

**INTRODUCTION**

The 9S80HF series stainless steel fixed-blade grilles with filter rack and hinged face may be set to either 0° or 45° deflection for performance and aesthetic versatility. These grilles feature 3/4" on center blade spacing and are available for surface mount or lay-in T-bar applications.

**MODEL**

9S80HF - Hinge Face, Fixed Blade Return Grille

**FEATURES**

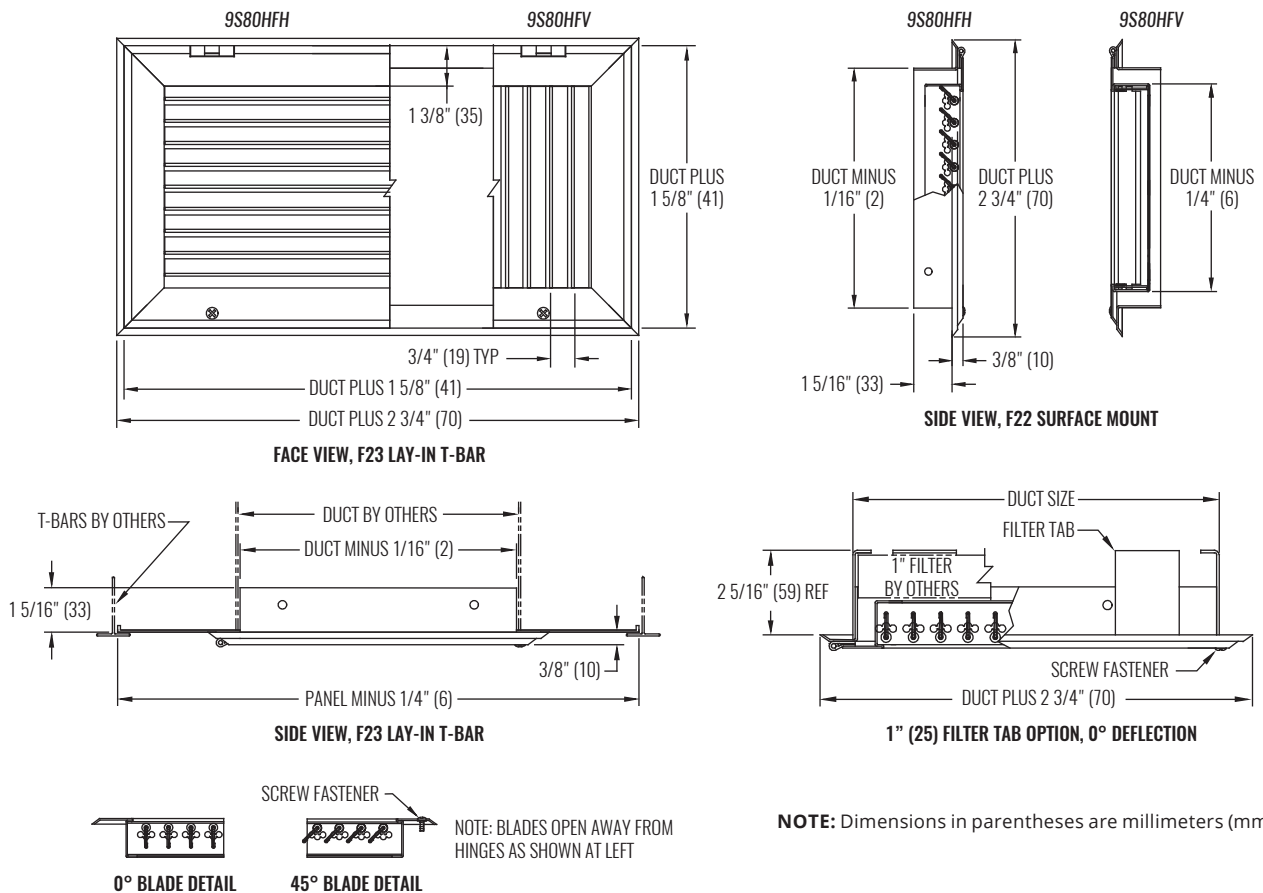
- 304 Stainless steel construction (316 optional)
- Sturdy deflection blades spaced on 3/4" centers
- Countersunk screw holes
- Horizontal or vertical blades at 45° (H or V)
- Horizontal or vertical blades at 0° (HZ or VZ)
- Standard finish is 90 - #4 Satin Polish or 44 - British White

**ACCESSORIES**

- Stainless steel OBD welded to unit, adjustable from face of grille (model 9OBD)
- Square to round adapter (model 9SRA)
- Filter clips for filter mounting



**DIMENSIONAL DATA**



# 9S80HF

Stainless Steel Return Grille, Single Deflection, Hinged



## PERFORMANCE DATA

|              |           | IP DATA  |          |        |          | SOUND             | METRIC DATA |          |          |       |    | OCTAVE BAND, dB |    |    |    |    |  |  |
|--------------|-----------|----------|----------|--------|----------|-------------------|-------------|----------|----------|-------|----|-----------------|----|----|----|----|--|--|
| NOM DUCT     | DUCT AREA | NECK VEL | AIR FLOW | Ps     | NOM DUCT |                   | DUCT AREA   | NECK VEL | AIR FLOW | Ps    |    |                 |    |    |    |    |  |  |
| in           | sq ft     | fpm      | cfm      | in wg  | NC       | cm                | sq m        | m/s      | l/s      | Pa    | 2  | 3               | 4  | 5  | 6  | 7  |  |  |
| 6<br>x<br>6  | 0.25      | 300      | 57       | -0.013 | -        | 15.2<br>x<br>15.2 | 0.02        | 1.52     | 27       | -3.1  | 38 | 23              | 19 | -  | -  | -  |  |  |
|              |           | 400      | 77       | -0.022 | -        |                   |             | 2.03     | 36       | -5.6  | 37 | 27              | 23 | 13 | -  | -  |  |  |
|              |           | 500      | 96       | -0.035 | -        |                   |             | 2.54     | 45       | -8.7  | 36 | 30              | 26 | 17 | 12 | -  |  |  |
|              |           | 600      | 115      | -0.051 | 13       |                   |             | 3.05     | 54       | -12.6 | 36 | 33              | 29 | 20 | 15 | -  |  |  |
|              |           | 700      | 134      | -0.069 | 15       |                   |             | 3.56     | 63       | -17.1 | 36 | 35              | 31 | 23 | 17 | 12 |  |  |
|              |           | 800      | 153      | -0.090 | 17       |                   |             | 4.06     | 72       | -22.4 | 35 | 36              | 33 | 26 | 20 | 14 |  |  |
|              |           | 900      | 172      | -0.114 | 19       |                   |             | 4.57     | 81       | -28.3 | 35 | 38              | 35 | 28 | 22 | 16 |  |  |
|              |           | 1000     | 191      | -0.141 | 21       |                   |             | 5.08     | 90       | -35.0 | 35 | 39              | 36 | 30 | 24 | 18 |  |  |
|              |           | 1100     | 211      | -0.170 | 22       |                   |             | 5.59     | 99       | -42.3 | 35 | 41              | 38 | 32 | 25 | 20 |  |  |
| 8<br>x<br>6  | 0.33      | 300      | 79       | -0.013 | -        | 20.3<br>x<br>15.2 | 0.03        | 1.52     | 37       | -3.1  | 39 | 25              | 20 | -  | -  | -  |  |  |
|              |           | 400      | 106      | -0.022 | -        |                   |             | 2.03     | 50       | -5.6  | 38 | 29              | 24 | 14 | -  | -  |  |  |
|              |           | 500      | 132      | -0.035 | 12       |                   |             | 2.54     | 62       | -8.7  | 38 | 32              | 28 | 18 | 13 | -  |  |  |
|              |           | 600      | 159      | -0.051 | 14       |                   |             | 3.05     | 75       | -12.6 | 37 | 34              | 30 | 22 | 16 | -  |  |  |
|              |           | 700      | 185      | -0.069 | 17       |                   |             | 3.56     | 87       | -17.1 | 37 | 36              | 33 | 25 | 19 | 13 |  |  |
|              |           | 800      | 211      | -0.090 | 19       |                   |             | 4.06     | 100      | -22.4 | 37 | 38              | 35 | 27 | 21 | 15 |  |  |
|              |           | 900      | 238      | -0.114 | 21       |                   |             | 4.57     | 112      | -28.3 | 36 | 39              | 36 | 29 | 23 | 17 |  |  |
|              |           | 1000     | 264      | -0.141 | 22       |                   |             | 5.08     | 125      | -35.0 | 36 | 41              | 38 | 31 | 25 | 19 |  |  |
|              |           | 1100     | 291      | -0.170 | 24       |                   |             | 5.59     | 137      | -42.3 | 36 | 42              | 39 | 33 | 27 | 21 |  |  |
| 10<br>x<br>6 | 0.42      | 300      | 101      | -0.013 | -        | 25.4<br>x<br>15.2 | 0.04        | 1.52     | 48       | -3.1  | 40 | 26              | 21 | -  | -  | -  |  |  |
|              |           | 400      | 135      | -0.022 | -        |                   |             | 2.03     | 64       | -5.6  | 39 | 30              | 25 | 15 | -  | -  |  |  |
|              |           | 500      | 169      | -0.035 | 13       |                   |             | 2.54     | 80       | -8.7  | 39 | 33              | 29 | 19 | 14 | -  |  |  |
|              |           | 600      | 202      | -0.051 | 15       |                   |             | 3.05     | 95       | -12.6 | 38 | 35              | 31 | 23 | 17 | 11 |  |  |
|              |           | 700      | 236      | -0.069 | 18       |                   |             | 3.56     | 111      | -17.1 | 38 | 37              | 34 | 26 | 20 | 14 |  |  |
|              |           | 800      | 270      | -0.090 | 20       |                   |             | 4.06     | 127      | -22.4 | 38 | 39              | 36 | 28 | 22 | 16 |  |  |
|              |           | 900      | 304      | -0.114 | 22       |                   |             | 4.57     | 143      | -28.3 | 37 | 40              | 37 | 30 | 24 | 19 |  |  |
|              |           | 1000     | 337      | -0.141 | 23       |                   |             | 5.08     | 159      | -35.0 | 37 | 42              | 39 | 32 | 26 | 20 |  |  |
|              |           | 1100     | 371      | -0.170 | 25       |                   |             | 5.59     | 175      | -42.3 | 37 | 43              | 40 | 34 | 28 | 22 |  |  |
| 8<br>x<br>8  | 0.44      | 300      | 110      | -0.013 | -        | 20.3<br>x<br>20.3 | 0.04        | 1.52     | 52       | -3.1  | 40 | 26              | 21 | -  | -  | -  |  |  |
|              |           | 400      | 146      | -0.022 | -        |                   |             | 2.03     | 69       | -5.6  | 40 | 30              | 26 | 15 | 11 | -  |  |  |
|              |           | 500      | 183      | -0.035 | 13       |                   |             | 2.54     | 86       | -8.7  | 39 | 33              | 29 | 20 | 14 | -  |  |  |
|              |           | 600      | 219      | -0.051 | 16       |                   |             | 3.05     | 103      | -12.6 | 39 | 35              | 32 | 23 | 18 | 12 |  |  |
|              |           | 700      | 256      | -0.069 | 18       |                   |             | 3.56     | 121      | -17.1 | 38 | 37              | 34 | 26 | 20 | 14 |  |  |
|              |           | 800      | 292      | -0.090 | 20       |                   |             | 4.06     | 138      | -22.4 | 38 | 39              | 36 | 28 | 22 | 17 |  |  |
|              |           | 900      | 329      | -0.114 | 22       |                   |             | 4.57     | 155      | -28.3 | 38 | 41              | 38 | 31 | 24 | 19 |  |  |
|              |           | 1000     | 365      | -0.141 | 24       |                   |             | 5.08     | 172      | -35.0 | 38 | 42              | 39 | 33 | 26 | 21 |  |  |
|              |           | 1100     | 402      | -0.170 | 25       |                   |             | 5.59     | 189      | -42.3 | 37 | 43              | 41 | 34 | 28 | 22 |  |  |
| 12<br>x<br>6 | 0.50      | 300      | 123      | -0.013 | -        | 30.5<br>x<br>15.2 | 0.05        | 1.52     | 58       | -3.1  | 41 | 27              | 22 | -  | -  | -  |  |  |
|              |           | 400      | 164      | -0.022 | -        |                   |             | 2.03     | 77       | -5.6  | 40 | 30              | 26 | 16 | 11 | -  |  |  |
|              |           | 500      | 205      | -0.035 | 13       |                   |             | 2.54     | 97       | -8.7  | 40 | 33              | 29 | 20 | 15 | -  |  |  |
|              |           | 600      | 246      | -0.051 | 16       |                   |             | 3.05     | 116      | -12.6 | 39 | 36              | 32 | 23 | 18 | 12 |  |  |
|              |           | 700      | 287      | -0.069 | 19       |                   |             | 3.56     | 136      | -17.1 | 39 | 38              | 34 | 26 | 21 | 15 |  |  |
|              |           | 800      | 328      | -0.090 | 21       |                   |             | 4.06     | 155      | -22.4 | 39 | 40              | 36 | 29 | 23 | 17 |  |  |
|              |           | 900      | 369      | -0.114 | 23       |                   |             | 4.57     | 174      | -28.3 | 38 | 41              | 38 | 31 | 25 | 19 |  |  |
|              |           | 1000     | 410      | -0.141 | 24       |                   |             | 5.08     | 194      | -35.0 | 38 | 43              | 40 | 33 | 27 | 21 |  |  |
|              |           | 1100     | 451      | -0.170 | 26       |                   |             | 5.59     | 213      | -42.3 | 38 | 44              | 41 | 35 | 28 | 23 |  |  |
| 14<br>x<br>6 | 0.58      | 300      | 145      | -0.013 | -        | 35.6<br>x<br>15.2 | 0.05        | 1.52     | 68       | -3.1  | 41 | 27              | 22 | 11 | -  | -  |  |  |
|              |           | 400      | 193      | -0.022 | 11       |                   |             | 2.03     | 91       | -5.6  | 41 | 31              | 27 | 16 | 12 | -  |  |  |
|              |           | 500      | 242      | -0.035 | 14       |                   |             | 2.54     | 114      | -8.7  | 40 | 34              | 30 | 21 | 16 | -  |  |  |
|              |           | 600      | 290      | -0.051 | 17       |                   |             | 3.05     | 137      | -12.6 | 40 | 37              | 33 | 24 | 19 | 13 |  |  |
|              |           | 700      | 338      | -0.069 | 19       |                   |             | 3.56     | 160      | -17.1 | 40 | 39              | 35 | 27 | 21 | 16 |  |  |
|              |           | 800      | 386      | -0.090 | 21       |                   |             | 4.06     | 182      | -22.4 | 39 | 40              | 37 | 30 | 24 | 18 |  |  |
|              |           | 900      | 435      | -0.114 | 23       |                   |             | 4.57     | 205      | -28.3 | 39 | 42              | 39 | 32 | 26 | 20 |  |  |
|              |           | 1000     | 483      | -0.141 | 25       |                   |             | 5.08     | 228      | -35.0 | 39 | 43              | 40 | 34 | 27 | 22 |  |  |
|              |           | 1100     | 531      | -0.170 | 26       |                   |             | 5.59     | 251      | -42.3 | 38 | 45              | 42 | 36 | 29 | 24 |  |  |

NOTE: See notes and correction factors on page P1-82.

