

XP BoomJet® Boomless Flat Spray Nozzles



Typical Applications:

- Boomless field spray applications.
- Roadside and right-of-way applications.
- End row spraying.
- Orchard spraying.
- De-icing applications.
- Forestry.

Features:

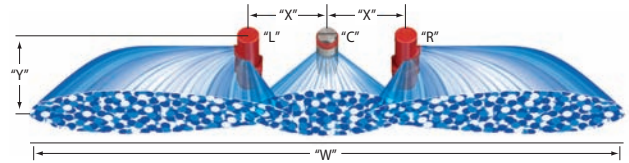
- Unique orifice geometry produces a wide spray pattern while maintaining superior distribution across entire width.
- Pre-orifice design minimizes drift.
- Extra wide spray pattern—up to 18.5' (5.5 meters)—using a single nozzle.
- Removable polymer pre-orifice.
- Acetal construction for excellent chemical resistance.

- Recommended spray pressure range: 20–60 PSI (1.5–4 bar).
- NPT or BSPT (male) threads for easy installation.
- Color-coding for easy capacity identification.

Mounting Note: Position tip horizontal to ground with spray pattern down and to the side.

How to order:

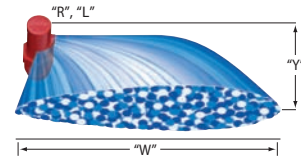
Specify part number. Example:
(B)1/2XP80L(R)-VP – VisiFlo® Polymer Left Boom Spray



| "R", "L" | CENTER NOZZLE "C" | bar | DROP SIZE | CAPACITY THREE NOZZLES IN l/min | I/ha FOR THREE NOZZLES | | | | | | | | | | | | | |
|----------------------------|-------------------|-----|-----------|---------------------------------|--------------------------|--------------|----------------------------|--------|---------|---------|---------|---------|--------------------|--------|---------|---------|---------|---------|
| | | | | | SPRAY WIDTH "W" (meters) | | NOZZLE SPACING "X" = 50 cm | | | | | | | | | | | |
| | | | | | 60 cm HEIGHT | 90 cm HEIGHT | HEIGHT "Y" = 60 cm | | | | | | HEIGHT "Y" = 90 cm | | | | | |
| | | | | | | | 4 km/h | 8 km/h | 12 km/h | 16 km/h | 24 km/h | 32 km/h | 4 km/h | 8 km/h | 12 km/h | 16 km/h | 24 km/h | 32 km/h |
| (B)1/4XP10R (B)1/4XP10L | 1/4TTJ08 | 1.5 | XC | 7.85 | 6.2 | 7.0 | 190 | 95.0 | 63.3 | 47.5 | 31.7 | 23.7 | 168 | 84.1 | 56.1 | 42.1 | 28.0 | 21.0 |
| | | 2.0 | XC | 9.04 | 7.0 | 7.8 | 194 | 96.9 | 64.6 | 48.4 | 32.3 | 24.2 | 174 | 86.9 | 57.9 | 43.5 | 29.0 | 21.7 |
| | | 3.0 | XC | 11.1 | 7.8 | 8.6 | 213 | 107 | 71.2 | 53.4 | 35.6 | 26.7 | 194 | 96.8 | 64.5 | 48.4 | 32.3 | 24.2 |
| | | 3.5 | XC | 11.9 | 8.6 | 9.2 | 208 | 104 | 69.2 | 51.9 | 34.6 | 25.9 | 194 | 97.0 | 64.7 | 48.5 | 32.3 | 24.3 |
| (B)1/4XP20R (B)1/4XP20L | 1/4TTJ08 | 1.5 | XC | 13.4 | 6.4 | 7.8 | 314 | 157 | 105 | 78.5 | 52.3 | 39.3 | 258 | 129 | 85.9 | 64.4 | 42.9 | 32.2 |
| | | 2.0 | XC | 15.4 | 8.0 | 8.4 | 289 | 144 | 96.3 | 72.2 | 48.1 | 36.1 | 275 | 138 | 91.7 | 68.8 | 45.8 | 34.4 |
| | | 3.0 | XC | 18.9 | 9.2 | 9.6 | 308 | 154 | 103 | 77.0 | 51.4 | 38.5 | 295 | 148 | 98.4 | 73.8 | 49.2 | 36.9 |
| | | 3.5 | XC | 20.5 | 9.8 | 10.2 | 314 | 157 | 105 | 78.4 | 52.3 | 39.2 | 301 | 151 | 100 | 75.4 | 50.2 | 37.7 |
| (B)1/4XP25R (B)1/4XP25L | 1/4TTJ10 | 1.5 | XC | 16.5 | 7.4 | 7.8 | 334 | 167 | 111 | 83.6 | 55.7 | 41.8 | 317 | 159 | 106 | 79.3 | 52.9 | 39.7 |
| | | 2.0 | XC | 19.1 | 8.4 | 9.2 | 341 | 171 | 114 | 85.3 | 56.8 | 42.6 | 311 | 156 | 104 | 77.9 | 51.9 | 38.9 |
| | | 3.0 | XC | 23.5 | 9.2 | 9.8 | 383 | 192 | 128 | 95.8 | 63.9 | 47.9 | 360 | 180 | 120 | 89.9 | 59.9 | 45.0 |
| | | 3.5 | XC | 25.3 | 9.8 | 10.2 | 387 | 194 | 129 | 96.8 | 64.5 | 48.4 | 372 | 186 | 124 | 93.0 | 62.0 | 46.5 |
| (B)1/2XP40R (B)1/2XP40L | 1/4TTJ15 | 1.5 | XC | 26.6 | 7.8 | 8.4 | 512 | 256 | 171 | 128 | 85.3 | 63.9 | 475 | 238 | 158 | 119 | 79.2 | 59.4 |
| | | 2.0 | XC | 31.0 | 9.0 | 9.8 | 517 | 258 | 172 | 129 | 86.1 | 64.6 | 474 | 237 | 158 | 119 | 79.1 | 59.3 |
| | | 3.0 | XC | 37.7 | 9.6 | 10.4 | 589 | 295 | 196 | 147 | 98.2 | 73.6 | 544 | 272 | 181 | 136 | 90.6 | 68.0 |
| | | 3.5 | XC | 40.4 | 10.2 | 10.8 | 594 | 297 | 198 | 149 | 99.0 | 74.3 | 561 | 281 | 187 | 140 | 93.5 | 70.1 |
| | | 4.0 | XC | 43.6 | 10.8 | 11.6 | 606 | 303 | 202 | 151 | 101 | 75.7 | 564 | 282 | 188 | 141 | 94.0 | 70.5 |

