

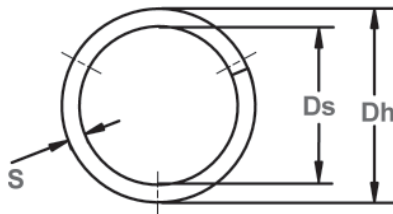
# Single Turn, Metric

Ideal for short deflection applications with low to medium forces. Offered in a number of waves and material thicknesses. Designed for a wide range of bore and rod diameters.

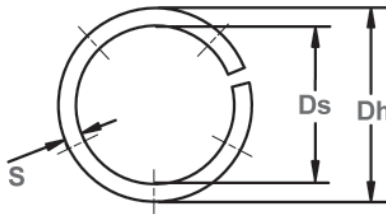
# MST Wave Springs



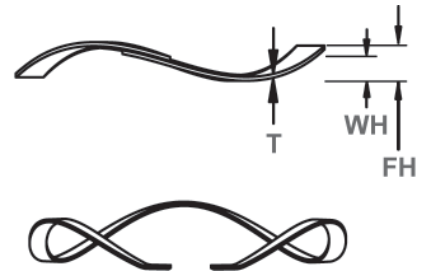
## Wave Spring Measurements



Overlap: Sizes -35 to -374  
3 Waves



Gap: Sizes -394 & up  
\*Multiple Waves  
(see table)



Optional End Design  
(Patent Pending)

