

# ELECTRONIC FLUORESCENT BALLASTS

|                    | Allowed Wiring Configuration |        |         | Maximum Lead Length (Feet) for Tandem or Through Wiring<br>(Total length of all wires between ballast and lamp sockets) |       |        |            |       |        | Application Note |
|--------------------|------------------------------|--------|---------|---|-------|--------|------------|-------|--------|------------------|
|                    | Remote<br>(max length)       | Tandem | Through | Blue  | Red   | Yellow | Blue/White | Brown | Orange |                  |
| ICN-2S40-N         | 20'                          | Yes    | Yes     | 4'  | 10'   | 10'    |            |       |        | 2                |
| ICN-2S54           | 20'                          | Yes    | Yes     | 20'   | 4'    | 20'    |            |       |        | 3                |
| ICN-2S54-N         | 20'                          | Yes    | Yes     | 20'   | 4'    | 20'    |            |       |        | 3                |
| ICN-2S54-90C-SC    | 20'                          | Yes    | Yes     | 20'   | 4'    | 20'    |            |       |        | 3                |
| ICN-2S86           | 12'                          | Yes    | Yes     | 12'   | 4'    | 12'    |            |       |        | 3 (b)            |
| ICN-2S110-SC       | 20'                          | Yes    | Yes     | 4'  | 20'   | 20'    |            |       |        | 2                |
| ICN-2TTP40-SC      | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1                |
| ICN-3P32-N         | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| ICN-3S14-D         | No                           | No     | No      |   |       |        |            |       |        | 5                |
| ICN-3TTP40-SC      | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1                |
| ICN-4P32-N         | 20'                          | Yes    | Yes     | 20'   | 20'   | 20'    |            |       |        | 1 (e)            |
| ICN-4S54-90C-2LS-G | 20'                          | Yes    | Yes     | 20'   | 4'    | 4'     | 20'        | 20'   | 20'    | 7                |
| IDA-128-D          | 6'                           | NA     | NA      |   |       |        |            |       |        | 4                |
| IDA-132-SC         | No                           | NA     | NA      |   |       |        |            |       |        | 5                |
| IDA-154            | No                           | NA     | NA      |   |       |        |            |       |        | 5                |
| IDA-2S28-D         | 6'                           | Yes    | Yes     | 6'  | 6'    | 6'     |            |       |        | 1                |
| IDA-2S32-SC        | No                           | No     | Yes     | 5'  | 4'    | 4'     |            |       |        | 3                |
| IDA-2S54           | No                           | No     | Yes     | 5'  | 4'    | 4'     |            |       |        | 3                |
| IDA-3S32-G         | No                           | No     | No      |   |       |        |            |       |        | 5                |
| IDA-4S32           | No                           | No     | Yes-8'  | 1'  | 1.25' | 5.2'   | 1.25'      | 4.2'  |        | 3                |
| IDL-2S26-M5-BS     | No                           | No     | No      |   |       |        |            |       |        | 5                |
| IDL-2S26-M5-LD     | No                           | No     | No      |   |       |        |            |       |        | 5                |