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). See pages 136–157 for drop size classification, useful formulas and other information.
For lower chart only, application rates are identical for a two-tip setup. Swath width and flow capacity will be doubled for a two-tip setup.

(B)=BSPT



| "R", "L" | CENTER NOZZLE "C" | bar | DROP SIZE | CAPACITY ONE NOZZLE IN l/min | I/ha FOR SINGLE NOZZLE | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|-------------------|-----|-----------|------------------------------|--------------------------|--------------|--------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| | | | | | SPRAY WIDTH "W" (meters) | | HEIGHT "Y" = 60 cm | | | | | | | | | | HEIGHT "Y" = 90 cm | | | | | | | | | |
| | | | | | 60 cm HEIGHT | 90 cm HEIGHT | 4 km/h | 6 km/h | 8 km/h | 10 km/h | 12 km/h | 16 km/h | 20 km/h | 25 km/h | 30 km/h | 35 km/h | 4 km/h | 6 km/h | 8 km/h | 10 km/h | 12 km/h | 16 km/h | 20 km/h | 25 km/h | 30 km/h | 35 km/h |
| (B)1/4XP10R (B)1/4XP10L | | 1.5 | UC | 2.81 | 2.6 | 3.0 | 162 | 108 | 81.1 | 64.8 | 54.0 | 40.5 | 32.4 | 25.9 | 21.6 | 18.5 | 141 | 93.7 | 70.3 | 56.2 | 46.8 | 35.1 | 28.1 | 22.5 | 18.7 | |
| | | 2.0 | UC | 3.23 | 3.0 | 3.4 | 162 | 108 | 80.8 | 64.6 | 53.8 | 40.4 | 32.3 | 25.8 | 21.5 | 18.5 | 143 | 95.0 | 71.3 | 57.0 | 47.5 | 35.6 | 28.5 | 22.8 | 19.0 | |
| | | 3.0 | UC | 3.95 | 3.4 | 3.8 | 174 | 116 | 87.1 | 69.7 | 58.1 | 43.6 | 34.9 | 27.9 | 23.2 | 19.9 | 156 | 104 | 78.0 | 62.4 | 52.0 | 39.0 | 31.2 | 24.9 | 20.8 | |
| | | 3.5 | UC | 4.26 | 3.8 | 4.1 | 168 | 112 | 84.1 | 67.3 | 56.1 | 42.0 | 33.6 | 26.9 | 22.4 | 19.2 | 156 | 104 | 77.9 | 62.3 | 52.0 | 39.0 | 31.2 | 24.9 | 20.8 | |
| (B)1/4XP20R (B)1/4XP20L | | 1.5 | UC | 5.56 | 2.7 | 3.4 | 309 | 206 | 154 | 124 | 103 | 77.2 | 61.8 | 49.4 | 41.2 | 35.3 | 245 | 164 | 123 | 98.1 | 81.8 | 61.3 | 49.1 | 39.2 | 32.7 | |
| | | 2.0 | UC | 6.43 | 3.5 | 3.7 | 276 | 184 | 138 | 110 | 91.9 | 68.9 | 55.1 | 44.1 | 36.7 | 31.5 | 261 | 174 | 130 | 104 | 86.9 | 65.2 | 52.1 | 41.7 | 34.8 | |
| | | 3.0 | UC | 7.87 | 4.1 | 4.3 | 288 | 192 | 144 | 115 | 96.0 | 72.0 | 57.6 | 46.1 | 38.4 | 32.9 | 275 | 183 | 137 | 110 | 91.5 | 68.6 | 54.9 | 43.9 | 36.6 | |
| | | 3.5 | UC | 8.52 | 4.4 | 4.6 | 290 | 194 | 145 | 116 | 96.8 | 72.6 | 58.1 | 46.5 | 38.7 | 33.2 | 278 | 185 | 139 | 111 | 92.6 | 69.5 | 55.6 | 44.5 | 37.0 | |
| (B)1/4XP25R (B)1/4XP25L | | 1.5 | UC | 9.12 | 4.6 | 4.9 | 297 | 198 | 149 | 119 | 99.1 | 74.3 | 59.5 | 47.6 | 39.7 | 34.0 | 279 | 186 | 140 | 112 | 93.1 | 69.8 | 55.8 | 44.7 | 37.2 | |
