

TTA

查询"477TTA025M"供应商

# +85°C Standard Axial Lead Aluminum Electrolytic Capacitors



For all general purpose applications

## FEATURES

- High ripple current ratings
- Wide capacitance range:  
0.47  $\mu\text{F}$  to 22,000  $\mu\text{F}$
- Wide voltage range: 10 WVDC to 450 WVDC
- Solvent tolerant end seals standard ( $\leq 250$  WVDC)

## SPECIFICATIONS

| Capacitance Tolerance             |            | ±20% at 120Hz, 20°C                                                                      |                |      |      |                |                                                                                                 |       |                  |                             |     |                           |     |                |  |
|-----------------------------------|------------|------------------------------------------------------------------------------------------|----------------|------|------|----------------|-------------------------------------------------------------------------------------------------|-------|------------------|-----------------------------|-----|---------------------------|-----|----------------|--|
| Operating Temperature Range       |            | -40°C to +85°C                                                                           |                |      |      |                |                                                                                                 |       |                  |                             |     |                           |     | -25°C to +85°C |  |
| Dissipation Factor<br>120Hz, 20°C | WVDC       | 10                                                                                       | 16             | 25   | 35   | 50             | 63                                                                                              | 80    | 100              | 160                         | 250 | 350                       | 450 |                |  |
|                                   | tan δ      | .20                                                                                      | .16            | .14  | .12  | .10            | .09                                                                                             | .09   | .08              | .20                         | .20 | .20                       | .25 |                |  |
|                                   |            | Note: For above D.F. specifications, add .02 for every 1,000 μF above 1,000 μF           |                |      |      |                |                                                                                                 |       |                  |                             |     |                           |     |                |  |
| Impedance Ratio<br>(Max.) @120Hz  | WVDC       | 10                                                                                       | 16             | 25   | 35   | 50             | 63                                                                                              | 80    | 100              | 160                         | 250 | 350                       | 450 |                |  |
|                                   | -25°C/20°C | 3                                                                                        | 2              | 2    | 2    | 2              | 2                                                                                               | 2     | 2                | 3                           | 3   | 3                         | 5   |                |  |
|                                   | -40°C/20°C | 8                                                                                        | 6              | 4    | 3    | 3              | 3                                                                                               | 3     | 3                | 6                           | 6   | 6                         | -   |                |  |
| Leakage Current                   | WVDC       | ≤ 100 WVDC                                                                               |                |      |      |                |                                                                                                 |       |                  | 100 < WVDC ≤ 450            |     |                           |     |                |  |
|                                   | Time       | 1 minute                                                                                 |                |      |      | 2 minutes      |                                                                                                 |       |                  | 1 minute                    |     |                           |     |                |  |
|                                   |            | .03 CV or 4 μA                                                                           |                |      |      | .01 CV or 3 μA |                                                                                                 |       |                  | CV ≤ 1000<br>.04 CV + 100μA |     | CV> 1000<br>0.1 CV + 40μA |     |                |  |
|                                   |            | whichever is greater                                                                     |                |      |      |                |                                                                                                 |       |                  |                             |     |                           |     |                |  |
| Load Life                         |            | 2,000 hours at 85°C with rated WVDC                                                      |                |      |      |                |                                                                                                 |       |                  |                             |     |                           |     |                |  |
|                                   |            | Capacitance change<br>Dissipation factor<br>Leakage current                              |                |      |      |                | < 20% of initial measured value<br><200% of initial specified value<br><Initial specified value |       |                  |                             |     |                           |     |                |  |
| Shelf life                        |            | 1,000 hours at 85°C with no voltage applied.<br>Units will meet load life specification. |                |      |      |                |                                                                                                 |       |                  |                             |     |                           |     |                |  |
| Ripple Current Multipliers        |            | Capacitance (μF)                                                                         | Frequency (Hz) |      |      |                |                                                                                                 |       | Temperature (°C) |                             |     |                           |     |                |  |
|                                   |            |                                                                                          | 50             | 120  | 400  | 1k             | 10k                                                                                             | 50k + | +85              | +70                         | +60 | +30                       |     |                |  |
|                                   |            | C≤10                                                                                     | 0.8            | 1.0  | 1.3  | 1.45           | 1.65                                                                                            | 1.7   | 1.0              | 1.3                         | 1.5 | 1.8                       |     |                |  |
|                                   |            | 10<C≤100                                                                                 | 0.8            | 1.0  | 1.23 | 1.36           | 1.48                                                                                            | 1.53  | 1.0              | 1.3                         | 1.5 | 1.8                       |     |                |  |
|                                   |            | 100<C≤1000                                                                               | 0.8            | 1.0  | 1.16 | 1.25           | 1.35                                                                                            | 1.38  | 1.0              | 1.3                         | 1.5 | 1.8                       |     |                |  |
| C>1000                            | 0.8        | 1.0                                                                                      | 1.11           | 1.17 | 1.25 | 1.28           | 1.0                                                                                             | 1.3   | 1.5              | 1.8                         |     |                           |     |                |  |