| WAVE SPRING NO. | CLINGS IN HOUSING DIAMETER | SHAFT DIAMETER CLEARANCE | LOAD (N) | WORK HEIGHT | FREE HEIGHT Ref. | NO. OF WAVES* | THICKNESS | SECTION | SPRING RATE Ref. N/mm |
|-----------------|----------------------------|--------------------------|----------|-------------|------------------|---------------|-----------|---------|-----------------------|
|                 | Dh                         | Ds                       |          | WH          | FH               |               | T         | S       |                       |
| MST-35          | 9.0                        | 6.86                     | 25.8     | 1.00        | 1.50             | 3             | 0.20      | 0.81    | 52                    |
| MST-39          | 10.0                       | 7.49                     | 27.6     | 1.00        | 1.57             | 3             | 0.20      | 1.02    | 48                    |
| MST-43          | 11.0                       | 8.46                     | 29.4     | 1.00        | 1.83             | 3             | 0.20      | 1.02    | 35                    |
| MST-47          | 12.0                       | 9.17                     | 33.4     | 1.00        | 1.57             | 3             | 0.25      | 1.17    | 59                    |
| MST-51          | 13.0                       | 9.53                     | 37.8     | 1.00        | 1.57             | 3             | 0.25      | 1.47    | 66                    |
| MST-63          | 16.0                       | 11.28                    | 44.5     | 1.57        | 2.29             | 3             | 0.25      | 1.98    | 65                    |
| MST-75          | 19.0                       | 14.28                    | 53.4     | 1.57        | 3.05             | 3             | 0.25      | 1.98    | 35                    |
| MST-87          | 22.0                       | 16.46                    | 62.3     | 1.57        | 2.79             | 3             | 0.30      | 2.39    | 48                    |
| MST-95          | 24.0                       | 18.46                    | 66.7     | 1.57        | 3.56             | 3             | 0.30      | 2.39    | 35                    |
| MST-102         | 26.0                       | 18.22                    | 71.2     | 1.98        | 2.54             | 3             | 0.41      | 3.38    | 111                   |
| MST-110         | 28.0                       | 20.22                    | 75.6     | 1.98        | 2.79             | 3             | 0.41      | 3.38    | 85                    |
| MST-118         | 30.0                       | 22.22                    | 84.5     | 1.98        | 3.30             | 3             | 0.41      | 3.38    | 66                    |
| MST-126         | 32.0                       | 24.22                    | 89.0     | 1.98        | 3.81             | 3             | 0.41      | 3.38    | 52                    |
| MST-138         | 35.0                       | 27.22                    | 97.9     | 1.98        | 4.57             | 3             | 0.41      | 3.38    | 38                    |
| MST-146         | 37.0                       | 28.72                    | 102.3    | 1.98        | 3.81             | 3             | 0.46      | 3.63    | 58                    |
| MST-158         | 40.0                       | 31.72                    | 111.2    | 1.98        | 5.08             | 3             | 0.46      | 3.63    | 37                    |
| MST-165         | 42.0                       | 33.72                    | 115.7    | 1.98        | 3.05             | 4             | 0.46      | 3.63    | 99                    |
| MST-185         | 47.0                       | 38.72                    | 129.0    | 1.98        | 3.81             | 4             | 0.46      | 3.63    | 68                    |
| MST-205         | 52.0                       | 43.11                    | 142.4    | 2.36        | 3.56             | 4             | 0.61      | 3.81    | 121                   |
| MST-217         | 55.0                       | 46.11                    | 151.3    | 2.36        | 3.81             | 4             | 0.61      | 3.81    | 100                   |
| MST-244         | 62.0                       | 51.69                    | 169.1    | 2.36        | 4.32             | 4             | 0.61      | 4.52    | 85                    |
| MST-268         | 68.0                       | 57.17                    | 186.9    | 2.77        | 4.32             | 4             | 0.76      | 4.78    | 131                   |
| MST-276         | 70.0                       | 59.17                    | 191.3    | 2.77        | 4.32             | 4             | 0.76      | 4.78    | 119                   |
| MST-284         | 72.0                       | 61.17                    | 195.8    | 2.77        | 4.57             | 4             | 0.76      | 4.78    | 108                   |
| MST-295         | 75.0                       | 64.17                    | 204.7    | 2.77        | 5.08             | 4             | 0.76      | 4.78    | 94                    |
| MST-315         | 80.0                       | 68.66                    | 218.0    | 2.77        | 5.59             | 4             | 0.76      | 4.78    | 76                    |
| MST-335         | 85.0                       | 71.38                    | 231.4    | 2.77        | 5.59             | 4             | 0.76      | 5.92    | 83                    |
| MST-354         | 90.0                       | 76.38                    | 249.2    | 2.77        | 6.35             | 4             | 0.76      | 5.92    | 68                    |
| MST-374         | 95.0                       | 81.38                    | 262.5    | 2.77        | 7.37             | 4             | 0.76      | 5.92    | 57                    |
| MST-394         | 100.0                      | 86.38                    | 275.9    | 2.77        | 4.57             | 5             | 0.76      | 5.92    | 157                   |
| MST-413         | 105.0                      | 91.38                    | 289.2    | 2.77        | 5.08             | 5             | 0.76      | 5.92    | 134                   |
| MST-433         | 110.0                      | 96.38                    | 302.6    | 2.77        | 5.33             | 5             | 0.76      | 5.92    | 115                   |
| MST-453         | 115.0                      | 101.38                   | 315.9    | 3.18        | 6.35             | 5             | 0.76      | 5.92    | 99                    |
| MST-472         | 120.0                      | 106.38                   | 329.3    | 3.18        | 7.11             | 5             | 0.76      | 5.92    | 86                    |
| MST-492         | 125.0                      | 111.38                   | 342.6    | 3.18        | 7.62             | 5             | 0.76      | 5.92    | 76                    |
| MST-512         | 130.0                      | 116.38                   | 356.0    | 3.18        | 8.64             | 5             | 0.76      | 5.92    | 67                    |
| MST-532         | 135.0                      | 121.38                   | 369.3    | 3.18        | 9.40             | 5             | 0.76      | 5.92    | 59                    |
| MST-551         | 140.0                      | 126.38                   | 382.7    | 3.18        | 6.86             | 6             | 0.76      | 5.92    | 108                   |
| MST-571         | 145.0                      | 131.38                   | 396.0    | 3.18        | 7.37             | 6             | 0.76      | 5.92    | 97                    |
| MST-591         | 150.0                      | 136.38                   | 404.9    | 3.18        | 7.87             | 6             | 0.76      | 5.92    | 87                    |
| MST-630         | 160.0                      | 146.38                   | 440.5    | 3.18        | 9.40             | 6             | 0.76      | 5.92    | 71                    |
| MST-650         | 165.0                      | 151.38                   | 453.9    | 3.18        | 10.41            | 6             | 0.76      | 5.92    | 64                    |
| MST-669         | 170.0                      | 156.38                   | 467.2    | 3.18        | 11.18            | 6             | 0.76      | 5.92    | 58                    |

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.