| | | 2.0 | UC | 6.85 | 3.2 | 3.4 | 321 | 214 | 161 | 128 | 107 | 80.3 | 64.2 | 51.4 | 42.8 | 36.7 | 302 | 201 | 151 | 121 | 101 | 75.6 | 60.4 | 48.4 | 40.3 | |
| | | 3.0 | UC | 7.95 | 3.7 | 4.1 | 322 | 215 | 161 | 129 | 107 | 80.6 | 64.5 | 51.6 | 43.0 | 36.8 | 291 | 194 | 145 | 116 | 97.0 | 72.7 | 58.2 | 46.5 | 38.8 | |
| | | 3.5 | UC | 9.77 | 4.1 | 4.4 | 357 | 238 | 179 | 143 | 119 | 89.4 | 71.5 | 57.2 | 47.7 | 40.9 | 333 | 222 | 167 | 133 | 111 | 83.3 | 66.6 | 53.3 | 44.4 | |
| (B)1/2XP40R (B)1/2XP40L | | 1.5 | UC | 10.5 | 4.4 | 4.6 | 358 | 239 | 179 | 143 | 119 | 89.5 | 71.6 | 57.3 | 47.7 | 40.9 | 342 | 228 | 171 | 137 | 114 | 85.6 | 68.5 | 54.8 | 45.7 | |
| | | 2.0 | UC | 11.2 | 4.6 | 4.9 | 365 | 243 | 183 | 146 | 122 | 91.3 | 73.0 | 58.4 | 48.7 | 41.7 | 343 | 229 | 171 | 137 | 114 | 85.7 | 68.6 | 54.9 | 45.7 | |
| | | 3.0 | UC | 11.2 | 3.4 | 3.7 | 494 | 329 | 247 | 198 | 165 | 124 | 98.8 | 79.1 | 65.9 | 56.5 | 45.4 | 303 | 227 | 182 | 151 | 114 | 90.8 | 72.6 | 60.5 | |
| | | 3.5 | UC | 13.1 | 4.0 | 4.4 | 491 | 328 | 246 | 197 | 164 | 123 | 98.3 | 78.6 | 65.5 | 56.1 | 44.7 | 298 | 223 | 179 | 149 | 112 | 89.3 | 71.5 | 59.5 | |
| (B)1/2XP80R (B)1/2XP80L | | 2.0 | UC | 15.9 | 4.3 | 4.7 | 555 | 370 | 277 | 222 | 185 | 139 | 111 | 88.7 | 74.0 | 63.4 | 50.7 | 338 | 254 | 203 | 169 | 127 | 101 | 81.2 | 67.7 | |
| | | 3.0 | UC | 17.0 | 4.6 | 4.9 | 554 | 370 | 277 | 222 | 185 | 139 | 111 | 88.7 | 73.9 | 63.4 | 52.0 | 347 | 260 | 208 | 173 | 130 | 104 | 83.3 | 69.4 | |
| | | 3.5 | UC | 18.4 | 4.9 | 5.3 | 563 | 376 | 282 | 225 | 188 | 141 | 113 | 90.1 | 75.1 | 64.4 | 52.1 | 347 | 260 | 208 | 174 | 130 | 104 | 83.3 | 69.4 | |
| | | 4.0 | UC | 22.1 | 4.0 | 4.7 | 829 | 553 | 414 | 332 | 276 | 207 | 166 | 133 | 111 | 94.7 | 70.5 | 470 | 353 | 282 | 235 | 176 | 141 | 113 | 94.0 | |
| (B)1/2XP80R (B)1/2XP80L | | 2.0 | UC | 25.5 | 4.6 | 5.0 | 832 | 554 | 416 | 333 | 277 | 208 | 166 | 133 | 111 | 95.0 | 76.5 | 510 | 383 | 306 | 255 | 191 | 153 | 122 | 102 | |
| | | 3.0 | UC | 31.1 | 4.9 | 5.3 | 952 | 635 | 476 | 381 | 317 | 238 | 190 | 152 | 127 | 109 | 88.0 | 58.7 | 440 | 352 | 293 | 220 | 176 | 141 | 117 | |
| | | 3.5 | UC | 33.2 | 5.0 | 5.5 | 996 | 664 | 498 | 398 | 332 | 249 | 199 | 159 | 133 | 114 | 90.5 | 60.4 | 453 | 362 | 302 | 226 | 181 | 145 | 121 | |
| | | 4.0 | UC | 35.8 | 5.3 | 5.6 | 1013 | 675 | 507 | 405 | 338 | 253 | 203 | 162 | 135 | 116 | 95.9 | 63.9 | 479 | 384 | 320 | 240 | 192 | 153 | 128 | |