## SPECIAL ORDER OPTIONS

(See Pages 33 thru 37)

- Special tolerances:  $\pm 10\%$  (K), -10% + 30% (Q)
- Tape and Reel
- Epoxy end seal
- Polyester sleeve

Aluminum Electrolytic



ILLINOIS CAPACITOR, INC.

3757 W. Touhy Ave., Lincolnwood, IL 60712 • (847) 675-1760 • Fax (847) 673-2850 • www.illcap.com

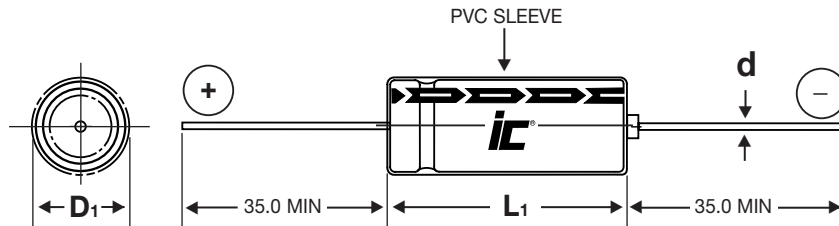
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## PHYSICAL DIMENSIONS

| WVDC<br>(SV)<br>(μF) | 10<br>(13) | 16<br>(20) | 25<br>(32) | 35<br>(44) | 50<br>(63) | 63<br>(79) | 80<br>(100) | 100<br>(125) | 160<br>(200) | 250<br>(300) | 350<br>(400) | 450<br>(500) |
|----------------------|------------|------------|------------|------------|------------|------------|-------------|--------------|--------------|--------------|--------------|--------------|
| 0.47                 |            |            |            |            |            |            |             | 5x12.5       |              |              |              |              |
| 1.0                  |            |            |            |            | 5x12.5     |            |             | 5x12.5       | 6.3x12.5     |              | 6.3x16       | 8x16         |
| 2.2                  |            |            |            |            | 5x12.5     |            |             | 5x12.5       | 6.3x16       | 8x16         | 8x16         | 10x20        |
| 3.3                  |            |            |            |            | 5x12.5     |            |             | 5x12.5       | 8x16         | 8x16         | 8x20         | 8x20         |
| 4.7                  |            |            |            |            | 5x12.5     |            |             | 5x12.5       | 8x16         | 8x20         | 8x20         | 10x25        |
| 10                   |            |            |            | 5x12.5     | 5x12.5     | 5x12.5     |             | 6.3x12.5     | 8x20         | 10x20        | 12.5x25      | 12.5x25      |
| 15                   |            |            |            |            | 5x12.5     |            |             |              |              |              |              |              |
| 22                   |            | 5x12.5     |            | 5x12.5     | 6.3x12.5   |            |             | 8x16         | 10x25        | 12.5x25      | 12.5x30      | 16x30        |
| 33                   |            |            | 5x12.5     |            | 6.3x16     |            |             | 8x16         | 12.5x25      | 12.5x30      | 16x31.5      | 16x40        |
| 47                   |            | 5x12.5     | 6.3x12.5   | 6.3x16     | 6.3x16     | 8x16       |             | 8x20         | 12.5x30      | 16x30        | 16x40        | 22x40        |
| 68                   |            | 6.3x16     |            | 8x16       |            | 8x20       |             |              |              |              |              |              |
| 100                  | 6.3x12.5   |            | 6.3x16     | 8x16       | 8x16       | 8x20       |             | 10x25        | 16x30        | 16x40        | 18x40        | 22x50        |