| IDL-2T42-M5-BS     | No                           | No     | No      |   |       |        |            |       |        | 5                |
| IDL-2T42-M5-LD     | No                           | No     | No      |   |       |        |            |       |        | 5                |
| IEZ-2S24-D         | No                           | No     | Yes     | 3'  | 2'    | 2'     |            |       |        | 3                |
| ILV-2S32-SC        | 6'                           | Yes    | Yes     | 6'  | 6'    | 6'     |            |       |        | 1                |
| ILV-4S32-G         | No                           | No     | Yes-8'  | 1'  | 1.25' | 5.2'   | 1.25'      | 4.2'  |        | 3                |
| IOP-1P32-HL-SC     | 20'                          | NA     | NA      |   |       |        |            |       |        | 1 (e)            |
| IOP-1P32-LW-SC     | 20'                          | NA     | NA      |   |       |        |            |       |        | 1 (e)            |
| IOP-1P32-SC        | 20'                          | NA     | NA      |   |       |        |            |       |        | 1 (e)            |
| IOP-1S32-LW-SC     | 10'                          | NA     | NA      |   |       |        |            |       |        | 4                |
| IOP-1S32-SC        | 10'                          | NA     | NA      |   |       |        |            |       |        | 4                |
| IOP-2P32HL-SC      | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-2P32-LW-SC     | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-2P32-SC        | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-2P59-SC        | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-2PSP32-LW-SC   | 20'                          | Yes    | Yes     | 20'   | 20'   | 18'    |            |       |        | 1 (e)            |
| IOP-2PSP32-SC      | 20'                          | Yes    | Yes     | 20'   | 20'   | 18'    |            |       |        | 1 (e)            |
| IOP-2PSP54-SC      | 20'                          | Yes    | Yes     | 20'   | 20'   | 15'    |            |       |        | 1                |
| IOP-2S28-95-SC-SD  | 7'                           | Yes    | Yes     | 7'  | 7'    | 7'     |            |       |        | 1                |
| IOP-2S28-115-SC-SD | 7'                           | Yes    | Yes     | 7'  | 7'    | 7'     |            |       |        | 1                |
| IOP-2S28-95-SC     | 20'                          | Yes    | Yes     | 20'   | 20'   | 20'    |            |       |        | 1                |
| IOP-2S28-115-SC    | 20'                          | Yes    | Yes     | 20'   | 20'   | 20'    |            |       |        | 1                |
| IOP-2S32-LW-SC     | 10'                          | Yes    | Yes     | 4'  | 10'   | 10'    |            |       |        | 2 (d)            |
| IOP-2S32-SC        | 10'                          | Yes    | Yes     | 4'  | 10'   | 10'    |            |       |        | 2 (d)            |
| IOP-3P32-HL-90C-SC | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-3P32-LW-SC     | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-3P32-SC        | 20'                          | Yes    | Yes     | 20'   | 20'   |        |            |       |        | 1 (e)            |
| IOP-3PSP32-LW-SC   | 20'                          | Yes    | Yes     | 20'   | 20'   | 18'    | 18'        |       |        | 1 (e)            |