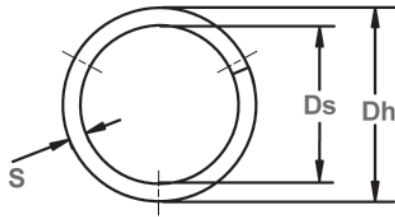


# MST Wave Springs

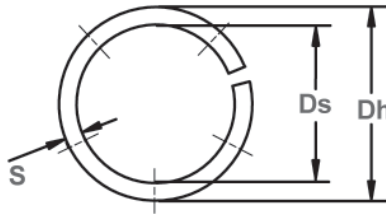
## Single Turn, Metric

Ideal for short deflection applications with low to medium forces. Offered in a number of waves and material thicknesses. Designed for a wide range of bore and rod diameters.

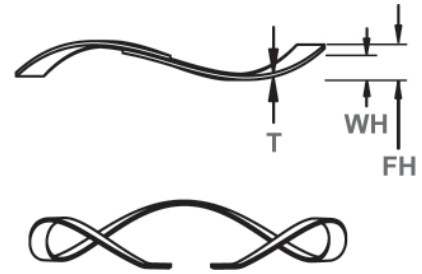
### Wave Spring Measurements



Overlap: Sizes -35 to -374  
3 Waves



Gap: Sizes -394 & up  
\*Multiple Waves  
(see table)



Optional End Design  
(Patent Pending)