| 150                  |            |            | 8x16       | 8x20       | 10x16      | 10x20      |             | 12.5x25      |              |              |              |              |
| 220                  |            | 8x16       | 8x16       | 8x20       | 10x20      | 10x25      |             | 12.5x25      | 22x40        | 22x40        |              |              |
| 330                  |            | 8x16       | 8x20       |            | 10x25      | 12.5x25    |             | 12.5x30      |              |              |              |              |
| 470                  | 8x16       | 8x20       | 10x20      | 10x25      | 12.5x25    | 12.5x30    |             | 16x30        |              |              |              |              |
| 1,000                | 10x20      | 10x25      | 12.5x25    | 12.5x25    | 16x30      | 16x30      | 16x40       | 18x40        |              |              |              |              |
| 1,500                |            |            | 12.5x25    | 16x30      | 16x40      |            |             |              |              |              |              |              |
| 2,200                | 12.5x25    | 12.5x30    | 16x30      | 16x30      | 16x40      | 18x40      | 22x50       | 25x50        |              |              |              |              |
| 3,300                | 12.5x30    | 16x30      | 16x30      | 16x40      | 22x40      | 22x50      |             |              |              |              |              |              |
| 4,700                | 16x30      | 16x31.5    | 16x40      | 22x40      | 22x50      | 25x50      |             |              |              |              |              |              |
| 6,800                |            | 16x40      | 18x40      | 22x50      |            |            |             |              |              |              |              |              |
| 10,000               | 18x40      | 18x40      | 22x50      | 25x50      |            |            |             |              |              |              |              |              |
| 15,000               |            | 22x50      | 22x50      |            |            |            |             |              |              |              |              |              |
| 22,000               |            | 22x50      |            |            |            |            |             |              |              |              |              |              |

Convert to inches, divide by 25.4

DxL (mm)



LEAD INFORMATION VS. CASE DIAMETER

| D | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 18.0 | 22.0 | 25.0 |
|---|-----|-----|-----|------|------|------|------|------|------|
| d | 0.6 | 0.6 | 0.6 | 0.6  | 0.6  | 0.8  | 0.8  | 0.8  | 0.8  |
| B | 0.5 | 0.5 | 0.5 | 0.5  | 0.8  | 0.5  | 0.5  | 1.0  | 1.0  |

$D_1 = D + B$  Max.  
 $D \leq 18$  &  $V \leq 100$ ,  $L_1 = L + 1.0$  mm  
 $D \leq 18$  &  $V > 100$ ,  $L_1 = L + 2.0$  mm  
 $D > 18$   $L_1 = L + 2.0$  mm