BoomJet® Boomless Nozzles with Extra-Wide Flat Spray Projection

5430-3/4 NPT



5880-3/4 NPT Female
Back inlet connection.

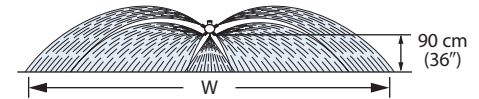


The 5430 and 5880 BoomJet nozzles are used for spraying areas not easily accessed with a boom sprayer. They combine two off-center tips and three VeeJet® nozzles to produce a wide swath flat spray. While not as uniform as a boom sprayer, the BoomJet provides good distribution.* The 5880 features a 1/4" gauge port and is supplied with one additional 1/4" NPT pipe plug and one blank tip for spraying to one side only. The 5430 utilizes a swivel design which can be adjusted to modify the spray pattern width. Both models feature 3/4" NPT female inlet threads.

*Uniformity can be optimized by double overlapping spray swaths on successive sprayer passes. Remember, this also doubles the application volume.

How to order:

Specify BoomJet nozzle number.
Example: 5880-3/4-2TOC-06



W = Maximum effective coverage with nozzle mounted at 1 m height.

| Nozzle | Mesh (2) | Tip (2) | Strainer (1) | Pressure (bar) | Capacity (l/min) | "W" (meters) | l/ha | | | | |
|------------------------------------|-----------|--------------|-------------------------------------|----------------|------------------|--------------|--------|--------|---------|---------|---------|
| | | | | | | | 6 km/h | 8 km/h | 12 km/h | 16 km/h | 24 km/h |
| 5430-3/4-2TOC06 5880-3/4-2TOC06 | 6733-OC06 | H1/4VV-1506 | H1/4VVL-9502 with 50 mesh strainer | 1.5 | 7.26 | 10.2 | 71.2 | 53.4 | 35.6 | 26.7 | 17.8 |
| | | | | 2.0 | 8.38 | 10.3 | 81.4 | 61.0 | 40.7 | 30.5 | 20.3 |
| | | | | 2.5 | 9.37 | 10.5 | 89.2 | 66.9 | 44.6 | 33.5 | 22.3 |
| 5430-3/4-2TOC10 5880-3/4-2TOC10 | OC-10 | H1/4U-0508HE | H1/4VVL-11004 with 50 mesh strainer | 1.5 | 11.16 | 12.0 | 93.0 | 69.8 | 46.5 | 34.9 | 23.3 |
| | | | | 2.0 | 12.89 | 12.1 | 107 | 79.9 | 53.3 | 39.9 | 26.6 |
| | | | | 2.5 | 14.41 | 12.3 | 117 | 87.9 | 58.6 | 43.9 | 29.3 |
| 5430-3/4-2TOC20 5880-3/4-2TOC20 | OC-20 | H1/4U-0520HE | H1/4VVL-9506 with 50 mesh strainer | 1.5 | 24.00 | 14.3 | 168 | 126 | 83.9 | 62.9 | 42.0 |
| | | | | 2.0 | 27.72 | 15.2 | 182 | 137 | 91.2 | 68.4 | 45.6 |
| | | | | 2.5 | 30.99 | 15.8 | 196 | 147 | 98.1 | 73.6 | 49.0 |