# For 17W Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic  
Fluorescent Ballasts

| No. of Lamps                | Input Volts    | Lamp Starting Method | Ballast Family        | Catalog Number   | Input Power ANSI (Watts) | Ballast Factor  | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |         |   |    |
|-----------------------------|----------------|----------------------|-----------------------|------------------|--------------------------|-----------------|------------|---------------------|-----------------------------|------|-------------|---------|---|----|
| <b>F17T8, FBO16T8 (17W)</b> |                |                      |                       |                  |                          |                 |            |                     |                             |      |             |         |   |    |
| 1                           | 120            | IS                   | AmbiStar <sup>‡</sup> | REB-2P32-SC      | 19                       | 1.02            | 150        | 0.30                | 0/-18                       | B    | *64         |         |   |    |
|                             |                |                      | Centium               | ICN-132-MC       | 17                       | 0.88            | 20         | 0.14-0.06           | 0/-18                       | A2   | 63          |         |   |    |
|                             |                |                      |                       | ICN-1P32-N       | 19                       | 0.93            | 15         | 0.16-0.07           |                             | N    |             | *64     |   |    |
|                             | ICN-2P32-N     | 22                   |                       | 1.07             | 15                       | 0.18-0.09       | -20/-29    | B                   |                             | 63   |             |         |   |    |
|                             | IOP-1P32-LW-SC | 15                   |                       | 0.80             | 10                       | 0.13-0.06       |            | N                   |                             |      |             |         |   |    |
|                             |                | IOPA-1P32-LW-N       | 16                    | 0.90             | 10                       | 0.14-0.07       |            | B                   |                             |      |             |         |   |    |
|                             | IOPA-1P32-N    | N                    |                       |                  |                          |                 |            |                     |                             |      |             |         |   |    |
|                             | IOP-1P32-HL-SC | 22                   | 1.23                  | 15               | 0.19-0.08                | B               |            |                     |                             |      |             |         |   |    |
|                             | IOPA-1P32-HL-N |                      |                       |                  |                          | N               |            |                     |                             |      |             |         |   |    |
|                             | IOP-2P32-LW-SC | 18                   | 0.90                  | 20               | 0.15-0.07                | B               |            |                     |                             |      |             |         |   |    |
|                             | IOPA-2P32-LW-N |                      |                       |                  |                          | N               |            |                     |                             |      |             |         |   |    |
|                             | IOP-2P32-SC    | 19                   | 1.06                  | 15               | 0.17-0.08                | B               |            |                     |                             |      |             |         |   |    |
|                             | IOPA-2P32-N    |                      |                       |                  |                          | N               |            |                     |                             |      |             |         |   |    |
|                             | IOP-2P32-HL-SC | 25                   | 1.42                  | 20               | 0.21-0.10                | B               |            |                     |                             |      |             |         |   |    |
|                             | IOPA-2P32HL-N  |                      |                       |                  |                          | N               |            |                     |                             |      |             |         |   |    |
|                             | 120-277        | IS                   | Optanium              | IOP-2PSP32-HL-SC | 39                       | 1.34            | 10         | 0.20-0.11           | 0/-18                       | B    | 77          |         |   |    |
|                             |                |                      |                       | IOP-2PSP32-LW-SC | 16                       | 0.79            | 10         | 0.13-0.06           |                             |      |             |         |   |    |
|                             |                |                      |                       | IOP-2PSP32-SC    | 19                       | 1.00            | 10         | 0.16-0.07           |                             |      |             |         |   |    |
|                             |                |                      |                       | IOP-1S32-LW-SC   | 14                       | 0.79            | 10         | 0.12-0.05           |                             |      | 20          |         |   |    |
|                             |                |                      |                       | IOP-1S32-SC      | 16                       | 0.97            | 10         | 0.14-0.07           |                             |      |             |         |   |    |
|                             |                |                      |                       | IOP-2S32-LW-SC   | 15                       | 0.78            | 15         | 0.12-0.06           |                             |      |             |         |   |    |
|                             | 347            | IS                   | Optanium              | GOPA-1P32-LW-SC  | 15                       | 0.80            | 10         | 0.05                | -20/-29                     | B    | 63          |         |   |    |
|                             |                |                      |                       | GOPA-1P32-SC     | 16                       | 0.93            |            | 0.06                |                             |      |             |         |   |    |
|                             |                |                      |                       | GOPA-2P32-LW-SC  | 17                       | 0.89            |            | 0.06                |                             |      |             |         |   |    |
|                             |                |                      |                       | GOPA-2P32-SC     | 20                       | 1.07            |            | 0.06                |                             |      |             |         |   |    |
|                             |                |                      |                       | GOP-2PSP32-SC    | 19                       | 1.08            |            | 0.06                |                             |      |             |         |   |    |
|                             |                | PS                   | GOP-2PSP32-LW-SC      | TBD              | TBD                      | TBD             | 0/-18      | *64                 |                             |      |             |         |   |    |
|                             |                |                      | HOP-2PSP32-HL-SC      | TBD              | TBD                      | 10              |            | TBD                 | 39                          |      |             |         |   |    |
|                             |                |                      | 347/480               | PS               | Optanium                 | GOPA-1P32-LW-SC |            | 15                  | 0.80                        | 10   | 0.05        | -20/-29 | B | 63 |
|                             |                |                      |                       |                  |                          | GOPA-1P32-SC    |            | 16                  | 0.93                        |      | 0.06        |         |   |    |
| GOPA-2P32-LW-SC             |                |                      | 17                    | 0.89             | 0.06                     |                 |            |                     |                             |      |             |         |   |    |
| GOPA-2P32-SC                | 20             | 1.07                 | 0.06                  |                  |                          |                 |            |                     |                             |      |             |         |   |    |
| GOP-2PSP32-SC               | 19             | 1.08                 | 0.06                  |                  |                          |                 |            |                     |                             |      |             |         |   |    |
| GOP-2PSP32-LW-SC            | TBD            | TBD                  | TBD                   |                  |                          |                 |            |                     |                             |      |             |         |   |    |