NOTE: Case Vent is standard on all diameter  $\geq 8.0$  mm

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## STANDARD PART LISTING

| Capacitance<br>( $\mu$ F) | WVDC | ic <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>$\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +85°C | Dimension<br>D x L<br>(mm) |
|---------------------------|------|--------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------|
| 0.47                      | 100  | 474TTA100M                     | 705.474                                    | 12                                                    | 5x12.5                     |
| 1.0                       | 50   | 105TTA050M                     | 165.66                                     | 12                                                    | 5x12.5                     |
| 1.0                       | 100  | 105TTA100M                     | 331.573                                    | 21                                                    | 5x12.5                     |
| 1.0                       | 160  | 105TTA160M                     | 331.573                                    | 14                                                    | 6.3x12.5                   |
| 1.0                       | 350  | 105TTA350M                     | 331.573                                    | 15                                                    | 6.3x16                     |
| 1.0                       | 450  | 105TTA450M                     | 414.66                                     | 16                                                    | 8x16                       |
| 2.2                       | 50   | 225TTA050M                     | 75.58                                      | 24                                                    | 5x12.5                     |
| 2.2                       | 100  | 225TTA100M                     | 150.719                                    | 28                                                    | 5x12.5                     |
| 2.2                       | 160  | 225TTA160M                     | 150.715                                    | 23                                                    | 6.3x16                     |
| 2.2                       | 250  | 225TTA250M                     | 150.715                                    | 27                                                    | 8x16                       |
| 2.2                       | 350  | 225TTA350M                     | 150.715                                    | 27                                                    | 8x16                       |
| 2.2                       | 450  | 225TTA450M                     | 188.394                                    | 31                                                    | 10x20                      |
| 3.3                       | 50   | 335TTA050M                     | 50.238                                     | 30                                                    | 5x12.5                     |
| 3.3                       | 100  | 335TTA100M                     | 100.477                                    | 35                                                    | 5x12.5                     |
| 3.3                       | 160  | 335TTA160M                     | 100.477                                    | 33                                                    | 8x16                       |
| 3.3                       | 250  | 335TTA250M                     | 100.477                                    | 35                                                    | 8x16                       |
| 3.3                       | 350  | 335TTA350M                     | 100.477                                    | 37                                                    | 8x20                       |
| 3.3                       | 450  | 335TTA450M                     | 125.596                                    | 38                                                    | 8x20                       |
| 4.7                       | 50   | 475TTA050M                     | 35.274                                     | 36                                                    | 5x12.5                     |
| 4.7                       | 100  | 475TTA100M                     | 70.547                                     | 42                                                    | 5x12.5                     |
| 4.7                       | 160  | 475TTA160M                     | 70.547                                     | 39                                                    | 8x16                       |
| 4.7                       | 250  | 475TTA250M                     | 70.547                                     | 45                                                    | 8x20                       |
| 4.7                       | 350  | 475TTA350M                     | 70.547                                     | 50                                                    | 8x20                       |
| 4.7                       | 450  | 475TTA450M                     | 88.184                                     | 50                                                    | 10x25                      |
| 10                        | 35   | 106TTA035M                     | 19.894                                     | 47                                                    | 5x12.5                     |
| 10                        | 50   | 106TTA050M                     | 16.579                                     | 52                                                    | 5x12.5                     |
| 10                        | 63   | 106TTA063M                     | 16.579                                     | 56                                                    | 5x12.5                     |
| 10                        | 100  | 106TTA100M                     | 33.157                                     | 68                                                    | 6.3x12.5                   |
| 10                        | 160  | 106TTA160M                     | 33.157                                     | 63                                                    | 8x20                       |
| 10                        | 250  | 106TTA250M                     | 33.157                                     | 70                                                    | 10x20                      |
| 10                        | 350  | 106TTA350M                     | 33.157                                     | 90                                                    | 12.5x25                    |
| 10                        | 450  | 106TTA450M                     | 41.447                                     | 85                                                    | 12.5x25                    |
| 15                        | 50   | 156TTA050M                     | 11.052                                     | 70                                                    | 5x12.5                     |
| 22                        | 16   | 226TTA016M                     | 12.011                                     | 62                                                    | 5x12.5                     |
| 22                        | 35   | 226TTA035M                     | 9.043                                      | 72                                                    | 5x12.5                     |
| 22                        | 50   | 226TTA050M                     | 7.536                                      | 90                                                    | 6.3x12.5                   |
| 22                        | 100  | 226TTA100M                     | 15.072                                     | 145                                                   | 8x16                       |
| 22                        | 160  | 226TTA160M                     | 15.072                                     | 130                                                   | 10x25                      |