| 5430-3/4-2TOC40 5880-3/4-2TOC40 | OC-40 | H1/4U-0540HE | H1/4U-9510 | 1.5 | 47.44 | 17.1 | 277 | 208 | 139 | 104 | 69.4 |
| | | | | 2.0 | 54.78 | 18.2 | 301 | 226 | 150 | 113 | 75.2 |
| | | | | 2.5 | 61.25 | 19.2 | 319 | 239 | 160 | 120 | 79.8 |

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). See pages 136-157 for useful formulas and other information.



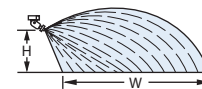
TeeJet® Swivel Spray Nozzles with Off-Center Flat Spray Tips — Larger Capacities

Large capacity swivel nozzles, available in both single or double styles, are available with 3/4" NPT (F) inlet connections for use as boomless type nozzles. For double swivels the tabulated GPM (l/min) capacities are twice those shown for single swivels.

How to order:

Specify swivel number and material.
Example: 4629-3/4-TOC10 Brass

Extra Wide Flat Spray Coverage



W = Maximum effective coverage with nozzle mounted at 1 m height.



Type 4629-3/4-TOC
Single Swivel
with 3/4" NPT (F) pipe
connection. Brass.

Type 4418-3/4-2TOC
Double Swivel
with 3/4" NPT (F) pipe
connection.
Brass.



| Nozzle | Pressure (bar) | Capacity (l/min) | "W" (meters) | HEIGHT = 90 cm | | |
|-----------------|----------------|------------------|--------------|----------------|---------|---------|
| | | | | l/ha | | |
| | | | | 8 km/h | 16 km/h | 24 km/h |
| 4629-3/4-TOC10 | 2.0 | 3.23 | 5.4 | 44.9 | 22.4 | 15.0 |
| | 3.0 | 3.95 | 5.6 | 52.9 | 26.5 | 17.6 |
| | 4.0 | 4.56 | 5.6 | 61.1 | 30.5 | 20.4 |
| 4629-3/4-TOC20 | 2.0 | 6.45 | 7.1 | 68.1 | 34.1 | 22.7 |
| | 3.0 | 7.90 | 7.4 | 80.1 | 40.0 | 26.7 |
| | 4.0 | 9.12 | 7.4 | 92.4 | 46.2 | 30.8 |
| 4629-3/4-TOC40 | 2.0 | 12.89 | 7.9 | 122 | 61.2 | 40.8 |
| | 3.0 | 15.79 | 8.2 | 144 | 72.2 | 48.1 |
| | 4.0 | 18.23 | 8.2 | 167 | 83.4 | 55.6 |
| 4629-3/4-TOC80 | 2.0 | 25.78 | 8.8 | 220 | 110 | 73.3 |
| | 3.0 | 31.58 | 9.1 | 260 | 130 | 86.8 |
| | 4.0 | 36.47 | 9.1 | 301 | 150 | 100 |
| 4629-3/4-TOC150 | 2.0 | 48.34 | 9.3 | 390 | 195 | 130 |
| | 3.0 | 59.21 | 9.6 | 463 | 231 | 154 |
| | 4.0 | 68.37 | 9.6 | 534 | 267 | 178 |
| 4629-3/4-TOC300 | 2.0 | 96.68 | 9.7 | 748 | 374 | 249 |
| | 3.0 | 118.41 | 10.0 | 888 | 444 | 296 |
| | 4.0 | 136.73 | 10.2 | 1005 | 503 | 335 |