### PERFORMANCE DATA

| IP DATA       |           |          |          |        | SOUND | METRIC DATA       |           |          |          |       | OCTAVE BAND, dB |    |    |    |    |    |   |
|---------------|-----------|----------|----------|--------|-------|-------------------|-----------|----------|----------|-------|-----------------|----|----|----|----|----|---|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     |       | NOM DUCT          | DUCT AREA | NECK VEL | AIR FLOW | Ps    |                 |    |    |    |    |    |   |
| in            | sq ft     | fpm      | cfm      | in wg  |       | NC                | cm        | sq m     | m/s      | l/s   | Pa              | 2  | 3  | 4  | 5  | 6  | 7 |
| 12<br>x<br>8  | 0.67      | 300      | 170      | -0.013 | -     | 30.5<br>x<br>20.3 | 0.06      | 1.52     | 80       | -3.1  | 42              | 28 | 23 | 12 | -  | -  |   |
|               |           | 400      | 227      | -0.022 | 11    |                   |           | 2.03     | 107      | -5.6  | 41              | 32 | 27 | 17 | 12 | -  |   |
|               |           | 500      | 283      | -0.035 | 15    |                   |           | 2.54     | 134      | -8.7  | 41              | 35 | 31 | 21 | 16 | -  |   |
|               |           | 600      | 340      | -0.051 | 18    |                   |           | 3.05     | 160      | -12.6 | 41              | 37 | 33 | 25 | 19 | 14 |   |
|               |           | 700      | 396      | -0.069 | 20    |                   |           | 3.56     | 187      | -17.1 | 40              | 39 | 36 | 28 | 22 | 16 |   |
|               |           | 800      | 453      | -0.090 | 22    |                   |           | 4.06     | 214      | -22.4 | 40              | 41 | 38 | 30 | 24 | 19 |   |
|               |           | 900      | 510      | -0.114 | 24    |                   |           | 4.57     | 241      | -28.3 | 40              | 43 | 39 | 33 | 26 | 21 |   |
|               |           | 1000     | 566      | -0.141 | 26    |                   |           | 5.08     | 267      | -35.0 | 39              | 44 | 41 | 34 | 28 | 23 |   |
|               |           | 1100     | 623      | -0.170 | 27    |                   |           | 5.59     | 294      | -42.3 | 39              | 45 | 42 | 36 | 30 | 24 |   |
| 10<br>x<br>10 | 0.69      | 300      | 178      | -0.013 | -     | 25.4<br>x<br>25.4 | 0.06      | 1.52     | 84       | -3.1  | 42              | 28 | 23 | 12 | -  | -  |   |
|               |           | 400      | 238      | -0.022 | 12    |                   |           | 2.03     | 112      | -5.6  | 42              | 32 | 28 | 17 | 13 | -  |   |
|               |           | 500      | 297      | -0.035 | 15    |                   |           | 2.54     | 140      | -8.7  | 41              | 35 | 31 | 22 | 16 | 11 |   |
|               |           | 600      | 357      | -0.051 | 18    |                   |           | 3.05     | 168      | -12.6 | 41              | 37 | 34 | 25 | 20 | 14 |   |
|               |           | 700      | 416      | -0.069 | 20    |                   |           | 3.56     | 196      | -17.1 | 40              | 39 | 36 | 28 | 22 | 17 |   |
|               |           | 800      | 475      | -0.090 | 22    |                   |           | 4.06     | 224      | -22.4 | 40              | 41 | 38 | 30 | 25 | 19 |   |
|               |           | 900      | 535      | -0.114 | 24    |                   |           | 4.57     | 252      | -28.3 | 40              | 43 | 40 | 33 | 27 | 21 |   |
|               |           | 1000     | 594      | -0.141 | 26    |                   |           | 5.08     | 280      | -35.0 | 40              | 44 | 41 | 35 | 28 | 23 |   |
|               |           | 1100     | 654      | -0.170 | 27    |                   |           | 5.59     | 308      | -42.3 | 39              | 45 | 43 | 36 | 30 | 24 |   |
| 18<br>x<br>6  | 0.75      | 300      | 189      | -0.013 | -     | 45.7<br>x<br>15.2 | 0.07      | 1.52     | 89       | -3.1  | 43              | 28 | 24 | 12 | -  | -  |   |
|               |           | 400      | 252      | -0.022 | 12    |                   |           | 2.03     | 119      | -5.6  | 42              | 32 | 28 | 18 | 13 | -  |   |
|               |           | 500      | 314      | -0.035 | 15    |                   |           | 2.54     | 148      | -8.7  | 41              | 35 | 31 | 22 | 17 | 11 |   |
|               |           | 600      | 377      | -0.051 | 18    |                   |           | 3.05     | 178      | -12.6 | 41              | 38 | 34 | 25 | 20 | 14 |   |
|               |           | 700      | 440      | -0.069 | 21    |                   |           | 3.56     | 208      | -17.1 | 41              | 40 | 36 | 28 | 22 | 17 |   |
|               |           | 800      | 503      | -0.090 | 23    |                   |           | 4.06     | 237      | -22.4 | 40              | 41 | 38 | 31 | 25 | 19 |   |
|               |           | 900      | 566      | -0.114 | 24    |                   |           | 4.57     | 267      | -28.3 | 40              | 43 | 40 | 33 | 27 | 21 |   |
|               |           | 1000     | 629      | -0.141 | 26    |                   |           | 5.08     | 297      | -35.0 | 40              | 44 | 42 | 35 | 29 | 23 |   |
|               |           | 1100     | 692      | -0.170 | 28    |                   |           | 5.59     | 326      | -42.3 | 40              | 46 | 43 | 37 | 30 | 25 |   |
| 12<br>x<br>10 | 0.83      | 300      | 217      | -0.013 | -     | 30.5<br>x<br>25.4 | 0.08      | 1.52     | 102      | -3.1  | 43              | 29 | 24 | 13 | -  | -  |   |
|               |           | 400      | 289      | -0.022 | 12    |                   |           | 2.03     | 136      | -5.6  | 43              | 33 | 28 | 18 | 13 | -  |   |
|               |           | 500      | 361      | -0.035 | 16    |                   |           | 2.54     | 171      | -8.7  | 42              | 36 | 32 | 22 | 17 | 11 |   |
|               |           | 600      | 434      | -0.051 | 19    |                   |           | 3.05     | 205      | -12.6 | 42              | 38 | 34 | 26 | 20 | 15 |   |
|               |           | 700      | 506      | -0.069 | 21    |                   |           | 3.56     | 239      | -17.1 | 41              | 40 | 37 | 29 | 23 | 17 |   |
|               |           | 800      | 578      | -0.090 | 23    |                   |           | 4.06     | 273      | -22.4 | 41              | 42 | 39 | 31 | 25 | 20 |   |
|               |           | 900      | 650      | -0.114 | 25    |                   |           | 4.57     | 307      | -28.3 | 41              | 44 | 41 | 34 | 27 | 22 |   |
|               |           | 1000     | 723      | -0.141 | 27    |                   |           | 5.08     | 341      | -35.0 | 40              | 45 | 42 | 36 | 29 | 24 |   |
|               |           | 1100     | 795      | -0.170 | 28    |                   |           | 5.59     | 375      | -42.3 | 40              | 46 | 44 | 37 | 31 | 25 |   |
| 22<br>x<br>6  | 0.92      | 300      | 232      | -0.013 | -     | 55.9<br>x<br>15.2 | 0.09      | 1.52     | 110      | -3.1  | 43              | 29 | 24 | 13 | -  | -  |   |
|               |           | 400      | 310      | -0.022 | 13    |                   |           | 2.03     | 146      | -5.6  | 43              | 33 | 29 | 18 | 14 | -  |   |
|               |           | 500      | 387      | -0.035 | 16    |                   |           | 2.54     | 183      | -8.7  | 42              | 36 | 32 | 23 | 18 | 12 |   |
|               |           | 600      | 465      | -0.051 | 19    |                   |           | 3.05     | 219      | -12.6 | 42              | 39 | 35 | 26 | 21 | 15 |   |
|               |           | 700      | 542      | -0.069 | 21    |                   |           | 3.56     | 256      | -17.1 | 42              | 41 | 37 | 29 | 23 | 18 |   |
|               |           | 800      | 620      | -0.090 | 24    |                   |           | 4.06     | 293      | -22.4 | 41              | 42 | 39 | 32 | 26 | 20 |   |
|               |           | 900      | 697      | -0.114 | 25    |                   |           | 4.57     | 329      | -28.3 | 41              | 44 | 41 | 34 | 28 | 22 |   |
|               |           | 1000     | 775      | -0.141 | 27    |                   |           | 5.08     | 366      | -35.0 | 41              | 45 | 42 | 36 | 29 | 24 |   |
|               |           | 1100     | 852      | -0.170 | 28    |                   |           | 5.59     | 402      | -42.3 | 40              | 47 | 44 | 38 | 31 | 26 |   |
| 12<br>x<br>12 | 1.00      | 300      | 264      | -0.013 | -     | 30.5<br>x<br>30.5 | 0.09      | 1.52     | 124      | -3.1  | 44              | 30 | 25 | 14 | -  | -  |   |
|               |           | 400      | 352      | -0.022 | 13    |                   |           | 2.03     | 166      | -5.6  | 43              | 34 | 29 | 19 | 14 | -  |   |
|               |           | 500      | 439      | -0.035 | 17    |                   |           | 2.54     | 207      | -8.7  | 43              | 37 | 33 | 23 | 18 | 12 |   |
|               |           | 600      | 527      | -0.051 | 20    |                   |           | 3.05     | 249      | -12.6 | 42              | 39 | 35 | 27 | 21 | 16 |   |
|               |           | 700      | 615      | -0.069 | 22    |                   |           | 3.56     | 290      | -17.1 | 42              | 41 | 38 | 30 | 24 | 18 |   |
|               |           | 800      | 703      | -0.090 | 24    |                   |           | 4.06     | 332      | -22.4 | 42              | 43 | 40 | 32 | 26 | 21 |   |
|               |           | 900      | 791      | -0.114 | 26    |                   |           | 4.57     | 373      | -28.3 | 41              | 44 | 41 | 34 | 28 | 23 |   |
|               |           | 1000     | 879      | -0.141 | 28    |                   |           | 5.08     | 415      | -35.0 | 41              | 46 | 43 | 36 | 30 | 24 |   |
|               |           | 1100     | 967      | -0.170 | 29    |                   |           | 5.59     | 456      | -42.3 | 41              | 47 | 44 | 38 | 32 | 26 |   |

NOTE: See notes and correction factors on page P1-82.