<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'

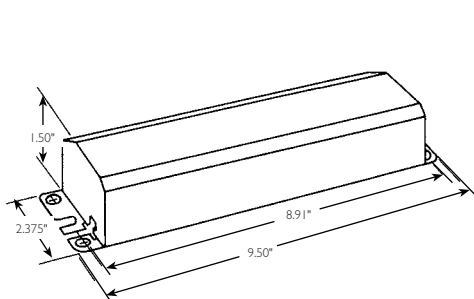


Fig. A

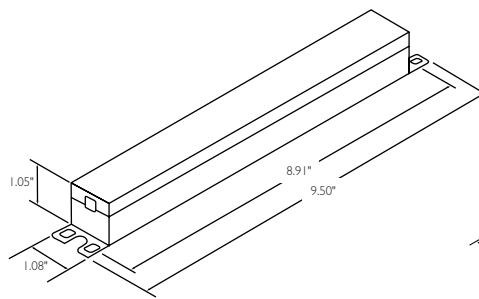


Fig. A2

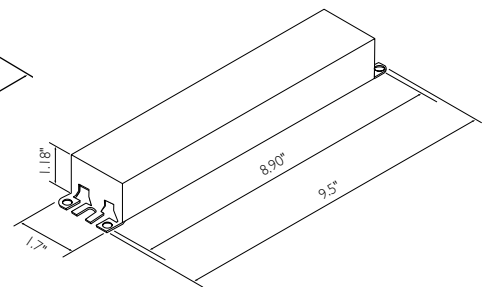


Fig. B

Refer to page 1-40 and 1-41 for wiring diagrams  
Refer to pages 9-23 to 9-27 for lead lengths and shipping data