| Capacitance<br>( $\mu$ F) | WVDC | ic <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>$\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +85°C | Dimension<br>D x L<br>(mm) |
|---------------------------|------|--------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------|
| 22                        | 250  | 226TTA250M                     | 15.072                                     | 140                                                   | 12.5x25                    |
| 22                        | 350  | 226TTA350M                     | 15.072                                     | 150                                                   | 12.5x30                    |
| 22                        | 450  | 226TTA450M                     | 18.839                                     | 150                                                   | 16x30                      |
| 33                        | 25   | 336TTA025M                     | 7.536                                      | 85                                                    | 5x12.5                     |
| 33                        | 50   | 336TTA050M                     | 5.024                                      | 115                                                   | 6.3x16                     |
| 33                        | 100  | 336TTA100M                     | 10.048                                     | 150                                                   | 8x16                       |
| 33                        | 160  | 336TTA160M                     | 10.048                                     | 170                                                   | 12.5x25                    |
| 33                        | 250  | 336TTA250M                     | 10.048                                     | 190                                                   | 12.5x30                    |
| 33                        | 350  | 336TTA350M                     | 10.048                                     | 210                                                   | 16x31.5                    |
| 33                        | 450  | 336TTA450M                     | 12.56                                      | 230                                                   | 16x40                      |
| 47                        | 16   | 476TTA016M                     | 5.947                                      | 95                                                    | 5x12.5                     |
| 47                        | 25   | 476TTA025M                     | 5.291                                      | 125                                                   | 6.3x12.5                   |
| 47                        | 35   | 476TTA035M                     | 4.233                                      | 125                                                   | 6.3x16                     |
| 47                        | 50   | 476TTA050M                     | 3.527                                      | 145                                                   | 6.3x16                     |
| 47                        | 63   | 476TTA063M                     | 3.527                                      | 170                                                   | 8x16                       |
| 47                        | 100  | 476TTA100M                     | 7.055                                      | 192                                                   | 8x20                       |
| 47                        | 160  | 476TTA160M                     | 5.197                                      | 225                                                   | 12.5x30                    |
| 47                        | 250  | 476TTA250M                     | 7.055                                      | 255                                                   | 16x30                      |
| 47                        | 350  | 476TTA350M                     | 7.055                                      | 290                                                   | 16x40                      |
| 47                        | 450  | 476TTA450M                     | 8.818                                      | 300                                                   | 22x40                      |
| 68                        | 16   | 686TTA016M                     | 4.145                                      | 150                                                   | 6.3x16                     |
| 68                        | 35   | 686TTA035M                     | 2.926                                      | 200                                                   | 8x16                       |
| 68                        | 63   | 686TTA063M                     | 2.438                                      | 250                                                   | 8x20                       |
| 100                       | 10   | 107TTA010M                     | 3.316                                      | 150                                                   | 6.3x12.5                   |
| 100                       | 25   | 107TTA025M                     | 2.487                                      | 180                                                   | 6.3x16                     |
| 100                       | 35   | 107TTA035M                     | 1.989                                      | 210                                                   | 8x16                       |
| 100                       | 50   | 107TTA050M                     | 1.658                                      | 230                                                   | 8x16                       |
| 100                       | 63   | 107TTA063M                     | 1.658                                      | 265                                                   | 8x20                       |
| 100                       | 100  | 107TTA100M                     | 3.316                                      | 345                                                   | 10x25                      |
| 100                       | 160  | 107TTA160M                     | 3.316                                      | 420                                                   | 16x30                      |
| 100                       | 250  | 107TTA250M                     | 3.316                                      | 430                                                   | 16x40                      |
| 100                       | 350  | 107TTA350M                     | 3.316                                      | 400                                                   | 18x40                      |
| 100                       | 450  | 107TTA450M                     | 4.145                                      | 500                                                   | 22x50                      |
| 150                       | 25   | 157TTA025M                     | 1.658                                      | 260                                                   | 8x16                       |
| 150                       | 35   | 157TTA035M                     | 1.326                                      | 270                                                   | 8x20                       |
| 150                       | 50   | 157TTA050M                     | 1.105                                      | 285                                                   | 10x16                      |
| 150                       | 63   | 157TTA063M                     | 1.105                                      | 310                                                   | 10x20                      |
| 150                       | 100  | 157TTA100M                     | 2.211                                      | 515                                                   | 12.5x25                    |