GRILLES | STAINLESS STEEL

# 9S80HF

Stainless Steel Return Grille, Single Deflection, Hinged



## PERFORMANCE DATA

|               |           | IP DATA  |          |        |          | SOUND             | METRIC DATA |          |          |       |    | OCTAVE BAND, dB |    |    |    |    |  |  |
|---------------|-----------|----------|----------|--------|----------|-------------------|-------------|----------|----------|-------|----|-----------------|----|----|----|----|--|--|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     | NOM DUCT |                   | DUCT AREA   | NECK VEL | AIR FLOW | Ps    |    |                 |    |    |    |    |  |  |
| in            | sq ft     | fpm      | cfm      | in wg  | NC       | cm                | sq m        | m/s      | l/s      | Pa    | 2  | 3               | 4  | 5  | 6  | 7  |  |  |
| 18<br>x<br>10 | 1.25      | 300      | 332      | -0.013 | -        | 45.7<br>x<br>25.4 | 0.12        | 1.52     | 157      | -3.1  | 45 | 31              | 26 | 15 | -  | -  |  |  |
|               |           | 400      | 443      | -0.022 | 14       |                   |             | 2.03     | 209      | -5.6  | 44 | 35              | 30 | 20 | 15 | -  |  |  |
|               |           | 500      | 554      | -0.035 | 18       |                   |             | 2.54     | 261      | -8.7  | 44 | 38              | 34 | 24 | 19 | 13 |  |  |
|               |           | 600      | 665      | -0.051 | 21       |                   |             | 3.05     | 314      | -12.6 | 43 | 40              | 36 | 28 | 22 | 16 |  |  |
|               |           | 700      | 776      | -0.069 | 23       |                   |             | 3.56     | 366      | -17.1 | 43 | 42              | 39 | 31 | 25 | 19 |  |  |
|               |           | 800      | 886      | -0.090 | 25       |                   |             | 4.06     | 418      | -22.4 | 43 | 44              | 41 | 33 | 27 | 22 |  |  |
|               |           | 900      | 997      | -0.114 | 27       |                   |             | 4.57     | 471      | -28.3 | 42 | 45              | 42 | 35 | 29 | 24 |  |  |
|               |           | 1000     | 1108     | -0.141 | 29       |                   |             | 5.08     | 523      | -35.0 | 42 | 47              | 44 | 37 | 31 | 25 |  |  |
|               |           | 1100     | 1219     | -0.170 | 30       |                   |             | 5.59     | 575      | -42.3 | 42 | 48              | 45 | 39 | 33 | 27 |  |  |
| 14<br>x<br>14 | 1.36      | 300      | 366      | -0.013 | -        | 35.6<br>x<br>35.6 | 0.13        | 1.52     | 173      | -3.1  | 45 | 31              | 26 | 15 | 11 | -  |  |  |
|               |           | 400      | 488      | -0.022 | 15       |                   |             | 2.03     | 230      | -5.6  | 45 | 35              | 31 | 20 | 16 | -  |  |  |
|               |           | 500      | 610      | -0.035 | 18       |                   |             | 2.54     | 288      | -8.7  | 44 | 38              | 34 | 25 | 19 | 14 |  |  |
|               |           | 600      | 732      | -0.051 | 21       |                   |             | 3.05     | 345      | -12.6 | 44 | 40              | 37 | 28 | 23 | 17 |  |  |
|               |           | 700      | 853      | -0.069 | 23       |                   |             | 3.56     | 403      | -17.1 | 43 | 43              | 39 | 31 | 25 | 20 |  |  |
|               |           | 800      | 975      | -0.090 | 25       |                   |             | 4.06     | 460      | -22.4 | 43 | 44              | 41 | 34 | 28 | 22 |  |  |
|               |           | 900      | 1097     | -0.114 | 27       |                   |             | 4.57     | 518      | -28.3 | 43 | 46              | 43 | 36 | 30 | 24 |  |  |
|               |           | 1000     | 1219     | -0.141 | 29       |                   |             | 5.08     | 575      | -35.0 | 43 | 47              | 44 | 38 | 31 | 26 |  |  |
|               |           | 1100     | 1341     | -0.170 | 30       |                   |             | 5.59     | 633      | -42.3 | 42 | 49              | 46 | 40 | 33 | 27 |  |  |
| 27<br>x<br>8  | 1.50      | 300      | 396      | -0.013 | 11       | 68.6<br>x<br>20.3 | 0.14        | 1.52     | 187      | -3.1  | 46 | 32              | 27 | 15 | 11 | -  |  |  |
|               |           | 400      | 529      | -0.022 | 15       |                   |             | 2.03     | 249      | -5.6  | 45 | 35              | 31 | 21 | 16 | -  |  |  |
|               |           | 500      | 661      | -0.035 | 19       |                   |             | 2.54     | 312      | -8.7  | 45 | 38              | 34 | 25 | 20 | 14 |  |  |
|               |           | 600      | 793      | -0.051 | 21       |                   |             | 3.05     | 374      | -12.6 | 44 | 41              | 37 | 28 | 23 | 17 |  |  |
|               |           | 700      | 925      | -0.069 | 24       |                   |             | 3.56     | 437      | -17.1 | 44 | 43              | 39 | 31 | 26 | 20 |  |  |
|               |           | 800      | 1057     | -0.090 | 26       |                   |             | 4.06     | 499      | -22.4 | 43 | 45              | 41 | 34 | 28 | 22 |  |  |
|               |           | 900      | 1189     | -0.114 | 28       |                   |             | 4.57     | 561      | -28.3 | 43 | 46              | 43 | 36 | 30 | 24 |  |  |
|               |           | 1000     | 1322     | -0.141 | 29       |                   |             | 5.08     | 624      | -35.0 | 43 | 48              | 45 | 38 | 32 | 26 |  |  |
|               |           | 1100     | 1454     | -0.170 | 31       |                   |             | 5.59     | 686      | -42.3 | 43 | 49              | 46 | 40 | 33 | 28 |  |  |
| 22<br>x<br>10 | 1.53      | 300      | 410      | -0.013 | 11       | 55.9<br>x<br>25.4 | 0.14        | 1.52     | 193      | -3.1  | 46 | 32              | 27 | 15 | 11 | -  |  |  |
|               |           | 400      | 546      | -0.022 | 15       |                   |             | 2.03     | 258      | -5.6  | 45 | 36              | 31 | 21 | 16 | -  |  |  |
|               |           | 500      | 683      | -0.035 | 19       |                   |             | 2.54     | 322      | -8.7  | 45 | 38              | 34 | 25 | 20 | 14 |  |  |
|               |           | 600      | 819      | -0.051 | 22       |                   |             | 3.05     | 387      | -12.6 | 44 | 41              | 37 | 29 | 23 | 17 |  |  |
|               |           | 700      | 956      | -0.069 | 24       |                   |             | 3.56     | 451      | -17.1 | 44 | 43              | 39 | 31 | 26 | 20 |  |  |
|               |           | 800      | 1092     | -0.090 | 26       |                   |             | 4.06     | 515      | -22.4 | 44 | 45              | 41 | 34 | 28 | 22 |  |  |
|               |           | 900      | 1229     | -0.114 | 28       |                   |             | 4.57     | 580      | -28.3 | 43 | 46              | 43 | 36 | 30 | 24 |  |  |
|               |           | 1000     | 1365     | -0.141 | 29       |                   |             | 5.08     | 644      | -35.0 | 43 | 48              | 45 | 38 | 32 | 26 |  |  |
|               |           | 1100     | 1502     | -0.170 | 31       |                   |             | 5.59     | 709      | -42.3 | 43 | 49              | 46 | 40 | 34 | 28 |  |  |
| 24<br>x<br>10 | 1.67      | 300      | 448      | -0.013 | 11       | 61.0<br>x<br>25.4 | 0.15        | 1.52     | 211      | -3.1  | 46 | 32              | 27 | 16 | 12 | -  |  |  |
|               |           | 400      | 597      | -0.022 | 16       |                   |             | 2.03     | 282      | -5.6  | 46 | 36              | 32 | 21 | 16 | 11 |  |  |
|               |           | 500      | 747      | -0.035 | 19       |                   |             | 2.54     | 352      | -8.7  | 45 | 39              | 35 | 25 | 20 | 15 |  |  |
|               |           | 600      | 896      | -0.051 | 22       |                   |             | 3.05     | 423      | -12.6 | 45 | 41              | 38 | 29 | 23 | 18 |  |  |
|               |           | 700      | 1045     | -0.069 | 24       |                   |             | 3.56     | 493      | -17.1 | 44 | 43              | 40 | 32 | 26 | 20 |  |  |
|               |           | 800      | 1195     | -0.090 | 26       |                   |             | 4.06     | 564      | -22.4 | 44 | 45              | 42 | 34 | 28 | 23 |  |  |
|               |           | 900      | 1344     | -0.114 | 28       |                   |             | 4.57     | 634      | -28.3 | 44 | 47              | 44 | 37 | 30 | 25 |  |  |
|               |           | 1000     | 1493     | -0.141 | 30       |                   |             | 5.08     | 705      | -35.0 | 43 | 48              | 45 | 39 | 32 | 27 |  |  |
|               |           | 1100     | 1643     | -0.170 | 31       |                   |             | 5.59     | 775      | -42.3 | 43 | 49              | 47 | 40 | 34 | 28 |  |  |
| 18<br>x<br>14 | 1.75      | 300      | 476      | -0.013 | 11       | 45.7<br>x<br>35.6 | 0.16        | 1.52     | 225      | -3.1  | 47 | 32              | 27 | 16 | 12 | -  |  |  |
|               |           | 400      | 635      | -0.022 | 16       |                   |             | 2.03     | 300      | -5.6  | 46 | 36              | 32 | 22 | 17 | 11 |  |  |
|               |           | 500      | 794      | -0.035 | 19       |                   |             | 2.54     | 375      | -8.7  | 45 | 39              | 35 | 26 | 21 | 15 |  |  |
|               |           | 600      | 952      | -0.051 | 22       |                   |             | 3.05     | 449      | -12.6 | 45 | 42              | 38 | 29 | 24 | 18 |  |  |
|               |           | 700      | 1111     | -0.069 | 25       |                   |             | 3.56     | 524      | -17.1 | 45 | 44              | 40 | 32 | 26 | 21 |  |  |
|               |           | 800      | 1270     | -0.090 | 27       |                   |             | 4.06     | 599      | -22.4 | 44 | 45              | 42 | 35 | 29 | 23 |  |  |
|               |           | 900      | 1429     | -0.114 | 28       |                   |             | 4.57     | 674      | -28.3 | 44 | 47              | 44 | 37 | 31 | 25 |  |  |
|               |           | 1000     | 1587     | -0.141 | 30       |                   |             | 5.08     | 749      | -35.0 | 44 | 48              | 45 | 39 | 33 | 27 |  |  |
|               |           | 1100     | 1746     | -0.170 | 32       |                   |             | 5.59     | 824      | -42.3 | 44 | 50              | 47 | 41 | 34 | 29 |  |  |

NOTE: See notes and correction factors on page P1-82.

### PERFORMANCE DATA

| IP DATA       |           |          |          |        | SOUND | METRIC DATA       |           |          |          |       | OCTAVE BAND, dB |    |    |    |    |    |   |
|---------------|-----------|----------|----------|--------|-------|-------------------|-----------|----------|----------|-------|-----------------|----|----|----|----|----|---|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     |       | NOM DUCT          | DUCT AREA | NECK VEL | AIR FLOW | Ps    |                 |    |    |    |    |    |   |
| in            | sq ft     | fpm      | cfm      | in wg  |       | NC                | cm        | sq m     | m/s      | l/s   | Pa              | 2  | 3  | 4  | 5  | 6  | 7 |
| 16<br>x<br>16 | 1.78      | 300      | 485      | -0.013 | 12    | 40.6<br>x<br>40.6 | 0.17      | 1.52     | 229      | -3.1  | 47              | 32 | 28 | 16 | 12 | -  |   |
|               |           | 400      | 646      | -0.022 | 16    |                   |           | 2.03     | 305      | -5.6  | 46              | 36 | 32 | 22 | 17 | 11 |   |
|               |           | 500      | 808      | -0.035 | 19    |                   |           | 2.54     | 381      | -8.7  | 45              | 39 | 35 | 26 | 21 | 15 |   |
|               |           | 600      | 969      | -0.051 | 22    |                   |           | 3.05     | 457      | -12.6 | 45              | 42 | 38 | 29 | 24 | 18 |   |
|               |           | 700      | 1131     | -0.069 | 25    |                   |           | 3.56     | 534      | -17.1 | 45              | 44 | 40 | 32 | 26 | 21 |   |
|               |           | 800      | 1292     | -0.090 | 27    |                   |           | 4.06     | 610      | -22.4 | 44              | 45 | 42 | 35 | 29 | 23 |   |
|               |           | 900      | 1454     | -0.114 | 29    |                   |           | 4.57     | 686      | -28.3 | 44              | 47 | 44 | 37 | 31 | 25 |   |
|               |           | 1000     | 1615     | -0.141 | 30    |                   |           | 5.08     | 762      | -35.0 | 44              | 48 | 46 | 39 | 33 | 27 |   |
|               |           | 1100     | 1777     | -0.170 | 32    |                   |           | 5.59     | 838      | -42.3 | 44              | 50 | 47 | 41 | 34 | 29 |   |
| 24<br>x<br>12 | 2.00      | 300      | 545      | -0.013 | 12    | 61.0<br>x<br>30.5 | 0.19      | 1.52     | 257      | -3.1  | 47              | 33 | 28 | 17 | 12 | -  |   |
|               |           | 400      | 727      | -0.022 | 16    |                   |           | 2.03     | 343      | -5.6  | 46              | 37 | 32 | 22 | 17 | 12 |   |
|               |           | 500      | 908      | -0.035 | 20    |                   |           | 2.54     | 429      | -8.7  | 46              | 40 | 36 | 26 | 21 | 15 |   |
|               |           | 600      | 1090     | -0.051 | 23    |                   |           | 3.05     | 514      | -12.6 | 45              | 42 | 38 | 30 | 24 | 19 |   |
|               |           | 700      | 1271     | -0.069 | 25    |                   |           | 3.56     | 600      | -17.1 | 45              | 44 | 41 | 33 | 27 | 21 |   |
|               |           | 800      | 1453     | -0.090 | 27    |                   |           | 4.06     | 686      | -22.4 | 45              | 46 | 43 | 35 | 29 | 24 |   |
|               |           | 900      | 1635     | -0.114 | 29    |                   |           | 4.57     | 772      | -28.3 | 45              | 48 | 44 | 37 | 31 | 26 |   |
|               |           | 1000     | 1816     | -0.141 | 31    |                   |           | 5.08     | 857      | -35.0 | 44              | 49 | 46 | 39 | 33 | 27 |   |
|               |           | 1100     | 1998     | -0.170 | 32    |                   |           | 5.59     | 943      | -42.3 | 44              | 50 | 47 | 41 | 35 | 29 |   |
| 18<br>x<br>18 | 2.25      | 300      | 620      | -0.013 | 13    | 45.7<br>x<br>45.7 | 0.21      | 1.52     | 293      | -3.1  | 48              | 33 | 29 | 17 | 13 | -  |   |
|               |           | 400      | 827      | -0.022 | 17    |                   |           | 2.03     | 390      | -5.6  | 47              | 37 | 33 | 23 | 18 | 12 |   |
|               |           | 500      | 1033     | -0.035 | 21    |                   |           | 2.54     | 488      | -8.7  | 46              | 40 | 36 | 27 | 22 | 16 |   |
|               |           | 600      | 1240     | -0.051 | 23    |                   |           | 3.05     | 585      | -12.6 | 46              | 43 | 39 | 30 | 25 | 19 |   |
|               |           | 700      | 1446     | -0.069 | 26    |                   |           | 3.56     | 683      | -17.1 | 46              | 45 | 41 | 33 | 28 | 22 |   |
|               |           | 800      | 1653     | -0.090 | 28    |                   |           | 4.06     | 780      | -22.4 | 45              | 47 | 43 | 36 | 30 | 24 |   |
|               |           | 900      | 1860     | -0.114 | 30    |                   |           | 4.57     | 878      | -28.3 | 45              | 48 | 45 | 38 | 32 | 26 |   |
|               |           | 1000     | 2066     | -0.141 | 31    |                   |           | 5.08     | 975      | -35.0 | 45              | 49 | 47 | 40 | 34 | 28 |   |
|               |           | 1100     | 2273     | -0.170 | 33    |                   |           | 5.59     | 1073     | -42.3 | 45              | 51 | 48 | 42 | 35 | 30 |   |
| 24<br>x<br>14 | 2.33      | 300      | 642      | -0.013 | 13    | 61.0<br>x<br>35.6 | 0.22      | 1.52     | 303      | -3.1  | 48              | 34 | 29 | 17 | 13 | -  |   |
|               |           | 400      | 856      | -0.022 | 17    |                   |           | 2.03     | 404      | -5.6  | 47              | 37 | 33 | 23 | 18 | 12 |   |
|               |           | 500      | 1070     | -0.035 | 21    |                   |           | 2.54     | 505      | -8.7  | 47              | 40 | 36 | 27 | 22 | 16 |   |
|               |           | 600      | 1284     | -0.051 | 23    |                   |           | 3.05     | 606      | -12.6 | 46              | 43 | 39 | 30 | 25 | 19 |   |
|               |           | 700      | 1498     | -0.069 | 26    |                   |           | 3.56     | 707      | -17.1 | 46              | 45 | 41 | 33 | 28 | 22 |   |
|               |           | 800      | 1711     | -0.090 | 28    |                   |           | 4.06     | 808      | -22.4 | 46              | 47 | 43 | 36 | 30 | 24 |   |
|               |           | 900      | 1925     | -0.114 | 30    |                   |           | 4.57     | 909      | -28.3 | 45              | 48 | 45 | 38 | 32 | 26 |   |
|               |           | 1000     | 2139     | -0.141 | 31    |                   |           | 5.08     | 1010     | -35.0 | 45              | 50 | 47 | 40 | 34 | 28 |   |
|               |           | 1100     | 2353     | -0.170 | 33    |                   |           | 5.59     | 1111     | -42.3 | 45              | 51 | 48 | 42 | 35 | 30 |   |
| 30<br>x<br>12 | 2.50      | 300      | 686      | -0.013 | 13    | 76.2<br>x<br>30.5 | 0.23      | 1.52     | 324      | -3.1  | 48              | 34 | 29 | 18 | 13 | -  |   |
|               |           | 400      | 914      | -0.022 | 17    |                   |           | 2.03     | 431      | -5.6  | 47              | 38 | 33 | 23 | 18 | 12 |   |
|               |           | 500      | 1143     | -0.035 | 21    |                   |           | 2.54     | 539      | -8.7  | 47              | 41 | 37 | 27 | 22 | 16 |   |
|               |           | 600      | 1371     | -0.051 | 24    |                   |           | 3.05     | 647      | -12.6 | 46              | 43 | 39 | 31 | 25 | 20 |   |
|               |           | 700      | 1600     | -0.069 | 26    |                   |           | 3.56     | 755      | -17.1 | 46              | 45 | 42 | 34 | 28 | 22 |   |
|               |           | 800      | 1828     | -0.090 | 28    |                   |           | 4.06     | 863      | -22.4 | 46              | 47 | 44 | 36 | 30 | 25 |   |
|               |           | 900      | 2057     | -0.114 | 30    |                   |           | 4.57     | 971      | -28.3 | 46              | 49 | 45 | 38 | 32 | 27 |   |
|               |           | 1000     | 2285     | -0.141 | 32    |                   |           | 5.08     | 1078     | -35.0 | 45              | 50 | 47 | 40 | 34 | 28 |   |
|               |           | 1100     | 2514     | -0.170 | 33    |                   |           | 5.59     | 1186     | -42.3 | 45              | 51 | 48 | 42 | 36 | 30 |   |
| 24<br>x<br>16 | 2.67      | 300      | 739      | -0.013 | 13    | 61.0<br>x<br>40.6 | 0.25      | 1.52     | 349      | -3.1  | 48              | 34 | 29 | 18 | 14 | -  |   |
|               |           | 400      | 985      | -0.022 | 18    |                   |           | 2.03     | 465      | -5.6  | 48              | 38 | 34 | 23 | 19 | 13 |   |
|               |           | 500      | 1231     | -0.035 | 21    |                   |           | 2.54     | 581      | -8.7  | 47              | 41 | 37 | 28 | 22 | 17 |   |
|               |           | 600      | 1477     | -0.051 | 24    |                   |           | 3.05     | 697      | -12.6 | 47              | 43 | 40 | 31 | 26 | 20 |   |
|               |           | 700      | 1724     | -0.069 | 26    |                   |           | 3.56     | 813      | -17.1 | 46              | 45 | 42 | 34 | 28 | 23 |   |
|               |           | 800      | 1970     | -0.090 | 29    |                   |           | 4.06     | 930      | -22.4 | 46              | 47 | 44 | 36 | 31 | 25 |   |
|               |           | 900      | 2216     | -0.114 | 30    |                   |           | 4.57     | 1046     | -28.3 | 46              | 49 | 46 | 39 | 33 | 27 |   |
|               |           | 1000     | 2462     | -0.141 | 32    |                   |           | 5.08     | 1162     | -35.0 | 46              | 50 | 47 | 41 | 34 | 29 |   |
|               |           | 1100     | 2708     | -0.170 | 33    |                   |           | 5.59     | 1278     | -42.3 | 45              | 52 | 49 | 43 | 36 | 30 |   |