| WAVE SPRING NO. | CLINGS IN HOUSING DIAMETER | SHAFT DIAMETER CLEARANCE | LOAD (N) | WORK HEIGHT | FREE HEIGHT Ref. | NO. OF WAVES* | THICKNESS | SECTION | SPRING RATE Ref. N/mm |
|-----------------|----------------------------|--------------------------|----------|-------------|------------------|---------------|-----------|---------|-----------------------|
|                 | Dh                         | Ds                       |          | WH          | FH               |               | T         | S       |                       |
| MST-689         | 175.0                      | 154.16                   | 480.6    | 3.96        | 8.13             | 6             | 0.81      | 9.53    | 116                   |
| MST-709         | 180.0                      | 159.16                   | 493.9    | 3.96        | 8.64             | 6             | 0.81      | 9.53    | 105                   |
| MST-728         | 185.0                      | 164.16                   | 507.3    | 3.96        | 9.14             | 6             | 0.81      | 9.53    | 97                    |
| MST-748         | 190.0                      | 169.16                   | 520.6    | 3.96        | 9.91             | 6             | 0.81      | 9.53    | 88                    |
| MST-787         | 200.0                      | 179.16                   | 547.3    | 3.96        | 7.11             | 7             | 0.81      | 9.53    | 174                   |
| MST-807         | 205.0                      | 184.16                   | 560.7    | 3.96        | 7.37             | 7             | 0.81      | 9.53    | 161                   |
| MST-827         | 210.0                      | 189.16                   | 578.5    | 3.96        | 7.87             | 7             | 0.81      | 9.53    | 149                   |
| MST-847         | 215.0                      | 194.16                   | 591.8    | 3.96        | 8.38             | 7             | 0.81      | 9.53    | 138                   |
| MST-866         | 220.0                      | 199.16                   | 605.2    | 3.96        | 8.64             | 7             | 0.81      | 9.53    | 128                   |
| MST-886         | 225.0                      | 204.16                   | 618.5    | 3.96        | 7.11             | 8             | 0.81      | 9.53    | 203                   |
| MST-906         | 230.0                      | 209.16                   | 631.9    | 3.96        | 6.10             | 9             | 0.81      | 9.53    | 303                   |
| MST-925         | 235.0                      | 214.16                   | 645.2    | 3.96        | 6.35             | 9             | 0.81      | 9.53    | 283                   |
| MST-945         | 240.0                      | 219.16                   | 658.6    | 3.96        | 6.35             | 9             | 0.81      | 9.53    | 265                   |
| MST-984         | 250.0                      | 229.16                   | 685.3    | 3.96        | 6.86             | 9             | 0.81      | 9.53    | 232                   |
| MST-1024        | 260.0                      | 239.16                   | 712.0    | 3.96        | 7.37             | 9             | 0.81      | 9.53    | 205                   |
| MST-1043        | 265.0                      | 244.16                   | 725.3    | 3.96        | 7.62             | 9             | 0.81      | 9.53    | 193                   |
| MST-1063        | 270.0                      | 249.16                   | 743.1    | 3.96        | 8.13             | 9             | 0.81      | 9.53    | 182                   |
| MST-1102        | 280.0                      | 259.16                   | 769.8    | 3.96        | 8.64             | 9             | 0.81      | 9.53    | 162                   |
| MST-1142        | 290.0                      | 269.16                   | 796.5    | 3.96        | 9.40             | 9             | 0.81      | 9.53    | 144                   |
| MST-1181        | 300.0                      | 279.16                   | 823.2    | 3.96        | 10.41            | 9             | 0.81      | 9.53    | 129                   |
| MST-1221        | 310.0                      | 289.16                   | 849.9    | 3.96        | 7.11             | 9             | 1.07      | 9.53    | 264                   |
| MST-1260        | 320.0                      | 299.16                   | 876.6    | 3.96        | 7.62             | 9             | 1.07      | 9.53    | 239                   |
| MST-1339        | 340.0                      | 319.16                   | 934.5    | 3.96        | 8.64             | 9             | 1.07      | 9.53    | 198                   |
| MST-1378        | 350.0                      | 329.16                   | 961.1    | 3.96        | 9.40             | 9             | 1.07      | 9.53    | 180                   |
| MST-1417        | 360.0                      | 339.16                   | 987.9    | 3.96        | 7.62             | 10            | 1.07      | 9.53    | 271                   |
| MST-1457        | 370.0                      | 349.16                   | 1014.6   | 3.96        | 8.13             | 10            | 1.07      | 9.53    | 249                   |
| MST-1496        | 380.0                      | 359.16                   | 1041.3   | 3.96        | 8.64             | 10            | 1.07      | 9.53    | 229                   |
| MST-1535        | 390.0                      | 369.16                   | 1072.4   | 3.96        | 9.14             | 10            | 1.07      | 9.53    | 211                   |
| MST-1575        | 400.0                      | 379.16                   | 1099.1   | 3.96        | 9.65             | 10            | 1.07      | 9.53    | 196                   |
| MST-1614        | 410.0                      | 382.82                   | 1125.8   | 3.96        | 8.38             | 10            | 1.07      | 12.70   | 251                   |
| MST-1654        | 420.0                      | 392.82                   | 1152.5   | 3.96        | 8.89             | 10            | 1.07      | 12.70   | 233                   |
| MST-1693        | 430.0                      | 402.82                   | 1179.2   | 3.96        | 7.62             | 11            | 1.07      | 12.70   | 317                   |
| MST-1732        | 440.0                      | 412.82                   | 1205.9   | 3.96        | 8.13             | 11            | 1.07      | 12.70   | 295                   |
| MST-1811        | 460.0                      | 432.82                   | 1263.7   | 3.96        | 8.89             | 11            | 1.07      | 12.70   | 256                   |
| MST-1890        | 480.0                      | 452.82                   | 1317.1   | 3.96        | 8.13             | 12            | 1.07      | 12.70   | 318                   |
| MST-1969        | 500.0                      | 472.82                   | 1370.5   | 3.96        | 8.89             | 12            | 1.07      | 12.70   | 280                   |
| MST-2126        | 540.0                      | 512.82                   | 1481.8   | 3.96        | 8.89             | 13            | 1.07      | 12.70   | 303                   |
| MST-2284        | 580.0                      | 552.82                   | 1593.0   | 3.96        | 8.89             | 14            | 1.07      | 12.70   | 327                   |

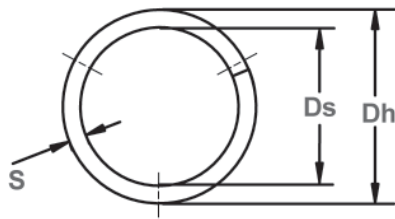
ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.

# Bearing Interchange Chart

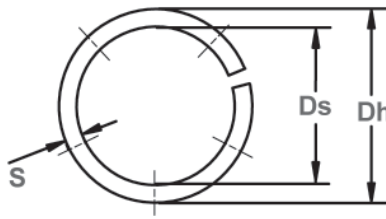
This chart pairs metric single turn wave springs with the appropriate standard bearing number.