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## STANDARD PART LISTING

| Capacitance<br>( $\mu$ F) | WVDC | ic <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>$\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +85°C | Dimension<br>D x L<br>(mm) |
|---------------------------|------|--------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------|
| 220                       | 16   | 227TTA016M                     | 1.281                                      | 260                                                   | 8x16                       |
| 220                       | 25   | 227TTA025M                     | 1.13                                       | 290                                                   | 8x16                       |
| 220                       | 35   | 227TTA035M                     | 0.904                                      | 345                                                   | 8x20                       |
| 220                       | 50   | 227TTA050M                     | 0.754                                      | 440                                                   | 10x20                      |
| 220                       | 63   | 227TTA063M                     | 0.754                                      | 490                                                   | 10x25                      |
| 220                       | 100  | 227TTA100M                     | 1.005                                      | 560                                                   | 12.5x25                    |
| 220                       | 160  | 227TTA160M                     | 1.507                                      | 660                                                   | 22x40                      |
| 220                       | 250  | 227TTA250M                     | 1.507                                      | 680                                                   | 22x40                      |
| 330                       | 16   | 337TTA016M                     | 0.854                                      | 320                                                   | 8x16                       |
| 330                       | 25   | 337TTA025M                     | 0.754                                      | 385                                                   | 8x20                       |
| 330                       | 50   | 337TTA050M                     | 0.502                                      | 565                                                   | 10x25                      |
| 330                       | 63   | 337TTA063M                     | 0.502                                      | 660                                                   | 12.5x25                    |
| 330                       | 100  | 337TTA100M                     | 1.005                                      | 770                                                   | 12.5x30                    |
| 470                       | 10   | 477TTA010M                     | 0.706                                      | 370                                                   | 8x16                       |
| 470                       | 16   | 477TTA016M                     | 0.5997                                     | 450                                                   | 8x20                       |
| 470                       | 25   | 477TTA025M                     | 0.529                                      | 560                                                   | 10x20                      |
| 470                       | 35   | 477TTA035M                     | 0.423                                      | 640                                                   | 10x25                      |
| 470                       | 50   | 477TTA050M                     | 0.353                                      | 740                                                   | 12.5x25                    |
| 470                       | 63   | 477TTA063M                     | 0.353                                      | 845                                                   | 12.5x30                    |
| 470                       | 100  | 477TTA100M                     | 0.706                                      | 970                                                   | 16x30                      |
| 1,000                     | 10   | 108TTA010M                     | 0.332                                      | 665                                                   | 10x20                      |
| 1,000                     | 16   | 108TTA016M                     | 0.282                                      | 785                                                   | 10x25                      |
| 1,000                     | 25   | 108TTA025M                     | 0.249                                      | 935                                                   | 12.5x25                    |
| 1,000                     | 35   | 108TTA035M                     | 0.199                                      | 1050                                                  | 12.5x25                    |
| 1,000                     | 50   | 108TTA050M                     | 0.166                                      | 1255                                                  | 16x30                      |
| 1,000                     | 63   | 108TTA063M                     | 0.166                                      | 1330                                                  | 16x30                      |
| 1,000                     | 80   | 108TTA080M                     | 0.149                                      | 1500                                                  | 16x40                      |
| 1,000                     | 100  | 108TTA100M                     | 0.332                                      | 1650                                                  | 18x40                      |
| 1,500                     | 25   | 158TTA025M                     | 0.188                                      | 1150                                                  | 12.5x25                    |
| 1,500                     | 35   | 158TTA035M                     | 0.155                                      | 1280                                                  | 16x30                      |
| 1,500                     | 50   | 158TTA050M                     | 0.133                                      | 1480                                                  | 16x40                      |