NOTE: See notes and correction factors on page P1-82.

# 9S80HF



Stainless Steel Return Grille, Single Deflection, Hinged

## PERFORMANCE DATA

|               |           | IP DATA  |          |        |          | SOUND             | METRIC DATA |          |          |       |    | OCTAVE BAND, dB |    |    |    |    |  |  |
|---------------|-----------|----------|----------|--------|----------|-------------------|-------------|----------|----------|-------|----|-----------------|----|----|----|----|--|--|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     | NOM DUCT |                   | DUCT AREA   | NECK VEL | AIR FLOW | Ps    | 2  | 3               | 4  | 5  | 6  | 7  |  |  |
| in            | sq ft     | fpm      | cfm      | in wg  | NC       | cm                | sq m        | m/s      | l/s      | Pa    |    |                 |    |    |    |    |  |  |
| 20<br>x<br>20 | 2.78      | 300      | 772      | -0.013 | 14       | 50.8<br>x<br>50.8 | 0.26        | 1.52     | 364      | -3.1  | 49 | 34              | 30 | 18 | 14 | -  |  |  |
|               |           | 400      | 1029     | -0.022 | 18       |                   |             | 2.03     | 486      | -5.6  | 48 | 38              | 34 | 24 | 19 | 13 |  |  |
|               |           | 500      | 1287     | -0.035 | 21       |                   |             | 2.54     | 607      | -8.7  | 47 | 41              | 37 | 28 | 23 | 17 |  |  |
|               |           | 600      | 1544     | -0.051 | 24       |                   |             | 3.05     | 729      | -12.6 | 47 | 44              | 40 | 31 | 26 | 20 |  |  |
|               |           | 700      | 1801     | -0.069 | 27       |                   |             | 3.56     | 850      | -17.1 | 47 | 46              | 42 | 34 | 28 | 23 |  |  |
|               |           | 800      | 2059     | -0.090 | 29       |                   |             | 4.06     | 972      | -22.4 | 46 | 47              | 44 | 37 | 31 | 25 |  |  |
|               |           | 900      | 2316     | -0.114 | 31       |                   |             | 4.57     | 1093     | -28.3 | 46 | 49              | 46 | 39 | 33 | 27 |  |  |
|               |           | 1000     | 2573     | -0.141 | 32       |                   |             | 5.08     | 1214     | -35.0 | 46 | 50              | 47 | 41 | 35 | 29 |  |  |
|               |           | 1100     | 2831     | -0.170 | 34       |                   |             | 5.59     | 1336     | -42.3 | 46 | 52              | 49 | 43 | 36 | 31 |  |  |
| 24<br>x<br>18 | 3.00      | 300      | 836      | -0.013 | 14       | 61.0<br>x<br>45.7 | 0.28        | 1.52     | 394      | -3.1  | 46 | 32              | 27 | 16 | 12 | -  |  |  |
|               |           | 400      | 1114     | -0.022 | 18       |                   |             | 2.03     | 526      | -5.6  | 46 | 36              | 32 | 21 | 16 | 11 |  |  |
|               |           | 500      | 1393     | -0.035 | 22       |                   |             | 2.54     | 657      | -8.7  | 45 | 39              | 35 | 25 | 20 | 15 |  |  |
|               |           | 600      | 1671     | -0.051 | 25       |                   |             | 3.05     | 789      | -12.6 | 45 | 41              | 38 | 29 | 23 | 18 |  |  |
|               |           | 700      | 1950     | -0.069 | 27       |                   |             | 3.56     | 920      | -17.1 | 44 | 43              | 40 | 32 | 26 | 20 |  |  |
|               |           | 800      | 2228     | -0.090 | 29       |                   |             | 4.06     | 1052     | -22.4 | 44 | 45              | 42 | 34 | 28 | 23 |  |  |
|               |           | 900      | 2507     | -0.114 | 31       |                   |             | 4.57     | 1183     | -28.3 | 44 | 47              | 44 | 37 | 30 | 25 |  |  |
|               |           | 1000     | 2785     | -0.141 | 33       |                   |             | 5.08     | 1314     | -35.0 | 43 | 48              | 45 | 39 | 32 | 27 |  |  |
|               |           | 1100     | 3064     | -0.170 | 34       |                   |             | 5.59     | 1446     | -42.3 | 43 | 49              | 47 | 40 | 34 | 28 |  |  |
| 30<br>x<br>16 | 3.33      | 300      | 929      | -0.013 | 14       | 76.2<br>x<br>40.6 | 0.31        | 1.52     | 439      | -3.1  | 47 | 32              | 27 | 16 | 12 | -  |  |  |
|               |           | 400      | 1239     | -0.022 | 19       |                   |             | 2.03     | 585      | -5.6  | 46 | 36              | 32 | 22 | 17 | 11 |  |  |
|               |           | 500      | 1549     | -0.035 | 22       |                   |             | 2.54     | 731      | -8.7  | 45 | 39              | 35 | 26 | 21 | 15 |  |  |
|               |           | 600      | 1859     | -0.051 | 25       |                   |             | 3.05     | 877      | -12.6 | 45 | 42              | 38 | 29 | 24 | 18 |  |  |
|               |           | 700      | 2168     | -0.069 | 27       |                   |             | 3.56     | 1023     | -17.1 | 45 | 44              | 40 | 32 | 26 | 21 |  |  |
|               |           | 800      | 2478     | -0.090 | 30       |                   |             | 4.06     | 1170     | -22.4 | 44 | 45              | 42 | 35 | 29 | 23 |  |  |
|               |           | 900      | 2788     | -0.114 | 31       |                   |             | 4.57     | 1316     | -28.3 | 44 | 47              | 44 | 37 | 31 | 25 |  |  |
|               |           | 1000     | 3098     | -0.141 | 33       |                   |             | 5.08     | 1462     | -35.0 | 44 | 48              | 45 | 39 | 33 | 27 |  |  |
|               |           | 1100     | 3407     | -0.170 | 34       |                   |             | 5.59     | 1608     | -42.3 | 44 | 50              | 47 | 41 | 34 | 29 |  |  |
| 22<br>x<br>22 | 3.36      | 200      | 627      | -0.006 | -        | 55.9<br>x<br>55.9 | 0.31        | 1.02     | 296      | -1.4  | 50 | 30              | 24 | 11 | -  | -  |  |  |
|               |           | 300      | 941      | -0.013 | 14       |                   |             | 1.52     | 444      | -3.1  | 49 | 35              | 30 | 19 | 15 | -  |  |  |
|               |           | 400      | 1254     | -0.022 | 19       |                   |             | 2.03     | 592      | -5.6  | 49 | 39              | 35 | 24 | 20 | 14 |  |  |
|               |           | 500      | 1568     | -0.035 | 22       |                   |             | 2.54     | 740      | -8.7  | 48 | 42              | 38 | 29 | 23 | 18 |  |  |
|               |           | 600      | 1882     | -0.051 | 25       |                   |             | 3.05     | 888      | -12.6 | 48 | 44              | 41 | 32 | 27 | 21 |  |  |
|               |           | 800      | 2509     | -0.090 | 30       |                   |             | 4.06     | 1184     | -22.4 | 47 | 48              | 45 | 38 | 32 | 26 |  |  |
|               |           | 900      | 2822     | -0.114 | 31       |                   |             | 4.57     | 1332     | -28.3 | 47 | 50              | 47 | 40 | 34 | 28 |  |  |
|               |           | 1000     | 3136     | -0.141 | 33       |                   |             | 5.08     | 1480     | -35.0 | 47 | 51              | 48 | 42 | 35 | 30 |  |  |
|               |           | 1100     | 3449     | -0.170 | 35       |                   |             | 5.59     | 1628     | -42.3 | 46 | 53              | 50 | 44 | 37 | 31 |  |  |
| 36<br>x<br>14 | 3.50      | 200      | 649      | -0.006 | -        | 91.4<br>x<br>35.6 | 0.33        | 1.02     | 306      | -1.4  | 50 | 30              | 24 | 11 | -  | -  |  |  |
|               |           | 300      | 973      | -0.013 | 15       |                   |             | 1.52     | 459      | -3.1  | 50 | 35              | 31 | 19 | 15 | -  |  |  |
|               |           | 400      | 1297     | -0.022 | 19       |                   |             | 2.03     | 612      | -5.6  | 49 | 39              | 35 | 25 | 20 | 14 |  |  |
|               |           | 500      | 1622     | -0.035 | 22       |                   |             | 2.54     | 765      | -8.7  | 48 | 42              | 38 | 29 | 24 | 18 |  |  |
|               |           | 600      | 1946     | -0.051 | 25       |                   |             | 3.05     | 918      | -12.6 | 48 | 45              | 41 | 32 | 27 | 21 |  |  |
|               |           | 800      | 2595     | -0.090 | 30       |                   |             | 4.06     | 1225     | -22.4 | 47 | 48              | 45 | 38 | 32 | 26 |  |  |
|               |           | 900      | 2919     | -0.114 | 32       |                   |             | 4.57     | 1378     | -28.3 | 47 | 50              | 47 | 40 | 34 | 28 |  |  |
|               |           | 1000     | 3243     | -0.141 | 33       |                   |             | 5.08     | 1531     | -35.0 | 47 | 51              | 48 | 42 | 36 | 30 |  |  |
|               |           | 1100     | 3568     | -0.170 | 35       |                   |             | 5.59     | 1684     | -42.3 | 47 | 53              | 50 | 44 | 37 | 32 |  |  |
| 24<br>x<br>22 | 3.67      | 200      | 686      | -0.006 | -        | 61.0<br>x<br>55.9 | 0.34        | 1.02     | 324      | -1.4  | 51 | 30              | 25 | 12 | -  | -  |  |  |
|               |           | 300      | 1029     | -0.013 | 15       |                   |             | 1.52     | 486      | -3.1  | 50 | 36              | 31 | 19 | 15 | -  |  |  |
|               |           | 400      | 1372     | -0.022 | 19       |                   |             | 2.03     | 648      | -5.6  | 49 | 39              | 35 | 25 | 20 | 14 |  |  |
|               |           | 500      | 1715     | -0.035 | 23       |                   |             | 2.54     | 810      | -8.7  | 49 | 42              | 38 | 29 | 24 | 18 |  |  |
|               |           | 600      | 2059     | -0.051 | 26       |                   |             | 3.05     | 972      | -12.6 | 48 | 45              | 41 | 32 | 27 | 21 |  |  |
|               |           | 800      | 2745     | -0.090 | 30       |                   |             | 4.06     | 1295     | -22.4 | 48 | 49              | 45 | 38 | 32 | 26 |  |  |
|               |           | 900      | 3088     | -0.114 | 32       |                   |             | 4.57     | 1457     | -28.3 | 47 | 50              | 47 | 40 | 34 | 28 |  |  |
|               |           | 1000     | 3431     | -0.141 | 33       |                   |             | 5.08     | 1619     | -35.0 | 47 | 52              | 49 | 42 | 36 | 30 |  |  |
|               |           | 1100     | 3774     | -0.170 | 35       |                   |             | 5.59     | 1781     | -42.3 | 47 | 53              | 50 | 44 | 37 | 32 |  |  |

NOTE: See notes and correction factors on page P1-82.

