | 20 | 50 | 4 | 9,86 |
| HA1131-Z2-12405006        | 1,2 | 0,60 | 1,2 | 1,15 | 6  | 50 | 4 | 9,86 |
| HA1131-Z2-12405010        | 1,2 | 0,60 | 1,2 | 1,15 | 10 | 50 | 4 | 9,86 |
| HA1131-Z2-12406016        | 1,2 | 0,60 | 1,2 | 1,15 | 16 | 60 | 4 | 9,86 |
| HA1131-Z2-12406020        | 1,2 | 0,60 | 1,2 | 1,15 | 20 | 60 | 4 | 9,86 |
| HA1131-Z2-15405016        | 1,5 | 0,75 | 1,5 | 1,45 | 16 | 50 | 4 | 9,86 |
| HA1131-Z2-15406020        | 1,5 | 0,75 | 1,5 | 1,45 | 20 | 60 | 4 | 9,86 |
| HA1131-Z2-15406025        | 1,5 | 0,75 | 1,5 | 1,45 | 25 | 60 | 4 | 9,86 |
| HA1131-Z2-20405016        | 2,0 | 1,00 | 2,0 | 1,95 | 16 | 50 | 4 | 9,86 |
| HA1131-Z2-20405020        | 2,0 | 1,00 | 2,0 | 1,95 | 20 | 50 | 4 | 9,86 |
| HA1131-Z2-20406525        | 2,0 | 1,00 | 2,0 | 1,95 | 25 | 65 | 4 | 9,86 |
| HA1131-Z2-20407030        | 2,0 | 1,00 | 2,0 | 1,95 | 30 | 70 | 4 | 9,86 |
| HA1131-Z2-20407535        | 2,0 | 1,00 | 2,0 | 1,95 | 35 | 75 | 4 | 9,86 |
| HA1131-Z2-20408040        | 2,0 | 1,00 | 2,0 | 1,95 | 40 | 80 | 4 | 9,86 |
| HA1131-Z2-25405016        | 2,5 | 1,25 | 2,5 | 2,45 | 16 | 50 | 4 | 9,86 |
| HA1131-Z2-25406025        | 2,5 | 1,25 | 2,5 | 2,45 | 25 | 60 | 4 | 9,86 |
| HA1131-Z2-25407030        | 2,5 | 1,25 | 2,5 | 2,45 | 30 | 70 | 4 | 9,86 |
| HA1131-Z2-25407035        | 2,5 | 1,25 | 2,5 | 2,45 | 35 | 70 | 4 | 9,86 |
| HA1131-Z2-30606016        | 3,0 | 1,50 | 3,0 | 2,95 | 16 | 60 | 6 | 9,86 |
| HA1131-Z2-30606020        | 3,0 | 1,50 | 3,0 | 2,95 | 20 | 60 | 6 | 9,86 |
| HA1131-Z2-30607030        | 3,0 | 1,50 | 3,0 | 2,95 | 30 | 70 | 6 | 9,86 |
| HA1131-Z2-30607535        | 3,0 | 1,50 | 3,0 | 2,95 | 35 | 75 | 6 | 9,86 |
| HA1131-Z2-30608040        | 3,0 | 1,50 | 3,0 | 2,95 | 40 | 80 | 6 | 9,86 |
| HA1131-Z2-40606020        | 4,0 | 2,00 | 4,0 | 3,95 | 20 | 60 | 6 | 9,86 |
| HA1131-Z2-40607030        | 4,0 | 2,00 | 4,0 | 3,95 | 30 | 70 | 6 | 9,86 |
| HA1131-Z2-40608040        | 4,0 | 2,00 | 4,0 | 3,95 | 40 | 80 | 6 | 9,86 |
| HA1131-Z2-40609045        | 4,0 | 2,00 | 4,0 | 3,95 | 45 | 90 | 6 | 9,86 |
| HA1131-Z2-50607530        | 5,0 | 2,50 | 5,0 | 4,95 | 30 | 75 | 6 | 9,86 |
| HA1131-Z2-50609045        | 5,0 | 2,50 | 5,0 | 4,95 | 45 | 90 | 6 | 9,86 |