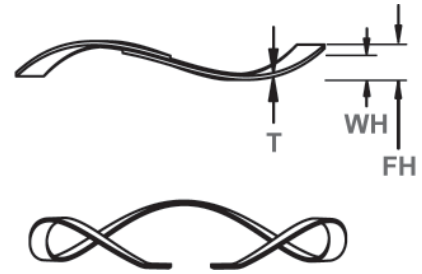
## Wave Spring Measurements



Overlap: Sizes -35 to -374  
3 Waves



Gap: Sizes -394 & up  
\*Multiple Waves  
(see table)



Optional End Design  
(Patent Pending)

| WAVE SPRING NO. | BEARING O.D. (mm) | BEARING NUMBERS |                 |             |        |       |        |       |
|-----------------|-------------------|-----------------|-----------------|-------------|--------|-------|--------|-------|
|                 |                   | EXTRA SMALL     | EXTREMELY LIGHT | EXTRA LIGHT | NARROW | LIGHT | MEDIUM | HEAVY |
| MST-35          | 9                 | 03,18/4         |                 |             |        |       |        |       |
| MST-39          | 10                | 23              |                 |             |        |       |        |       |
| MST-43          | 11                | 18/5,19,4       |                 |             |        |       |        |       |
| MST-47          | 12                | 4               |                 |             |        |       |        |       |
| MST-51          | 13                | 18/6,19/5,24,33 |                 |             |        |       |        |       |
| MST-63          | 16                | 34              | -               | -           | -      | -     | -      | -     |
| MST-75          | 19                | 35,36           | -               | -           | -      | -     | -      | -     |
| MST-87          | 22                | 37,38           | 00              | -           | -      | -     | -      | -     |
| MST-95          | 24                | 38KV            | 01              | -           | -      | -     | -      | -     |
| MST-102         | 26                | 39              | -               | 100         | -      | -     | -      | -     |
| MST-110         | 28                | -               | 02              | 101         | -      | -     | -      | -     |
| MST-118         | 30                | -               | 03              | -           | 200    | -     | -      | -     |
| MST-126         | 32                | -               | -               | 102         | 02     | 201   | -      | -     |
| MST-138         | 35                | -               | -               | 103         | -      | 202   | 300    | -     |
| MST-146         | 37                | -               | 04              | -           | 03     | -     | 301    | -     |
| MST-158         | 40                | -               | -               | -           | -      | 203   | -      | -     |
| MST-165         | 42                | -               | 05              | 104         | 04     | -     | 302    | -     |
| MST-185         | 47                | -               | 06              | 105         | -      | 204   | 303    | -     |
| MST-205         | 52                | -               | -               | -           | 05     | 205   | 304    | -     |
| MST-217         | 55                | -               | 07              | 106         | -      | -     | -      | -     |
| MST-244         | 62                | -               | 08              | 107         | 06     | 206   | 305    | 403   |
| MST-268         | 68                | -               | 09              | 108         | -      | -     | -      | -     |
| MST-276         | 70                | -               | -               | -           | 07     | -     | -      | -     |
| MST-284         | 72                | -               | 10              | -           | -      | 207   | 306    | 404   |
| MST-295         | 75                | -               | -               | 109         | -      | -     | -      | -     |
| MST-315         | 80                | -               | 11              | 110         | 08     | 208   | 307    | 405   |
| MST-335         | 85                | -               | 12              | -           | 09     | 209   | -      | -     |
| MST-354         | 90                | -               | 13              | 111         | 10     | 210   | 308    | 406   |
| MST-374         | 95                | -               | -               | 112         | -      | -     | -      | -     |
| MST-394         | 100               | -               | 14              | 113         | 11     | 211   | 309    | 407   |
| MST-413         | 105               | -               | 15              | -           | 12     | -     | -      | -     |
| MST-433         | 110               | -               | 16              | 114         | -      | 212   | 310    | 408   |
| MST-453         | 115               | -               | -               | 115         | 13     | -     | -      | -     |
| MST-472         | 120               | -               | 17              | -           | 14     | 213   | 311    | 409   |
| MST-492         | 125               | -               | 18              | 116         | -      | 214   | -      | -     |
| MST-512         | 130               | -               | 19              | 117         | 15     | 215   | 312    | 410   |
| MST-532         | 135               | -               | -               | -           | 16     | -     | -      | -     |
| MST-551         | 140               | -               | 20              | 118         | -      | 216   | 313    | 411   |
| MST-571         | 145               | -               | 21              | 119         | 17     | -     | -      | -     |
| MST-591         | 150               | -               | 22              | 120         | 18     | 217   | 314    | 412   |
| MST-630         | 160               | -               | -               | 121         | 19     | 218   | 315    | 413   |
| MST-650         | 165               | -               | 24              | -           | 20     | -     | -      | -     |
| MST-669         | 170               | -               | -               | 122         | -      | 219   | 316    | -     |