### PERFORMANCE DATA

| IP DATA       |           |          |          |        | SOUND | METRIC DATA        |           |          |          |       | OCTAVE BAND, dB |    |    |    |    |    |  |
|---------------|-----------|----------|----------|--------|-------|--------------------|-----------|----------|----------|-------|-----------------|----|----|----|----|----|--|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     |       | NOM DUCT           | DUCT AREA | NECK VEL | AIR FLOW | Ps    | OCTAVE BAND, dB |    |    |    |    |    |  |
| in            | sq ft     | fpm      | cfm      | in wg  |       | cm                 | sq m      | m/s      | l/s      | Pa    | 2               | 3  | 4  | 5  | 6  | 7  |  |
| 30<br>x<br>18 | 3.75      | 200      | 701      | -0.006 | -     | 76.2<br>x<br>45.7  | 0.35      | 1.02     | 331      | -1.4  | 51              | 30 | 25 | 12 | -  | -  |  |
|               |           | 300      | 1051     | -0.013 | 15    |                    |           | 1.52     | 496      | -3.1  | 50              | 36 | 31 | 19 | 15 | -  |  |
|               |           | 400      | 1402     | -0.022 | 19    |                    |           | 2.03     | 661      | -5.6  | 49              | 40 | 35 | 25 | 20 | 14 |  |
|               |           | 500      | 1752     | -0.035 | 23    |                    |           | 2.54     | 827      | -8.7  | 49              | 42 | 38 | 29 | 24 | 18 |  |
|               |           | 600      | 2102     | -0.051 | 26    |                    |           | 3.05     | 992      | -12.6 | 48              | 45 | 41 | 33 | 27 | 21 |  |
|               |           | 800      | 2803     | -0.090 | 30    |                    |           | 4.06     | 1323     | -22.4 | 48              | 49 | 45 | 38 | 32 | 26 |  |
|               |           | 900      | 3154     | -0.114 | 32    |                    |           | 4.57     | 1488     | -28.3 | 47              | 50 | 47 | 40 | 34 | 28 |  |
|               |           | 1000     | 3504     | -0.141 | 34    |                    |           | 5.08     | 1654     | -35.0 | 47              | 52 | 49 | 42 | 36 | 30 |  |
|               |           | 1100     | 3854     | -0.170 | 35    |                    |           | 5.59     | 1819     | -42.3 | 47              | 53 | 50 | 44 | 38 | 32 |  |
| 36<br>x<br>16 | 4.00      | 200      | 747      | -0.006 | -     | 91.4<br>x<br>40.6  | 0.37      | 1.02     | 352      | -1.4  | 51              | 31 | 25 | 12 | -  | -  |  |
|               |           | 300      | 1120     | -0.013 | 15    |                    |           | 1.52     | 529      | -3.1  | 50              | 36 | 31 | 20 | 15 | -  |  |
|               |           | 400      | 1493     | -0.022 | 20    |                    |           | 2.03     | 705      | -5.6  | 49              | 40 | 35 | 25 | 20 | 15 |  |
|               |           | 500      | 1867     | -0.035 | 23    |                    |           | 2.54     | 881      | -8.7  | 49              | 43 | 39 | 29 | 24 | 18 |  |
|               |           | 600      | 2240     | -0.051 | 26    |                    |           | 3.05     | 1057     | -12.6 | 49              | 45 | 41 | 33 | 27 | 22 |  |
|               |           | 800      | 2986     | -0.090 | 30    |                    |           | 4.06     | 1409     | -22.4 | 48              | 49 | 46 | 38 | 32 | 27 |  |
|               |           | 900      | 3360     | -0.114 | 32    |                    |           | 4.57     | 1586     | -28.3 | 48              | 51 | 47 | 40 | 34 | 29 |  |
|               |           | 1000     | 3733     | -0.141 | 34    |                    |           | 5.08     | 1762     | -35.0 | 47              | 52 | 49 | 42 | 36 | 31 |  |
|               |           | 1100     | 4106     | -0.170 | 35    |                    |           | 5.59     | 1938     | -42.3 | 47              | 53 | 50 | 44 | 38 | 32 |  |
| 36<br>x<br>18 | 4.50      | 200      | 845      | -0.006 | -     | 91.4<br>x<br>45.7  | 0.42      | 1.02     | 399      | -1.4  | 52              | 31 | 26 | 13 | -  | -  |  |
|               |           | 300      | 1267     | -0.013 | 16    |                    |           | 1.52     | 598      | -3.1  | 51              | 36 | 32 | 20 | 16 | -  |  |
|               |           | 400      | 1689     | -0.022 | 20    |                    |           | 2.03     | 797      | -5.6  | 50              | 40 | 36 | 26 | 21 | 15 |  |
|               |           | 500      | 2111     | -0.035 | 24    |                    |           | 2.54     | 996      | -8.7  | 49              | 43 | 39 | 30 | 25 | 19 |  |
|               |           | 600      | 2534     | -0.051 | 26    |                    |           | 3.05     | 1196     | -12.6 | 49              | 46 | 42 | 33 | 28 | 22 |  |
|               |           | 800      | 3378     | -0.090 | 31    |                    |           | 4.06     | 1594     | -22.4 | 48              | 50 | 46 | 39 | 33 | 27 |  |
|               |           | 900      | 3800     | -0.114 | 33    |                    |           | 4.57     | 1794     | -28.3 | 48              | 51 | 48 | 41 | 35 | 29 |  |
|               |           | 1000     | 4223     | -0.141 | 34    |                    |           | 5.08     | 1993     | -35.0 | 48              | 53 | 50 | 43 | 37 | 31 |  |
|               |           | 1100     | 4645     | -0.170 | 36    |                    |           | 5.59     | 2192     | -42.3 | 48              | 54 | 51 | 45 | 38 | 33 |  |
| 30<br>x<br>24 | 5.00      | 200      | 945      | -0.006 | -     | 76.2<br>x<br>61.0  | 0.46      | 1.02     | 446      | -1.4  | 52              | 32 | 26 | 13 | -  | -  |  |
|               |           | 300      | 1417     | -0.013 | 16    |                    |           | 1.52     | 669      | -3.1  | 51              | 37 | 32 | 21 | 16 | 11 |  |
|               |           | 400      | 1889     | -0.022 | 21    |                    |           | 2.03     | 892      | -5.6  | 50              | 41 | 36 | 26 | 21 | 16 |  |
|               |           | 500      | 2361     | -0.035 | 24    |                    |           | 2.54     | 1114     | -8.7  | 50              | 44 | 40 | 30 | 25 | 19 |  |
|               |           | 600      | 2834     | -0.051 | 27    |                    |           | 3.05     | 1337     | -12.6 | 50              | 46 | 42 | 34 | 28 | 23 |  |
|               |           | 800      | 3778     | -0.090 | 31    |                    |           | 4.06     | 1783     | -22.4 | 49              | 50 | 47 | 39 | 33 | 28 |  |
|               |           | 900      | 4250     | -0.114 | 33    |                    |           | 4.57     | 2006     | -28.3 | 49              | 52 | 48 | 41 | 35 | 30 |  |
|               |           | 1000     | 4723     | -0.141 | 35    |                    |           | 5.08     | 2229     | -35.0 | 48              | 53 | 50 | 43 | 37 | 32 |  |
|               |           | 1100     | 5195     | -0.170 | 36    |                    |           | 5.59     | 2452     | -42.3 | 48              | 54 | 51 | 45 | 39 | 33 |  |
| 42<br>x<br>18 | 5.25      | 200      | 988      | -0.006 | -     | 106.7<br>x<br>45.7 | 0.49      | 1.02     | 466      | -1.4  | 47              | 27 | 21 | -  | -  | -  |  |
|               |           | 300      | 1482     | -0.013 | 16    |                    |           | 1.52     | 700      | -3.1  | 46              | 32 | 27 | 16 | 12 | -  |  |
|               |           | 400      | 1977     | -0.022 | 21    |                    |           | 2.03     | 933      | -5.6  | 46              | 36 | 32 | 21 | 16 | 11 |  |
|               |           | 500      | 2471     | -0.035 | 24    |                    |           | 2.54     | 1166     | -8.7  | 45              | 39 | 35 | 25 | 20 | 15 |  |
|               |           | 600      | 2965     | -0.051 | 27    |                    |           | 3.05     | 1399     | -12.6 | 45              | 41 | 38 | 29 | 23 | 18 |  |
|               |           | 800      | 3953     | -0.090 | 32    |                    |           | 4.06     | 1866     | -22.4 | 44              | 45 | 42 | 34 | 28 | 23 |  |
|               |           | 900      | 4447     | -0.114 | 33    |                    |           | 4.57     | 2099     | -28.3 | 44              | 47 | 44 | 37 | 30 | 25 |  |
|               |           | 1000     | 4941     | -0.141 | 35    |                    |           | 5.08     | 2332     | -35.0 | 43              | 48 | 45 | 39 | 32 | 27 |  |
|               |           | 1100     | 5436     | -0.170 | 37    |                    |           | 5.59     | 2565     | -42.3 | 43              | 49 | 47 | 40 | 34 | 28 |  |
| 28<br>x<br>28 | 5.44      | 200      | 1031     | -0.006 | -     | 71.1<br>x<br>71.1  | 0.51      | 1.02     | 487      | -1.4  | 47              | 27 | 21 | -  | -  | -  |  |
|               |           | 300      | 1547     | -0.013 | 17    |                    |           | 1.52     | 730      | -3.1  | 47              | 32 | 27 | 16 | 12 | -  |  |
|               |           | 400      | 2063     | -0.022 | 21    |                    |           | 2.03     | 973      | -5.6  | 46              | 36 | 32 | 22 | 17 | 11 |  |
|               |           | 500      | 2578     | -0.035 | 24    |                    |           | 2.54     | 1217     | -8.7  | 45              | 39 | 35 | 26 | 21 | 15 |  |
|               |           | 600      | 3094     | -0.051 | 27    |                    |           | 3.05     | 1460     | -12.6 | 45              | 42 | 38 | 29 | 24 | 18 |  |
|               |           | 800      | 4125     | -0.090 | 32    |                    |           | 4.06     | 1947     | -22.4 | 44              | 45 | 42 | 35 | 29 | 23 |  |
|               |           | 900      | 4641     | -0.114 | 34    |                    |           | 4.57     | 2190     | -28.3 | 44              | 47 | 44 | 37 | 31 | 25 |  |
|               |           | 1000     | 5157     | -0.141 | 35    |                    |           | 5.08     | 2434     | -35.0 | 44              | 48 | 45 | 39 | 33 | 27 |  |
|               |           | 1100     | 5672     | -0.170 | 37    |                    |           | 5.59     | 2677     | -42.3 | 44              | 50 | 47 | 41 | 34 | 29 |  |

NOTE: See notes and correction factors on page P1-82.