# T8

## ELECTRONIC FLUORESCENT BALLASTS

### For 17W Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic  
Fluorescent Ballasts

| No. of Lamps                | Input Volts    | Lamp Starting Method | Ballast Family        | Catalog Number   | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |     |
|-----------------------------|----------------|----------------------|-----------------------|------------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|-----|
| <b>F17T8, FBO16T8 (17W)</b> |                |                      |                       |                  |                          |                |            |                     |                             |      |             |     |
| 2                           | 120            | IS                   | AmbiStar <sup>‡</sup> | REB-2P32-SC      | 31                       | 0.91           | 140        | 0.45                | 0/-18                       | B    | 64          |     |
|                             |                |                      | Centium               | ICN-2M32-MC      | 31                       | 0.88           | 10         | 0.26-0.11           | 0/-18                       | A2   | 64          |     |
|                             |                |                      |                       | ICN-2P32-N       | 33                       | 0.93           | 15         | 0.28-0.13           |                             | N    | *65         |     |
|                             | ICN-3P32-N     | 38                   |                       | 1.07             | 15                       | 0.32-0.14      |            |                     |                             |      |             |     |
|                             | 120-277        | IS                   | Optanium              | IOP-2P32-LW-SC   | 27                       | 0.80           | 10         | 0.23-0.10           | -20/-29                     | B    | 64          |     |
|                             |                |                      |                       | IOPA-2P32-LW-N   |                          |                |            |                     |                             | N    |             |     |
|                             |                |                      |                       | IOP-2P32-SC      | 31                       | 0.90           | 10         | 0.26-0.11           |                             | B    |             |     |
|                             |                |                      |                       | IOPA-2P32-N      |                          |                |            |                     |                             | N    |             |     |
|                             |                |                      |                       | IOP-2P32-HL-SC   | 41                       | 1.23           | 15         | 0.34-0.15           |                             | B    |             |     |
|                             |                |                      |                       | IOPA-2P32HL-N    |                          |                |            |                     |                             | N    |             |     |
|                             |                |                      | IOP-3P32-LW-SC        | 31               | 0.87                     | 20             | 0.26-0.12  | B                   | *65                         |      |             |     |
|                             |                |                      | IOPA-3P32LW-N         |                  |                          |                |            | N                   |                             |      |             |     |
|                             |                |                      | IOP-3P32-SC           | 35               | 1.01                     | 15             | 0.30-0.14  | B                   |                             |      |             |     |
|                             |                |                      | IOPA-3P32-N           |                  |                          |                |            | N                   |                             |      |             |     |
|                             |                |                      | IOP-3P32-HL-90C-SC    | 47               | 1.37                     | 10-30          | 0.39-0.20  | B                   |                             |      |             |     |
|                             |                |                      | IOPA-3P32-HL-N        |                  |                          |                |            |                     |                             |      |             |     |
|                             |                |                      | PS                    | IOP-2PSP32-HL-SC | 66-64                    | 1.17           | 10         | 0.33-0.15           | 0/-18                       | B    | 21          |     |
|                             |                |                      |                       | IOP-2PSP32-LW-SC | 25-24                    | 0.71           | 10         | 0.20-0.09           |                             |      |             |     |
|                             |                |                      |                       | IOP-2PSP32-SC    | 30                       | 0.88           | 10         | 0.25-0.11           |                             |      |             |     |
|                             | IOP-2S32-LW-SC | 25                   |                       | 0.73             | 10                       | 0.21-0.09      |            |                     |                             |      |             |     |
|                             | IOP-2S32-SC    | 29                   |                       | 0.90             | 15                       | 0.24-0.11      |            |                     |                             |      |             |     |
|                             | 347            | IS                   | Optanium              | GOP-2PSP32-SC    | 31                       | 0.88           | 10         | 0.09                | 0/-18                       | B    | 64          |     |
|                             |                |                      |                       | GOP-2PSP32-LW-SC | TBD                      | 0.71           |            | TBD                 |                             |      | -20/-29     | 64  |
|                             |                |                      |                       | GOPA-2P32-LW-SC  | 27                       | 0.78           |            | 0.08                |                             |      |             | *65 |
| GOPA-2P32-SC                |                |                      |                       | 30               | 0.88                     | 0.09           |            |                     |                             |      |             |     |
| GOPA-3P32-LW-SC             |                |                      |                       | 30               | 0.87                     | 0.09           |            |                     |                             |      |             |     |
| GOPA-3P32-SC                |                |                      |                       | 34               | 1.01                     | 0.10           |            |                     |                             |      |             |     |
| HOP-2PSP32-HL-SC            |                |                      |                       | TBD              | 1.18                     | TBD            |            | 0/-18               |                             |      |             |     |
| 347/480                     |                |                      |                       |                  |                          |                |            |                     |                             |      |             |     |

<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'

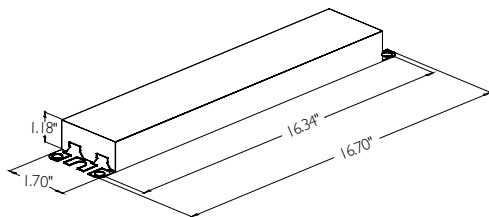


Fig. G

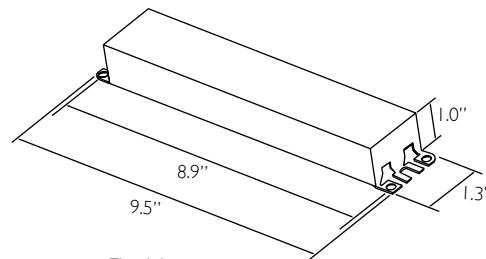


Fig. N

Refer to page I-38 for additional dimensions  
 Refer to page I-40 and I-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data