## VHM Mikro-Schaftfräser 2-schneidig

utes



| Bestellnummer / Order No. | D   | Lc  | d2   | L1 | L  | d | EUR  |
|---------------------------|-----|-----|------|----|----|---|------|
| HA1150-Z2-05404006        | 0,5 | 0,5 | 0,45 | 6  | 40 | 4 | 9,86 |
| HA1150-Z2-05404010        | 0,5 | 0,5 | 0,45 | 10 | 40 | 4 | 9,86 |
| HA1150-Z2-05404014        | 0,5 | 0,5 | 0,45 | 14 | 40 | 4 | 9,86 |
| HA1150-Z2-08404008        | 0,8 | 0,8 | 0,75 | 8  | 40 | 4 | 9,86 |
| HA1150-Z2-08404010        | 0,8 | 0,8 | 0,75 | 10 | 40 | 4 | 9,86 |
| HA1150-Z2-08404514        | 0,8 | 0,8 | 0,75 | 14 | 45 | 4 | 9,86 |
| HA1150-Z2-10404510        | 1,0 | 1,0 | 0,95 | 10 | 45 | 4 | 9,86 |
| HA1150-Z2-10405020        | 1,0 | 1,0 | 0,95 | 20 | 50 | 4 | 9,86 |
| HA1150-Z2-10406025        | 1,0 | 1,0 | 0,95 | 25 | 60 | 4 | 9,86 |
| HA1150-Z2-10407030        | 1,0 | 1,0 | 0,95 | 30 | 70 | 4 | 9,86 |
| HA1150-Z2-12404510        | 1,2 | 1,2 | 1,15 | 10 | 45 | 4 | 9,86 |
| HA1150-Z2-12405020        | 1,2 | 1,2 | 1,15 | 20 | 50 | 4 | 9,86 |
| HA1150-Z2-12406025        | 1,2 | 1,2 | 1,15 | 25 | 60 | 4 | 9,86 |
| HA1150-Z2-12407030        | 1,2 | 1,2 | 1,15 | 30 | 70 | 4 | 9,86 |
| HA1150-Z2-15404510        | 1,5 | 1,5 | 1,45 | 10 | 45 | 4 | 9,86 |
| HA1150-Z2-15405016        | 1,5 | 1,5 | 1,45 | 16 | 50 | 4 | 9,86 |
| HA1150-Z2-15405020        | 1,5 | 1,5 | 1,45 | 20 | 50 | 4 | 9,86 |
| HA1150-Z2-15406025        | 1,5 | 1,5 | 1,45 | 25 | 60 | 4 | 9,86 |
| HA1150-Z2-15407030        | 1,5 | 1,5 | 1,95 | 30 | 70 | 4 | 9,86 |
| HA1150-Z2-20404516        | 2,0 | 2,0 | 1,95 | 16 | 45 | 4 | 9,86 |
| HA1150-Z2-20405020        | 2,0 | 2,0 | 1,95 | 20 | 50 | 4 | 9,86 |
| HA1150-Z2-20406025        | 2,0 | 2,0 | 1,95 | 25 | 60 | 4 | 9,86 |
| HA1150-Z2-20407035        | 2,0 | 2,0 | 1,95 | 35 | 70 | 4 | 9,86 |
| HA1150-Z2-20408045        | 2,0 | 2,0 | 1,95 | 45 | 80 | 4 | 9,86 |
| HA1150-Z2-25405016        | 2,5 | 2,5 | 2,45 | 16 | 50 | 4 | 9,86 |
| HA1150-Z2-25406025        | 2,5 | 2,5 | 2,45 | 25 | 60 | 4 | 9,86 |
| HA1150-Z2-25407030        | 2,5 | 2,5 | 2,45 | 30 | 70 | 4 | 9,86 |
| HA1150-Z2-25407035        | 2,5 | 2,5 | 2,45 | 35 | 70 | 4 | 9,86 |
| HA1150-Z2-25408040        | 2,5 | 2,5 | 2,45 | 40 | 80 | 4 | 9,86 |
| HA1150-Z2-25409050        | 2,5 | 2,5 | 2,45 | 50 | 90 | 4 | 9,86 |
| HA1150-Z2-30605516        | 3,0 | 3,0 | 2,95 | 16 | 55 | 6 | 9,86 |
| HA1150-Z2-30606525        | 3,0 | 3,0 | 2,95 | 25 | 65 | 6 | 9,86 |
| HA1150-Z2-30607030        | 3,0 | 3,0 | 2,95 | 30 | 70 | 6 | 9,86 |
| HA1150-Z2-30607535        | 3,0 | 3,0 | 2,95 | 35 | 75 | 6 | 9,86 |
| HA1150-Z2-30608040        | 3,0 | 3,0 | 2,95 | 40 | 80 | 6 | 9,86 |
| HA1150-Z2-30609045        | 3,0 | 3,0 | 2,95 | 45 | 90 | 6 | 9,86 |
| HA1150-Z2-40606020        | 4,0 | 4,0 | 3,95 | 20 | 60 | 6 | 9,86 |
| HA1150-Z2-40608040        | 4,0 | 4,0 | 3,95 | 40 | 80 | 6 | 9,86 |
| HA1150-Z2-40609045        | 4,0 | 4,0 | 3,95 | 45 | 90 | 6 | 9,86 |
| HA1150-Z2-50606525        | 5,0 | 5,0 | 3,95 | 25 | 65 | 6 | 9,86 |
| HA1150-Z2-50607030        | 5,0 | 5,0 | 4,95 | 30 | 70 | 6 | 9,86 |
| HA1150-Z2-50608040        | 5,0 | 5,0 | 4,95 | 40 | 80 | 6 | 9,86 |