# 9S80HF

Stainless Steel Return Grille, Single Deflection, Hinged



## PERFORMANCE DATA

|               |           | IP DATA  |          |        |          | SOUND              | METRIC DATA |          |          |       |    | OCTAVE BAND, dB |    |    |    |    |  |  |
|---------------|-----------|----------|----------|--------|----------|--------------------|-------------|----------|----------|-------|----|-----------------|----|----|----|----|--|--|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     | NOM DUCT |                    | DUCT AREA   | NECK VEL | AIR FLOW | Ps    | 2  | 3               | 4  | 5  | 6  | 7  |  |  |
| in            | sq ft     | fpm      | cfm      | in wg  | NC       | cm                 | sq m        | m/s      | l/s      | Pa    |    |                 |    |    |    |    |  |  |
| 30<br>x<br>28 | 5.83      | 200      | 1107     | -0.006 | 11       | 76.2<br>x<br>71.1  | 0.54        | 1.02     | 522      | -1.4  | 53 | 32              | 27 | 14 | -  | -  |  |  |
|               |           | 300      | 1661     | -0.013 | 17       |                    |             | 1.52     | 784      | -3.1  | 52 | 38              | 33 | 21 | 17 | 11 |  |  |
|               |           | 400      | 2214     | -0.022 | 21       |                    |             | 2.03     | 1045     | -5.6  | 51 | 41              | 37 | 27 | 22 | 16 |  |  |
|               |           | 600      | 3321     | -0.051 | 28       |                    |             | 3.05     | 1567     | -12.6 | 50 | 47              | 43 | 34 | 29 | 23 |  |  |
|               |           | 700      | 3875     | -0.069 | 30       |                    |             | 3.56     | 1829     | -17.1 | 50 | 49              | 45 | 37 | 32 | 26 |  |  |
|               |           | 800      | 4428     | -0.090 | 32       |                    |             | 4.06     | 2090     | -22.4 | 50 | 51              | 47 | 40 | 34 | 28 |  |  |
|               |           | 900      | 4982     | -0.114 | 34       |                    |             | 4.57     | 2351     | -28.3 | 49 | 52              | 49 | 42 | 36 | 30 |  |  |
|               |           | 1000     | 5535     | -0.141 | 36       |                    |             | 5.08     | 2612     | -35.0 | 49 | 54              | 51 | 44 | 38 | 32 |  |  |
|               |           | 1100     | 6089     | -0.170 | 37       |                    |             | 5.59     | 2874     | -42.3 | 49 | 55              | 52 | 46 | 39 | 34 |  |  |
| 36<br>x<br>24 | 6.00      | 200      | 1138     | -0.006 | 11       | 91.4<br>x<br>61.0  | 0.56        | 1.02     | 537      | -1.4  | 53 | 32              | 27 | 14 | -  | -  |  |  |
|               |           | 300      | 1707     | -0.013 | 17       |                    |             | 1.52     | 806      | -3.1  | 52 | 38              | 33 | 22 | 17 | 11 |  |  |
|               |           | 400      | 2277     | -0.022 | 21       |                    |             | 2.03     | 1074     | -5.6  | 51 | 42              | 37 | 27 | 22 | 16 |  |  |
|               |           | 600      | 3415     | -0.051 | 28       |                    |             | 3.05     | 1612     | -12.6 | 50 | 47              | 43 | 35 | 29 | 23 |  |  |
|               |           | 700      | 3984     | -0.069 | 30       |                    |             | 3.56     | 1880     | -17.1 | 50 | 49              | 46 | 38 | 32 | 26 |  |  |
|               |           | 800      | 4553     | -0.090 | 32       |                    |             | 4.06     | 2149     | -22.4 | 50 | 51              | 48 | 40 | 34 | 28 |  |  |
|               |           | 900      | 5122     | -0.114 | 34       |                    |             | 4.57     | 2417     | -28.3 | 49 | 52              | 49 | 42 | 36 | 30 |  |  |
|               |           | 1000     | 5691     | -0.141 | 36       |                    |             | 5.08     | 2686     | -35.0 | 49 | 54              | 51 | 44 | 38 | 32 |  |  |
|               |           | 1100     | 6261     | -0.170 | 37       |                    |             | 5.59     | 2955     | -42.3 | 49 | 55              | 52 | 46 | 40 | 34 |  |  |
| 30<br>x<br>30 | 6.25      | 200      | 1188     | -0.006 | 11       | 76.2<br>x<br>76.2  | 0.58        | 1.02     | 561      | -1.4  | 53 | 32              | 27 | 14 | -  | -  |  |  |
|               |           | 300      | 1782     | -0.013 | 17       |                    |             | 1.52     | 841      | -3.1  | 52 | 38              | 33 | 22 | 17 | 12 |  |  |
|               |           | 400      | 2377     | -0.022 | 22       |                    |             | 2.03     | 1122     | -5.6  | 51 | 42              | 37 | 27 | 22 | 17 |  |  |
|               |           | 600      | 3565     | -0.051 | 28       |                    |             | 3.05     | 1682     | -12.6 | 51 | 47              | 43 | 35 | 29 | 24 |  |  |
|               |           | 700      | 4159     | -0.069 | 30       |                    |             | 3.56     | 1963     | -17.1 | 50 | 49              | 46 | 38 | 32 | 26 |  |  |
|               |           | 800      | 4753     | -0.090 | 32       |                    |             | 4.06     | 2243     | -22.4 | 50 | 51              | 48 | 40 | 34 | 29 |  |  |
|               |           | 900      | 5347     | -0.114 | 34       |                    |             | 4.57     | 2524     | -28.3 | 50 | 53              | 49 | 42 | 36 | 31 |  |  |
|               |           | 1000     | 5941     | -0.141 | 36       |                    |             | 5.08     | 2804     | -35.0 | 49 | 54              | 51 | 44 | 38 | 33 |  |  |
|               |           | 1100     | 6536     | -0.170 | 37       |                    |             | 5.59     | 3084     | -42.3 | 49 | 55              | 52 | 46 | 40 | 34 |  |  |
| 36<br>x<br>28 | 7.00      | 200      | 1334     | -0.006 | 11       | 91.4<br>x<br>71.1  | 0.65        | 1.02     | 630      | -1.4  | 54 | 33              | 28 | 15 | 11 | -  |  |  |
|               |           | 300      | 2001     | -0.013 | 18       |                    |             | 1.52     | 944      | -3.1  | 53 | 38              | 34 | 22 | 18 | 12 |  |  |
|               |           | 400      | 2668     | -0.022 | 22       |                    |             | 2.03     | 1259     | -5.6  | 52 | 42              | 38 | 28 | 23 | 17 |  |  |
|               |           | 600      | 4002     | -0.051 | 28       |                    |             | 3.05     | 1889     | -12.6 | 51 | 48              | 44 | 35 | 30 | 24 |  |  |
|               |           | 700      | 4669     | -0.069 | 31       |                    |             | 3.56     | 2204     | -17.1 | 51 | 50              | 46 | 38 | 32 | 27 |  |  |
|               |           | 800      | 5336     | -0.090 | 33       |                    |             | 4.06     | 2519     | -22.4 | 50 | 51              | 48 | 41 | 35 | 29 |  |  |
|               |           | 900      | 6004     | -0.114 | 35       |                    |             | 4.57     | 2833     | -28.3 | 50 | 53              | 50 | 43 | 37 | 31 |  |  |
|               |           | 1000     | 6671     | -0.141 | 36       |                    |             | 5.08     | 3148     | -35.0 | 50 | 54              | 52 | 45 | 39 | 33 |  |  |
|               |           | 1100     | 7338     | -0.170 | 38       |                    |             | 5.59     | 3463     | -42.3 | 50 | 56              | 53 | 47 | 40 | 35 |  |  |
| 46<br>x<br>22 | 7.03      | 200      | 1336     | -0.006 | 11       | 116.8<br>x<br>55.9 | 0.65        | 1.02     | 630      | -1.4  | 54 | 33              | 28 | 15 | 11 | -  |  |  |
|               |           | 300      | 2003     | -0.013 | 18       |                    |             | 1.52     | 945      | -3.1  | 53 | 38              | 34 | 22 | 18 | 12 |  |  |
|               |           | 400      | 2671     | -0.022 | 22       |                    |             | 2.03     | 1261     | -5.6  | 52 | 42              | 38 | 28 | 23 | 17 |  |  |
|               |           | 600      | 4007     | -0.051 | 28       |                    |             | 3.05     | 1891     | -12.6 | 51 | 48              | 44 | 35 | 30 | 24 |  |  |
|               |           | 700      | 4674     | -0.069 | 31       |                    |             | 3.56     | 2206     | -17.1 | 51 | 50              | 46 | 38 | 32 | 27 |  |  |
|               |           | 800      | 5342     | -0.090 | 33       |                    |             | 4.06     | 2521     | -22.4 | 50 | 51              | 48 | 41 | 35 | 29 |  |  |
|               |           | 900      | 6010     | -0.114 | 35       |                    |             | 4.57     | 2836     | -28.3 | 50 | 53              | 50 | 43 | 37 | 31 |  |  |
|               |           | 1000     | 6678     | -0.141 | 36       |                    |             | 5.08     | 3151     | -35.0 | 50 | 54              | 52 | 45 | 39 | 33 |  |  |
|               |           | 1100     | 7345     | -0.170 | 38       |                    |             | 5.59     | 3467     | -42.3 | 50 | 56              | 53 | 47 | 40 | 35 |  |  |
| 32<br>x<br>32 | 7.11      | 200      | 1356     | -0.006 | 11       | 81.3<br>x<br>81.3  | 0.66        | 1.02     | 640      | -1.4  | 54 | 33              | 28 | 15 | 11 | -  |  |  |
|               |           | 300      | 2035     | -0.013 | 18       |                    |             | 1.52     | 960      | -3.1  | 53 | 38              | 34 | 22 | 18 | 12 |  |  |
|               |           | 400      | 2713     | -0.022 | 22       |                    |             | 2.03     | 1280     | -5.6  | 52 | 42              | 38 | 28 | 23 | 17 |  |  |
|               |           | 600      | 4069     | -0.051 | 28       |                    |             | 3.05     | 1920     | -12.6 | 51 | 48              | 44 | 35 | 30 | 24 |  |  |
|               |           | 700      | 4747     | -0.069 | 31       |                    |             | 3.56     | 2240     | -17.1 | 51 | 50              | 46 | 38 | 33 | 27 |  |  |
|               |           | 800      | 5425     | -0.090 | 33       |                    |             | 4.06     | 2560     | -22.4 | 50 | 52              | 48 | 41 | 35 | 29 |  |  |
|               |           | 900      | 6104     | -0.114 | 35       |                    |             | 4.57     | 2881     | -28.3 | 50 | 53              | 50 | 43 | 37 | 31 |  |  |
|               |           | 1000     | 6782     | -0.141 | 36       |                    |             | 5.08     | 3201     | -35.0 | 50 | 55              | 52 | 45 | 39 | 33 |  |  |
|               |           | 1100     | 7460     | -0.170 | 38       |                    |             | 5.59     | 3521     | -42.3 | 50 | 56              | 53 | 47 | 40 | 35 |  |  |

NOTE: See notes and correction factors on page P1-82.



### PERFORMANCE DATA

| IP DATA  |           |          |          |        | SOUND | METRIC DATA  |           |          |          |       | OCTAVE BAND, dB |    |    |    |    |    |   |
|----------|-----------|----------|----------|--------|-------|--------------|-----------|----------|----------|-------|-----------------|----|----|----|----|----|---|
| NOM DUCT | DUCT AREA | NECK VEL | AIR FLOW | Ps     |       | NOM DUCT     | DUCT AREA | NECK VEL | AIR FLOW | Ps    | OCTAVE BAND, dB |    |    |    |    |    |   |
| in       | sq ft     | fpm      | cfm      | in wg  |       | NC           | cm        | sq m     | m/s      | l/s   | Pa              | 2  | 3  | 4  | 5  | 6  | 7 |
| 36 x 30  | 7.50      | 200      | 1432     | -0.006 | 12    | 91.4 x 76.2  | 0.70      | 1.02     | 676      | -1.4  | 54              | 33 | 28 | 15 | 11 | -  |   |
|          |           | 300      | 2148     | -0.013 | 18    |              |           | 1.52     | 1014     | -3.1  | 53              | 39 | 34 | 22 | 18 | 12 |   |
|          |           | 400      | 2864     | -0.022 | 22    |              |           | 2.03     | 1352     | -5.6  | 52              | 43 | 38 | 28 | 23 | 17 |   |
|          |           | 600      | 4296     | -0.051 | 29    |              |           | 3.05     | 2028     | -12.6 | 51              | 48 | 44 | 36 | 30 | 24 |   |
|          |           | 700      | 5012     | -0.069 | 31    |              |           | 3.56     | 2365     | -17.1 | 51              | 50 | 46 | 38 | 33 | 27 |   |
|          |           | 800      | 5728     | -0.090 | 33    |              |           | 4.06     | 2703     | -22.4 | 51              | 52 | 48 | 41 | 35 | 29 |   |
|          |           | 900      | 6444     | -0.114 | 35    |              |           | 4.57     | 3041     | -28.3 | 50              | 53 | 50 | 43 | 37 | 31 |   |
|          |           | 1000     | 7160     | -0.141 | 37    |              |           | 5.08     | 3379     | -35.0 | 50              | 55 | 52 | 45 | 39 | 33 |   |
|          |           | 1100     | 7876     | -0.170 | 38    |              |           | 5.59     | 3717     | -42.3 | 50              | 56 | 53 | 47 | 41 | 35 |   |
| 36 x 32  | 8.00      | 200      | 1530     | -0.006 | 12    | 91.4 x 81.3  | 0.74      | 1.02     | 722      | -1.4  | 47              | 27 | 21 | -  | -  | -  |   |
|          |           | 300      | 2295     | -0.013 | 18    |              |           | 1.52     | 1083     | -3.1  | 46              | 32 | 27 | 16 | 12 | -  |   |
|          |           | 400      | 3060     | -0.022 | 23    |              |           | 2.03     | 1444     | -5.6  | 46              | 36 | 32 | 21 | 16 | 11 |   |
|          |           | 600      | 4590     | -0.051 | 29    |              |           | 3.05     | 2166     | -12.6 | 45              | 41 | 38 | 29 | 23 | 18 |   |
|          |           | 700      | 5355     | -0.069 | 31    |              |           | 3.56     | 2527     | -17.1 | 44              | 43 | 40 | 32 | 26 | 20 |   |
|          |           | 800      | 6120     | -0.090 | 33    |              |           | 4.06     | 2888     | -22.4 | 44              | 45 | 42 | 34 | 28 | 23 |   |
|          |           | 900      | 6885     | -0.114 | 35    |              |           | 4.57     | 3249     | -28.3 | 44              | 47 | 44 | 37 | 30 | 25 |   |
|          |           | 1000     | 7650     | -0.141 | 37    |              |           | 5.08     | 3610     | -35.0 | 43              | 48 | 45 | 39 | 32 | 27 |   |
|          |           | 1100     | 8415     | -0.170 | 38    |              |           | 5.59     | 3971     | -42.3 | 43              | 49 | 47 | 40 | 34 | 28 |   |
| 34 x 34  | 8.03      | 200      | 1536     | -0.006 | 12    | 86.4 x 86.4  | 0.75      | 1.02     | 725      | -1.4  | 47              | 27 | 21 | -  | -  | -  |   |
|          |           | 300      | 2303     | -0.013 | 18    |              |           | 1.52     | 1087     | -3.1  | 47              | 32 | 27 | 16 | 12 | -  |   |
|          |           | 400      | 3071     | -0.022 | 23    |              |           | 2.03     | 1449     | -5.6  | 46              | 36 | 32 | 22 | 17 | 11 |   |
|          |           | 600      | 4607     | -0.051 | 29    |              |           | 3.05     | 2174     | -12.6 | 45              | 42 | 38 | 29 | 24 | 18 |   |
|          |           | 700      | 5374     | -0.069 | 31    |              |           | 3.56     | 2536     | -17.1 | 45              | 44 | 40 | 32 | 26 | 21 |   |
|          |           | 800      | 6142     | -0.090 | 33    |              |           | 4.06     | 2899     | -22.4 | 44              | 45 | 42 | 35 | 29 | 23 |   |
|          |           | 900      | 6910     | -0.114 | 35    |              |           | 4.57     | 3261     | -28.3 | 44              | 47 | 44 | 37 | 31 | 25 |   |
|          |           | 1000     | 7678     | -0.141 | 37    |              |           | 5.08     | 3623     | -35.0 | 44              | 48 | 45 | 39 | 33 | 27 |   |
|          |           | 1100     | 8445     | -0.170 | 38    |              |           | 5.59     | 3986     | -42.3 | 44              | 50 | 47 | 41 | 34 | 29 |   |
| 36 x 34  | 8.50      | 100      | 814      | -0.001 | -     | 91.4 x 86.4  | 0.79      | 0.51     | 384      | -0.3  | 56              | 25 | 18 | -  | -  | -  |   |
|          |           | 200      | 1628     | -0.006 | 12    |              |           | 1.02     | 768      | -1.4  | 54              | 34 | 28 | 15 | 12 | -  |   |
|          |           | 300      | 2442     | -0.013 | 19    |              |           | 1.52     | 1152     | -3.1  | 53              | 39 | 34 | 23 | 19 | 13 |   |
|          |           | 400      | 3256     | -0.022 | 23    |              |           | 2.03     | 1537     | -5.6  | 53              | 43 | 39 | 28 | 24 | 18 |   |
|          |           | 500      | 4070     | -0.035 | 26    |              |           | 2.54     | 1921     | -8.7  | 52              | 46 | 42 | 33 | 28 | 22 |   |
|          |           | 600      | 4884     | -0.051 | 29    |              |           | 3.05     | 2305     | -12.6 | 52              | 48 | 45 | 36 | 31 | 25 |   |
|          |           | 800      | 6511     | -0.090 | 34    |              |           | 4.06     | 3073     | -22.4 | 51              | 52 | 49 | 42 | 36 | 30 |   |
|          |           | 1000     | 8139     | -0.141 | 37    |              |           | 5.08     | 3841     | -35.0 | 51              | 55 | 52 | 46 | 39 | 34 |   |
|          |           | 1100     | 8953     | -0.170 | 39    |              |           | 5.59     | 4225     | -42.3 | 50              | 57 | 54 | 48 | 41 | 36 |   |
| 42 x 30  | 8.75      | 100      | 838      | -0.001 | -     | 106.7 x 76.2 | 0.81      | 0.51     | 395      | -0.3  | 56              | 25 | 18 | -  | -  | -  |   |
|          |           | 200      | 1676     | -0.006 | 12    |              |           | 1.02     | 791      | -1.4  | 55              | 34 | 28 | 15 | 12 | -  |   |
|          |           | 300      | 2514     | -0.013 | 19    |              |           | 1.52     | 1186     | -3.1  | 54              | 39 | 35 | 23 | 19 | 13 |   |
|          |           | 400      | 3352     | -0.022 | 23    |              |           | 2.03     | 1582     | -5.6  | 53              | 43 | 39 | 29 | 24 | 18 |   |
|          |           | 500      | 4189     | -0.035 | 27    |              |           | 2.54     | 1977     | -8.7  | 52              | 46 | 42 | 33 | 28 | 22 |   |
|          |           | 600      | 5027     | -0.051 | 29    |              |           | 3.05     | 2373     | -12.6 | 52              | 49 | 45 | 36 | 31 | 25 |   |
|          |           | 800      | 6703     | -0.090 | 34    |              |           | 4.06     | 3164     | -22.4 | 51              | 52 | 49 | 42 | 36 | 30 |   |
|          |           | 1000     | 8379     | -0.141 | 37    |              |           | 5.08     | 3954     | -35.0 | 51              | 55 | 52 | 46 | 40 | 34 |   |
|          |           | 1100     | 9217     | -0.170 | 39    |              |           | 5.59     | 4350     | -42.3 | 51              | 57 | 54 | 48 | 41 | 36 |   |
| 36 x 36  | 9.00      | 100      | 863      | -0.001 | -     | 91.4 x 91.4  | 0.84      | 0.51     | 407      | -0.3  | 56              | 25 | 18 | -  | -  | -  |   |
|          |           | 200      | 1726     | -0.006 | 13    |              |           | 1.02     | 814      | -1.4  | 55              | 34 | 29 | 16 | 12 | -  |   |
|          |           | 300      | 2589     | -0.013 | 19    |              |           | 1.52     | 1222     | -3.1  | 54              | 39 | 35 | 23 | 19 | 13 |   |
|          |           | 400      | 3452     | -0.022 | 23    |              |           | 2.03     | 1629     | -5.6  | 53              | 43 | 39 | 29 | 24 | 18 |   |
|          |           | 500      | 4314     | -0.035 | 27    |              |           | 2.54     | 2036     | -8.7  | 53              | 46 | 42 | 33 | 28 | 22 |   |
|          |           | 600      | 5177     | -0.051 | 30    |              |           | 3.05     | 2443     | -12.6 | 52              | 49 | 45 | 36 | 31 | 25 |   |
|          |           | 800      | 6903     | -0.090 | 34    |              |           | 4.06     | 3258     | -22.4 | 51              | 53 | 49 | 42 | 36 | 30 |   |
|          |           | 1000     | 8629     | -0.141 | 37    |              |           | 5.08     | 4072     | -35.0 | 51              | 56 | 53 | 46 | 40 | 34 |   |
|          |           | 1100     | 9492     | -0.170 | 39    |              |           | 5.59     | 4480     | -42.3 | 51              | 57 | 54 | 48 | 41 | 36 |   |

NOTE: See notes and correction factors on page P1-82.