| Capacitance<br>( $\mu$ F) | WVDC | ic <sup>®</sup> PART<br>NUMBER | Maximum<br>ESR<br>$\Omega$<br>120Hz, +20°C | Maximum RMS<br>Ripple Current<br>(mA)<br>120Hz, +85°C | Dimension<br>D x L<br>(mm) |
|---------------------------|------|--------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------|
| 2,200                     | 10   | 228TTA010M                     | 0.181                                      | 1120                                                  | 12.5x25                    |
| 2,200                     | 16   | 228TTA016M                     | 0.158                                      | 1280                                                  | 12.5x30                    |
| 2,200                     | 25   | 228TTA025M                     | 0.143                                      | 1480                                                  | 16x30                      |
| 2,200                     | 35   | 228TTA035M                     | 0.121                                      | 1580                                                  | 16x30                      |
| 2,200                     | 50   | 228TTA050M                     | 0.106                                      | 1920                                                  | 16x40                      |
| 2,200                     | 63   | 228TTA063M                     | 0.098                                      | 2158                                                  | 18x40                      |
| 2,200                     | 80   | 228TTA080M                     | 0.106                                      | 2260                                                  | 22x50                      |
| 2,200                     | 100  | 228TTA100M                     | 0.181                                      | 2590                                                  | 25x50                      |
| 3,300                     | 10   | 338TTA010M                     | 0.131                                      | 1435                                                  | 12.5x30                    |
| 3,300                     | 16   | 338TTA016M                     | 0.116                                      | 1610                                                  | 16x30                      |
| 3,300                     | 25   | 338TTA025M                     | 0.106                                      | 1910                                                  | 16x30                      |
| 3,300                     | 35   | 338TTA035M                     | 0.09                                       | 2050                                                  | 16x40                      |
| 3,300                     | 50   | 338TTA050M                     | 0.08                                       | 2350                                                  | 22x40                      |
| 3,300                     | 63   | 338TTA063M                     | 0.08                                       | 2450                                                  | 22x50                      |
| 4,700                     | 10   | 478TTA010M                     | 0.099                                      | 1730                                                  | 16x30                      |
| 4,700                     | 16   | 478TTA016M                     | 0.088                                      | 2060                                                  | 16x31.5                    |
| 4,700                     | 25   | 478TTA025M                     | 0.081                                      | 2170                                                  | 16x40                      |
| 4,700                     | 35   | 478TTA035M                     | 0.064                                      | 2470                                                  | 22x40                      |
| 4,700                     | 50   | 478TTA050M                     | 0.064                                      | 2645                                                  | 22x50                      |
| 4,700                     | 63   | 478TTA063M                     | 0.064                                      | 3090                                                  | 25x50                      |
| 6,800                     | 16   | 688TTA016M                     | 0.071                                      | 2300                                                  | 16x40                      |
| 6,800                     | 25   | 688TTA025M                     | 0.066                                      | 2560                                                  | 18x40                      |
| 6,800                     | 35   | 688TTA035M                     | 0.059                                      | 2720                                                  | 22x50                      |
| 10,000                    | 10   | 109TTA010M                     | 0.033                                      | 2340                                                  | 18x40                      |
| 10,000                    | 16   | 109TTA016M                     | 0.058                                      | 2680                                                  | 18x40                      |
| 10,000                    | 25   | 109TTA025M                     | 0.063                                      | 2900                                                  | 22x50                      |
| 10,000                    | 35   | 109TTA035M                     | 0.05                                       | 3500                                                  | 25x50                      |
| 15,000                    | 16   | 159TTA016M                     | 0.05                                       | 2890                                                  | 22x50                      |
| 15,000                    | 25   | 159TTA025M                     | 0.048                                      | 3700                                                  | 22x50                      |
| 22,000                    | 16   | 229TTA016M                     | 0.045                                      | 3600                                                  | 22x50                      |