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). See pages 136-157 for useful formulas and other information.

FieldJet® Boomless Nozzles with Extra-Wide Flat Spray Projection

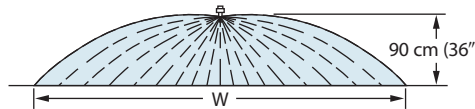


Type 1/4-KLC
1/4" NPT male pipe connections



The KLC FieldJet nozzle is typically used to spray areas not accessible with a boom sprayer. Its one-piece nozzle design projects spray to both sides to form a wide swath flat spray. The round orifice minimizes clogging. Uniformity across the swath is not as good as with a properly operated boom sprayer.* Available in brass or stainless steel.

*Uniformity can be optimized by double overlapping spray swaths on successive sprayer passes. Remember, this also doubles the application volume.



How to order:

Specify part number and material.

Example: 1/4KLC-SS18 – Stainless Steel

| Nozzle | bar | CAPACITY ONE NOZZLE IN l/min | "W" IN meters | l/ha | | | | | | |
|------------|-----|------------------------------|---------------|--------|--------|--------|--------|--------|---------|---------|
| | | | | 3 km/h | 4 km/h | 5 km/h | 6 km/h | 8 km/h | 10 km/h | 12 km/h |
| 1/4-KLC-5 | 0.7 | 1.91 | 4.3 | 88.8 | 66.6 | 53.3 | 44.4 | 33.3 | 26.7 | 22.2 |
| | 1.0 | 2.28 | 5.2 | 87.7 | 65.8 | 52.6 | 43.8 | 32.9 | 26.3 | 21.9 |
| | 2.0 | 3.23 | 5.5 | 117 | 88.1 | 70.5 | 58.7 | 44.0 | 35.2 | 29.4 |
| | 3.0 | 3.95 | 6.4 | 123 | 92.6 | 74.1 | 61.7 | 46.3 | 37.0 | 30.9 |
| 1/4-KLC-9 | 0.7 | 3.43 | 4.9 | 140 | 105 | 84.0 | 70.0 | 52.5 | 42.0 | 35.0 |
| | 1.0 | 4.10 | 5.5 | 149 | 112 | 89.5 | 74.5 | 55.9 | 44.7 | 37.3 |
| | 2.0 | 5.80 | 5.8 | 200 | 150 | 120 | 100 | 75.0 | 60.0 | 50.0 |
| | 3.0 | 7.10 | 6.4 | 222 | 166 | 133 | 111 | 83.2 | 66.6 | 55.5 |
| 1/4-KLC-18 | 0.7 | 6.86 | 5.5 | 249 | 187 | 150 | 125 | 93.5 | 74.8 | 62.4 |
| | 1.0 | 8.20 | 6.1 | 269 | 202 | 161 | 134 | 101 | 80.7 | 67.2 |
| | 2.0 | 11.6 | 6.4 | 363 | 272 | 218 | 181 | 136 | 109 | 90.6 |
| | 3.0 | 14.2 | 6.7 | 424 | 318 | 254 | 212 | 159 | 127 | 106 |
| 1/4-KLC-36 | 0.7 | 13.7 | 5.8 | 472 | 354 | 283 | 236 | 177 | 142 | 118 |
| | 1.0 | 16.4 | 6.7 | 490 | 367 | 294 | 245 | 184 | 147 | 122 |
| | 2.0 | 23.2 | 7.3 | 636 | 477 | 381 | 318 | 238 | 191 | 159 |
| | 3.0 | 28.4 | 7.9 | 719 | 539 | 431 | 359 | 270 | 216 | 180 |

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). See pages 136–157 for useful formulas and other information.