# 9S80HF

Stainless Steel Return Grille, Single Deflection, Hinged



## PERFORMANCE DATA

|               |           | IP DATA  |          |        |          | SOUND               | METRIC DATA |          |          |       |    | OCTAVE BAND, dB |    |    |    |    |  |  |
|---------------|-----------|----------|----------|--------|----------|---------------------|-------------|----------|----------|-------|----|-----------------|----|----|----|----|--|--|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     | NOM DUCT |                     | DUCT AREA   | NECK VEL | AIR FLOW | Ps    |    |                 |    |    |    |    |  |  |
| in            | sq ft     | fpm      | cfm      | in wg  | NC       | cm                  | sq m        | m/s      | l/s      | Pa    | 2  | 3               | 4  | 5  | 6  | 7  |  |  |
| 48<br>x<br>30 | 10.00     | 100      | 960      | -0.001 | -        | 121.9<br>x<br>76.2  | 0.93        | 0.51     | 453      | -0.3  | 57 | 25              | 19 | -  | -  | -  |  |  |
|               |           | 200      | 1920     | -0.006 | 13       |                     |             | 1.02     | 906      | -1.4  | 55 | 35              | 29 | 16 | 12 | -  |  |  |
|               |           | 300      | 2879     | -0.013 | 19       |                     |             | 1.52     | 1359     | -3.1  | 54 | 40              | 35 | 24 | 19 | 14 |  |  |
|               |           | 400      | 3839     | -0.022 | 24       |                     |             | 2.03     | 1812     | -5.6  | 53 | 44              | 39 | 29 | 24 | 19 |  |  |
|               |           | 500      | 4799     | -0.035 | 27       |                     |             | 2.54     | 2265     | -8.7  | 53 | 47              | 43 | 33 | 28 | 22 |  |  |
|               |           | 600      | 5759     | -0.051 | 30       |                     |             | 3.05     | 2718     | -12.6 | 53 | 49              | 45 | 37 | 31 | 26 |  |  |
|               |           | 800      | 7678     | -0.090 | 34       |                     |             | 4.06     | 3624     | -22.4 | 52 | 53              | 50 | 42 | 36 | 31 |  |  |
|               |           | 1000     | 9598     | -0.141 | 38       |                     |             | 5.08     | 4530     | -35.0 | 51 | 56              | 53 | 46 | 40 | 35 |  |  |
|               |           | 1100     | 10557    | -0.170 | 39       |                     |             | 5.59     | 4983     | -42.3 | 51 | 57              | 54 | 48 | 42 | 36 |  |  |
| 38<br>x<br>38 | 10.03     | 100      | 964      | -0.001 | -        | 96.5<br>x<br>96.5   | 0.93        | 0.51     | 455      | -0.3  | 57 | 25              | 19 | -  | -  | -  |  |  |
|               |           | 200      | 1927     | -0.006 | 13       |                     |             | 1.02     | 910      | -1.4  | 55 | 35              | 29 | 16 | 12 | -  |  |  |
|               |           | 300      | 2891     | -0.013 | 19       |                     |             | 1.52     | 1364     | -3.1  | 54 | 40              | 35 | 24 | 19 | 14 |  |  |
|               |           | 400      | 3854     | -0.022 | 24       |                     |             | 2.03     | 1819     | -5.6  | 53 | 44              | 39 | 29 | 24 | 19 |  |  |
|               |           | 500      | 4818     | -0.035 | 27       |                     |             | 2.54     | 2274     | -8.7  | 53 | 47              | 43 | 33 | 28 | 22 |  |  |
|               |           | 600      | 5782     | -0.051 | 30       |                     |             | 3.05     | 2729     | -12.6 | 53 | 49              | 45 | 37 | 31 | 26 |  |  |
|               |           | 800      | 7709     | -0.090 | 34       |                     |             | 4.06     | 3638     | -22.4 | 52 | 53              | 50 | 42 | 36 | 31 |  |  |
|               |           | 1000     | 9636     | -0.141 | 38       |                     |             | 5.08     | 4548     | -35.0 | 51 | 56              | 53 | 46 | 40 | 35 |  |  |
|               |           | 1100     | 10599    | -0.170 | 39       |                     |             | 5.59     | 5002     | -42.3 | 51 | 57              | 54 | 48 | 42 | 36 |  |  |
| 42<br>x<br>36 | 10.50     | 100      | 1010     | -0.001 | -        | 106.7<br>x<br>91.4  | 0.98        | 0.51     | 477      | -0.3  | 57 | 25              | 19 | -  | -  | -  |  |  |
|               |           | 200      | 2020     | -0.006 | 13       |                     |             | 1.02     | 953      | -1.4  | 55 | 35              | 29 | 16 | 13 | -  |  |  |
|               |           | 300      | 3029     | -0.013 | 19       |                     |             | 1.52     | 1430     | -3.1  | 54 | 40              | 35 | 24 | 20 | 14 |  |  |
|               |           | 400      | 4039     | -0.022 | 24       |                     |             | 2.03     | 1906     | -5.6  | 54 | 44              | 40 | 29 | 25 | 19 |  |  |
|               |           | 500      | 5049     | -0.035 | 27       |                     |             | 2.54     | 2383     | -8.7  | 53 | 47              | 43 | 34 | 28 | 23 |  |  |
|               |           | 600      | 6059     | -0.051 | 30       |                     |             | 3.05     | 2859     | -12.6 | 53 | 49              | 46 | 37 | 32 | 26 |  |  |
|               |           | 800      | 8078     | -0.090 | 35       |                     |             | 4.06     | 3812     | -22.4 | 52 | 53              | 50 | 42 | 37 | 31 |  |  |
|               |           | 1000     | 10098    | -0.141 | 38       |                     |             | 5.08     | 4766     | -35.0 | 52 | 56              | 53 | 47 | 40 | 35 |  |  |
|               |           | 1100     | 11107    | -0.170 | 40       |                     |             | 5.59     | 5242     | -42.3 | 51 | 57              | 55 | 48 | 42 | 36 |  |  |
| 46<br>x<br>34 | 10.86     | 100      | 1045     | -0.001 | -        | 116.8<br>x<br>86.4  | 1.01        | 0.51     | 493      | -0.3  | 57 | 26              | 19 | -  | -  | -  |  |  |
|               |           | 200      | 2090     | -0.006 | 13       |                     |             | 1.02     | 986      | -1.4  | 55 | 35              | 29 | 16 | 13 | -  |  |  |
|               |           | 300      | 3135     | -0.013 | 20       |                     |             | 1.52     | 1479     | -3.1  | 55 | 40              | 35 | 24 | 20 | 14 |  |  |
|               |           | 400      | 4179     | -0.022 | 24       |                     |             | 2.03     | 1972     | -5.6  | 54 | 44              | 40 | 30 | 25 | 19 |  |  |
|               |           | 500      | 5224     | -0.035 | 28       |                     |             | 2.54     | 2466     | -8.7  | 53 | 47              | 43 | 34 | 29 | 23 |  |  |
|               |           | 600      | 6269     | -0.051 | 30       |                     |             | 3.05     | 2959     | -12.6 | 53 | 50              | 46 | 37 | 32 | 26 |  |  |
|               |           | 800      | 8359     | -0.090 | 35       |                     |             | 4.06     | 3945     | -22.4 | 52 | 53              | 50 | 43 | 37 | 31 |  |  |
|               |           | 1000     | 10448    | -0.141 | 38       |                     |             | 5.08     | 4931     | -35.0 | 52 | 56              | 53 | 47 | 41 | 35 |  |  |
|               |           | 1100     | 11493    | -0.170 | 40       |                     |             | 5.59     | 5424     | -42.3 | 51 | 58              | 55 | 49 | 42 | 37 |  |  |
| 42<br>x<br>38 | 11.08     | 100      | 1067     | -0.001 | -        | 106.7<br>x<br>96.5  | 1.03        | 0.51     | 504      | -0.3  | 49 | 17              | 11 | -  | -  | -  |  |  |
|               |           | 200      | 2134     | -0.006 | 13       |                     |             | 1.02     | 1007     | -1.4  | 47 | 27              | 21 | -  | -  | -  |  |  |
|               |           | 300      | 3201     | -0.013 | 20       |                     |             | 1.52     | 1511     | -3.1  | 46 | 32              | 27 | 16 | 12 | -  |  |  |
|               |           | 400      | 4268     | -0.022 | 24       |                     |             | 2.03     | 2014     | -5.6  | 46 | 36              | 32 | 21 | 16 | 11 |  |  |
|               |           | 500      | 5335     | -0.035 | 28       |                     |             | 2.54     | 2518     | -8.7  | 45 | 39              | 35 | 25 | 20 | 15 |  |  |
|               |           | 600      | 6402     | -0.051 | 30       |                     |             | 3.05     | 3022     | -12.6 | 45 | 41              | 38 | 29 | 23 | 18 |  |  |
|               |           | 800      | 8536     | -0.090 | 35       |                     |             | 4.06     | 4029     | -22.4 | 44 | 45              | 42 | 34 | 28 | 23 |  |  |
|               |           | 1000     | 10671    | -0.141 | 38       |                     |             | 5.08     | 5036     | -35.0 | 43 | 48              | 45 | 39 | 32 | 27 |  |  |
|               |           | 1100     | 11738    | -0.170 | 40       |                     |             | 5.59     | 5540     | -42.3 | 43 | 49              | 47 | 40 | 34 | 28 |  |  |
| 40<br>x<br>40 | 11.11     | 100      | 1070     | -0.001 | -        | 101.6<br>x<br>101.6 | 1.03        | 0.51     | 505      | -0.3  | 49 | 18              | 11 | -  | -  | -  |  |  |
|               |           | 200      | 2140     | -0.006 | 13       |                     |             | 1.02     | 1010     | -1.4  | 47 | 27              | 21 | -  | -  | -  |  |  |
|               |           | 300      | 3210     | -0.013 | 20       |                     |             | 1.52     | 1515     | -3.1  | 47 | 32              | 27 | 16 | 12 | -  |  |  |
|               |           | 400      | 4279     | -0.022 | 24       |                     |             | 2.03     | 2020     | -5.6  | 46 | 36              | 32 | 22 | 17 | 11 |  |  |
|               |           | 500      | 5349     | -0.035 | 28       |                     |             | 2.54     | 2525     | -8.7  | 45 | 39              | 35 | 26 | 21 | 15 |  |  |
|               |           | 600      | 6419     | -0.051 | 30       |                     |             | 3.05     | 3029     | -12.6 | 45 | 42              | 38 | 29 | 24 | 18 |  |  |
|               |           | 800      | 8559     | -0.090 | 35       |                     |             | 4.06     | 4039     | -22.4 | 44 | 45              | 42 | 35 | 29 | 23 |  |  |
|               |           | 1000     | 10698    | -0.141 | 38       |                     |             | 5.08     | 5049     | -35.0 | 44 | 48              | 45 | 39 | 33 | 27 |  |  |
|               |           | 1100     | 11768    | -0.170 | 40       |                     |             | 5.59     | 5554     | -42.3 | 44 | 50              | 47 | 41 | 34 | 29 |  |  |

NOTE: See notes and correction factors on page P1-82.