| WAVE SPRING NO. | BEARING O.D. (mm) | BEARING NUMBERS |                 |             |        |       |        |       |
|-----------------|-------------------|-----------------|-----------------|-------------|--------|-------|--------|-------|
|                 |                   | EXTRA SMALL     | EXTREMELY LIGHT | EXTRA LIGHT | NARROW | LIGHT | MEDIUM | HEAVY |
| MST-689         | 175               | -               | -               | -           | 22     | -     | -      | -     |
| MST-709         | 180               | -               | 26              | 124         | 21     | 220   | 317    | 414   |
| MST-728         | 185               | -               | -               | -           | 22     | -     | -      | -     |
| MST-748         | 190               | -               | 28              | -           | 24     | 221   | 318    | 415   |
| MST-787         | 200               | -               | -               | 126         | -      | 222   | 319    | 416   |
| MST-807         | 205               | -               | -               | -           | 26     | -     | -      | -     |
| MST-827         | 210               | -               | 30              | 128         | -      | -     | -      | 417   |
| MST-847         | 215               | -               | -               | -           | -      | 224   | 320    | -     |
| MST-866         | 220               | -               | 32              | -           | 28     | -     | -      | -     |
| MST-886         | 225               | -               | -               | 130         | -      | -     | 321    | 418   |
| MST-906         | 230               | -               | 34              | -           | -      | 226   | -      | -     |
| MST-925         | 235               | -               | -               | -           | 30     | -     | -      | -     |
| MST-945         | 240               | -               | -               | 132         | -      | -     | 322    | -     |
| MST-984         | 250               | -               | 36              | -           | 32     | 228   | -      | 419   |
| MST-1024        | 260               | -               | 38              | 134         | -      | -     | 324    | -     |
| MST-1043        | 265               | -               | -               | -           | 34     | -     | -      | 420   |
| MST-1063        | 270               | -               | -               | -           | -      | 230   | -      | -     |
| MST-1102        | 280               | -               | 40              | 136         | 36     | -     | 326    | -     |
| MST-1142        | 290               | -               | -               | 138         | -      | 232   | -      | 421   |
| MST-1181        | 300               | -               | -               | -           | 38     | -     | 328    | -     |
| MST-1221        | 310               | -               | -               | 140         | -      | 234   | -      | -     |
| MST-1260        | 320               | -               | -               | -           | 40     | 236   | 330    | 422   |
| MST-1339        | 340               | -               | -               | 144         | 42     | 238   | 332    | -     |
| MST-1378        | 350               | -               | -               | -           | 44     | -     | -      | -     |
| MST-1417        | 360               | -               | -               | 148         | -      | 240   | 334    | -     |
| MST-1457        | 370               | -               | -               | -           | 46     | -     | -      | -     |
| MST-1496        | 380               | -               | -               | -           | -      | -     | 336    | -     |
| MST-1535        | 390               | -               | -               | -           | 48     | -     | -      | -     |
| MST-1575        | 400               | -               | -               | 152         | -      | 244   | 338    | -     |
| MST-1614        | 410               | -               | -               | -           | 50     | -     | -      | -     |
| MST-1654        | 420               | -               | -               | 156         | -      | -     | 340    | -     |
| MST-1693        | 430               | -               | -               | -           | 52     | -     | -      | -     |
| MST-1732        | 440               | -               | -               | -           | -      | 248   | 342    | -     |
| MST-1811        | 460               | -               | -               | 160         | 56     | -     | 344    | -     |
| MST-1890        | 480               | -               | -               | 164         | -      | 252   | -      | -     |
| MST-1969        | 500               | -               | -               | -           | 64     | 256   | 348    | -     |
| MST-2126        | 540               | -               | -               | -           | -      | 260   | 352    | -     |
| MST-2284        | 580               | -               | -               | -           | -      | 264   | 356    | -     |