### PERFORMANCE DATA

| IP DATA       |           |          |          |        | SOUND | METRIC DATA         |           |          |          |       | OCTAVE BAND, dB |    |    |    |    |    |   |
|---------------|-----------|----------|----------|--------|-------|---------------------|-----------|----------|----------|-------|-----------------|----|----|----|----|----|---|
| NOM DUCT      | DUCT AREA | NECK VEL | AIR FLOW | Ps     |       | NOM DUCT            | DUCT AREA | NECK VEL | AIR FLOW | Ps    |                 |    |    |    |    |    |   |
| in            | sq ft     | fpm      | cfm      | in wg  |       | NC                  | cm        | sq m     | m/s      | l/s   | Pa              | 2  | 3  | 4  | 5  | 6  | 7 |
| 48<br>x<br>36 | 12.00     | 100      | 1157     | -0.001 | -     | 121.9<br>x<br>91.4  | 1.11      | 0.51     | 546      | -0.3  | 57              | 26 | 20 | -  | -  | -  |   |
|               |           | 200      | 2313     | -0.006 | 14    |                     |           | 1.02     | 1092     | -1.4  | 56              | 35 | 30 | 17 | 13 | -  |   |
|               |           | 300      | 3470     | -0.013 | 20    |                     |           | 1.52     | 1638     | -3.1  | 55              | 41 | 36 | 25 | 20 | 14 |   |
|               |           | 400      | 4627     | -0.022 | 25    |                     |           | 2.03     | 2183     | -5.6  | 54              | 45 | 40 | 30 | 25 | 19 |   |
|               |           | 500      | 5783     | -0.035 | 28    |                     |           | 2.54     | 2729     | -8.7  | 54              | 48 | 44 | 34 | 29 | 23 |   |
|               |           | 600      | 6940     | -0.051 | 31    |                     |           | 3.05     | 3275     | -12.6 | 53              | 50 | 46 | 38 | 32 | 26 |   |
|               |           | 800      | 9253     | -0.090 | 35    |                     |           | 4.06     | 4367     | -22.4 | 53              | 54 | 51 | 43 | 37 | 31 |   |
|               |           | 1000     | 11566    | -0.141 | 39    |                     |           | 5.08     | 5459     | -35.0 | 52              | 57 | 54 | 47 | 41 | 35 |   |
|               |           | 1100     | 12723    | -0.170 | 40    |                     |           | 5.59     | 6005     | -42.3 | 52              | 58 | 55 | 49 | 43 | 37 |   |
| 42<br>x<br>42 | 12.25     | 100      | 1182     | -0.001 | -     | 106.7<br>x<br>106.7 | 1.14      | 0.51     | 558      | -0.3  | 58              | 26 | 20 | -  | -  | -  |   |
|               |           | 200      | 2363     | -0.006 | 14    |                     |           | 1.02     | 1115     | -1.4  | 56              | 35 | 30 | 17 | 13 | -  |   |
|               |           | 300      | 3545     | -0.013 | 20    |                     |           | 1.52     | 1673     | -3.1  | 55              | 41 | 36 | 25 | 20 | 14 |   |
|               |           | 400      | 4727     | -0.022 | 25    |                     |           | 2.03     | 2231     | -5.6  | 54              | 45 | 40 | 30 | 25 | 19 |   |
|               |           | 500      | 5908     | -0.035 | 28    |                     |           | 2.54     | 2788     | -8.7  | 54              | 48 | 44 | 34 | 29 | 23 |   |
|               |           | 600      | 7090     | -0.051 | 31    |                     |           | 3.05     | 3346     | -12.6 | 53              | 50 | 46 | 38 | 32 | 27 |   |
|               |           | 800      | 9453     | -0.090 | 35    |                     |           | 4.06     | 4461     | -22.4 | 53              | 54 | 51 | 43 | 37 | 32 |   |
|               |           | 1000     | 11816    | -0.141 | 39    |                     |           | 5.08     | 5577     | -35.0 | 52              | 57 | 54 | 47 | 41 | 35 |   |
|               |           | 1100     | 12998    | -0.170 | 40    |                     |           | 5.59     | 6134     | -42.3 | 52              | 58 | 55 | 49 | 43 | 37 |   |
| 44<br>x<br>44 | 13.44     | 100      | 1299     | -0.001 | -     | 111.8<br>x<br>111.8 | 1.25      | 0.51     | 613      | -0.3  | 58              | 27 | 20 | -  | -  | -  |   |
|               |           | 200      | 2598     | -0.006 | 14    |                     |           | 1.02     | 1226     | -1.4  | 56              | 36 | 30 | 17 | 14 | -  |   |
|               |           | 300      | 3897     | -0.013 | 21    |                     |           | 1.52     | 1839     | -3.1  | 55              | 41 | 36 | 25 | 21 | 15 |   |
|               |           | 400      | 5196     | -0.022 | 25    |                     |           | 2.03     | 2452     | -5.6  | 55              | 45 | 41 | 30 | 26 | 20 |   |
|               |           | 500      | 6495     | -0.035 | 28    |                     |           | 2.54     | 3065     | -8.7  | 54              | 48 | 44 | 35 | 29 | 24 |   |
|               |           | 600      | 7794     | -0.051 | 31    |                     |           | 3.05     | 3678     | -12.6 | 54              | 50 | 47 | 38 | 33 | 27 |   |
|               |           | 800      | 10392    | -0.090 | 36    |                     |           | 4.06     | 4904     | -22.4 | 53              | 54 | 51 | 44 | 38 | 32 |   |
|               |           | 1000     | 12990    | -0.141 | 39    |                     |           | 5.08     | 6131     | -35.0 | 53              | 57 | 54 | 48 | 41 | 36 |   |
|               |           | 1100     | 14289    | -0.170 | 41    |                     |           | 5.59     | 6744     | -42.3 | 52              | 59 | 56 | 50 | 43 | 37 |   |
| 48<br>x<br>42 | 14.00     | 100      | 1354     | -0.001 | -     | 121.9<br>x<br>106.7 | 1.30      | 0.51     | 639      | -0.3  | 58              | 27 | 20 | -  | -  | -  |   |
|               |           | 200      | 2707     | -0.006 | 14    |                     |           | 1.02     | 1278     | -1.4  | 57              | 36 | 31 | 18 | 14 | -  |   |
|               |           | 300      | 4061     | -0.013 | 21    |                     |           | 1.52     | 1916     | -3.1  | 56              | 41 | 37 | 25 | 21 | 15 |   |
|               |           | 400      | 5414     | -0.022 | 25    |                     |           | 2.03     | 2555     | -5.6  | 55              | 45 | 41 | 31 | 26 | 20 |   |
|               |           | 500      | 6768     | -0.035 | 29    |                     |           | 2.54     | 3194     | -8.7  | 54              | 48 | 44 | 35 | 30 | 24 |   |
|               |           | 600      | 8121     | -0.051 | 31    |                     |           | 3.05     | 3833     | -12.6 | 54              | 51 | 47 | 38 | 33 | 27 |   |
|               |           | 800      | 10828    | -0.090 | 36    |                     |           | 4.06     | 5110     | -22.4 | 53              | 54 | 51 | 44 | 38 | 32 |   |
|               |           | 1000     | 13535    | -0.141 | 39    |                     |           | 5.08     | 6388     | -35.0 | 53              | 57 | 55 | 48 | 42 | 36 |   |
|               |           | 1100     | 14889    | -0.170 | 41    |                     |           | 5.59     | 7027     | -42.3 | 53              | 59 | 56 | 50 | 43 | 38 |   |
| 46<br>x<br>46 | 14.69     | 100      | 1422     | -0.001 | -     | 116.8<br>x<br>116.8 | 1.37      | 0.51     | 671      | -0.3  | 58              | 27 | 20 | -  | -  | -  |   |
|               |           | 200      | 2844     | -0.006 | 15    |                     |           | 1.02     | 1342     | -1.4  | 57              | 36 | 31 | 18 | 14 | -  |   |
|               |           | 300      | 4266     | -0.013 | 21    |                     |           | 1.52     | 2013     | -3.1  | 56              | 42 | 37 | 25 | 21 | 15 |   |
|               |           | 400      | 5688     | -0.022 | 25    |                     |           | 2.03     | 2684     | -5.6  | 55              | 45 | 41 | 31 | 26 | 20 |   |
|               |           | 500      | 7110     | -0.035 | 29    |                     |           | 2.54     | 3355     | -8.7  | 55              | 48 | 44 | 35 | 30 | 24 |   |
|               |           | 600      | 8532     | -0.051 | 32    |                     |           | 3.05     | 4026     | -12.6 | 54              | 51 | 47 | 38 | 33 | 27 |   |
|               |           | 800      | 11375    | -0.090 | 36    |                     |           | 4.06     | 5369     | -22.4 | 54              | 55 | 51 | 44 | 38 | 32 |   |
|               |           | 1000     | 14219    | -0.141 | 40    |                     |           | 5.08     | 6711     | -35.0 | 53              | 58 | 55 | 48 | 42 | 36 |   |
|               |           | 1100     | 15641    | -0.170 | 41    |                     |           | 5.59     | 7382     | -42.3 | 53              | 59 | 56 | 50 | 43 | 38 |   |
| 48<br>x<br>46 | 15.33     | 100      | 1485     | -0.001 | -     | 121.9<br>x<br>116.8 | 1.42      | 0.51     | 701      | -0.3  | 59              | 27 | 21 | -  | -  | -  |   |
|               |           | 200      | 2970     | -0.006 | 15    |                     |           | 1.02     | 1401     | -1.4  | 57              | 36 | 31 | 18 | 14 | -  |   |
|               |           | 300      | 4454     | -0.013 | 21    |                     |           | 1.52     | 2102     | -3.1  | 56              | 42 | 37 | 26 | 21 | 15 |   |
|               |           | 400      | 5939     | -0.022 | 25    |                     |           | 2.03     | 2803     | -5.6  | 55              | 46 | 41 | 31 | 26 | 20 |   |
|               |           | 500      | 7424     | -0.035 | 29    |                     |           | 2.54     | 3504     | -8.7  | 55              | 49 | 45 | 35 | 30 | 24 |   |
|               |           | 600      | 8909     | -0.051 | 31    |                     |           | 3.05     | 4204     | -12.6 | 54              | 51 | 47 | 39 | 33 | 27 |   |
|               |           | 800      | 11878    | -0.090 | 36    |                     |           | 4.06     | 5606     | -22.4 | 54              | 55 | 52 | 44 | 38 | 32 |   |
|               |           | 1000     | 14848    | -0.141 | 40    |                     |           | 5.08     | 7007     | -35.0 | 53              | 58 | 55 | 48 | 42 | 36 |   |
|               |           | 1100     | 16332    | -0.170 | 41    |                     |           | 5.59     | 7708     | -42.3 | 53              | 59 | 56 | 50 | 44 | 38 |   |

**NOTE:** See notes and correction factors on page P1-82.

# 9S80HF

Stainless Steel Return Grille, Single Deflection, Hinged



## PERFORMANCE DATA

| NOM DUCT      |       | IP DATA         |                 |             |    | SOUND               | METRIC DATA    |                   |                 |                 |          | OCTAVE BAND, dB |    |    |    |    |   |
|---------------|-------|-----------------|-----------------|-------------|----|---------------------|----------------|-------------------|-----------------|-----------------|----------|-----------------|----|----|----|----|---|
| in            | sq ft | NECK VEL<br>fpm | AIR FLOW<br>cfm | Ps<br>in wg | NC |                     | NOM DUCT<br>cm | DUCT AREA<br>sq m | NECK VEL<br>m/s | AIR FLOW<br>l/s | Ps<br>Pa | 2               | 3  | 4  | 5  | 6  | 7 |
| 48<br>x<br>48 | 16.00 | 100             | 1550            | -0.001      | -  | 121.9<br>x<br>121.9 | 1.49           | 0.51              | 732             | -0.3            | 59       | 27              | 21 | -  | -  | -  |   |
|               |       | 200             | 3101            | -0.006      | 15 |                     |                | 1.02              | 1463            | -1.4            | 57       | 37              | 31 | 18 | 14 | -  |   |
|               |       | 300             | 4651            | -0.013      | 21 |                     |                | 1.52              | 2195            | -3.1            | 56       | 42              | 37 | 26 | 21 | 16 |   |
|               |       | 400             | 6202            | -0.022      | 26 |                     |                | 2.03              | 2927            | -5.6            | 56       | 46              | 41 | 31 | 26 | 21 |   |
|               |       | 500             | 7752            | -0.035      | 29 |                     |                | 2.54              | 3659            | -8.7            | 55       | 49              | 45 | 35 | 30 | 24 |   |
|               |       | 600             | 9302            | -0.051      | 32 |                     |                | 3.05              | 4390            | -12.6           | 55       | 51              | 47 | 39 | 33 | 28 |   |
|               |       | 800             | 12403           | -0.090      | 37 |                     |                | 4.06              | 5854            | -22.4           | 54       | 55              | 52 | 44 | 38 | 33 |   |
|               |       | 1000            | 15504           | -0.141      | 40 |                     |                | 5.08              | 7317            | -35.0           | 53       | 58              | 55 | 49 | 42 | 37 |   |
|               |       | 1100            | 17054           | -0.170      | 41 |                     |                | 5.59              | 8049            | -42.3           | 53       | 59              | 57 | 50 | 44 | 38 |   |

**NOTES:** Performance data includes damper. Data was obtained from test conducted in accordance with ANSI / ASHRAE Standard 70-1991. All pressures are in inches of water (Pascals). NC values are based on Octave Band 2 - 7 sound power levels minus a room absorption of 10dB.

### ENGINEERING SPECIFICATION & CONFIGURATION

#### 9S80HF

The hinged face return grille shall be a Krueger model 9S80HF. This grille must have fixed 45° deflection (H and V models) or 0° deflection (HZ and VZ models) blades on 3/4" centers constructed of roll formed 304 stainless steel with minimum 0.050" thickness. The frame of the grille must be constructed of 18 gage 304 stainless steel and attach to a 20 gage 304 stainless steel sub-frame with stainless steel hinges and #8-32 stainless captive screws. The sub-frame shall have countersunk screw holes (#6 x 1 1/4" stainless sheet metal screws provided by manufacturer). The frame and sub-frame assembly must produce a border not exceeding 1 9/16" around all sides of the grille with mitered corners.

Optional 304 stainless steel damper available made of 20 gage stainless steel welded to the return grille and operable from the face.

Optional filter clips available for the sub-frame so assembly can accept a 1" thick filter.

Optional 316 stainless steel construction available.

#### FINISH

The finish shall be 90 - #4 Satin Polish, obtained by finishing with a 120-grit abrasive, or 44 - British White.

#### 1. SERIES: (XXXXXX)

9S80HF - Hinged Face Return Grille

#### 2. PATTERN: (XX)

H - 45° Horizontal Blades  
 V - 45° Vertical Blades  
 HZ - 0° Horizontal Blades  
 VZ - 0° Vertical Blades

#### 3. WIDTH: (XX)

6" - 48" in 1" Increments

#### 4. HEIGHT: (XX)

6" - 48" in 1" Increments

#### 5. MATERIAL: (XXX)

304 - Stainless Steel Grade 304  
 316 - Stainless Steel Grade 316

#### 6. FRAME STYLE: (XXX)

F22 - Surface Mount  
 F23 - Lay-in T-Bar

#### 7. PANEL: (XX)x(XX)

None  
 24"x24" \*  
 24"x48" \*

#### 8. FASTENING METHOD: (XX)

00 - No Screw Holes  
 01 - Countersunk Screw Holes \*\*  
 08 - 1 1/2" Turn, Hinged Top \*\*\*  
 12 - 1 1/2" Turn, No Hinge \*\*\*

#### 9. DAMPER: (XX)

00 - No Damper  
 01 - Stainless Steel OBD †

#### 10. ACCESSORIES: (XX) (XX)

00 - No Accessories  
 XX - Square to Round Adapter ‡  
 (Specify size from 04 - 18" in increments of 2", depending on neck size)  
 FC - Filter Clips

#### 11. FINISH: (XX)

90 - #4 Satin Polish  
 44 - British White

Maximum single size section is 36"x48".

\* Only available with Frame 23.

\*\* Unit shipped with #6x1 1/4" stainless steel sheet metal screws.

\*\*\* Fastening Method codes '08' and '12' use 1 1/2" turn captive machine screws.

† Damper is welded to unit.

‡ Square to Round Adapter is not available with OBD.

**SAMPLE CONFIGURATION:** 9S80HF - H - 20x20 - 304 - F22 - NONE - 08 - 00 - FC - 90