# For 25W-36" Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic  
Fluorescent Ballasts

| No. of Lamps                      | Input Volts    | Lamp Starting Method | Ballast Family        | Catalog Number   | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |
|-----------------------------------|----------------|----------------------|-----------------------|------------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|
| <b>F25T8, FBO24T8 (25W - 36")</b> |                |                      |                       |                  |                          |                |            |                     |                             |      |             |
| 1                                 | 120            | IS                   | AmbiStar <sup>‡</sup> | REB-2P32-SC      | 26                       | 1.00           | 150        | 0.39                | 0/-18                       | B    | *64         |
|                                   |                |                      | Centium               | ICN-132-MC       | 23                       | 0.88           | 15         | 0.19-0.09           | 0/-18                       | A2   | 63          |
|                                   |                |                      |                       | ICN-1P32-N       | 26                       | 0.91           | 10         | 0.22-0.10           |                             | N    | *64         |
|                                   |                |                      |                       | ICN-2P32-N       | 29                       | 1.06           | 15         | 0.24-0.11           |                             |      |             |
|                                   |                | IS                   | Optanium              | IOP-1P32-LW-SC   | 21                       | 0.78           | 10         | 0.17-0.08           | -20/-29                     | B    | 63          |
|                                   |                |                      |                       | IOPA-1P32-LW -N  |                          |                |            |                     |                             | N    |             |
|                                   |                |                      |                       | IOP-1P32-SC      | 23                       | 0.88           | 10         | 0.20-0.09           |                             | B    |             |
|                                   |                |                      |                       | IOPA-1P32-N      |                          |                |            |                     |                             | N    |             |
|                                   |                |                      |                       | IOP-1P32-HL-SC   | 30                       | 1.22           | 10         | 0.26-0.11           |                             | B    |             |
|                                   |                |                      |                       | IOPA-1P32-HL-N   |                          |                |            |                     |                             | N    |             |
|                                   |                |                      | IOP-2P32-LW-SC        | 24               | 0.90                     | 10             | 0.20-0.09  | B                   | *64                         |      |             |
|                                   |                |                      | IOPA-2P32-LW-N        |                  |                          |                |            | N                   |                             |      |             |
|                                   | IOP-2P32-SC    |                      | 28                    | 1.05             | 10                       | 0.23-0.10      | B          |                     |                             |      |             |
|                                   | IOPA-2P32-N    |                      |                       |                  |                          |                | N          |                     |                             |      |             |
|                                   | IOP-2P32-HL-SC |                      | 35                    | 1.40             | 20                       | 0.29-0.13      | B          |                     |                             |      |             |
|                                   | IOPA-2P32HL-N  |                      |                       |                  |                          |                | N          |                     |                             |      |             |
|                                   | PS             |                      | Optanium              | IOP-2PSP32-LW-SC | 21                       | 0.77           | 10         | 0.17-0.08           | 0/-18                       | B    | 77          |
|                                   |                |                      |                       | IOP-2PSP32-SC    | 25                       | 0.97           | 10         | 0.21-0.10           |                             |      |             |
|                                   |                | IOP-2PSP32-HL-SC     |                       | 35               | 1.35                     | 10             | 0.29-0.13  |                     |                             |      |             |
|                                   |                | IOP-1S32-LW-SC       |                       | 20               | 0.74                     | 10             | 0.16-0.07  | 20                  |                             |      |             |
|                                   |                | IOP-1S32-SC          |                       | 22               | 0.92                     | 10             | 0.19-0.08  | 39                  |                             |      |             |
|                                   |                | IOP-2S32-LW-SC       |                       | 20               | 0.73                     | 15             | 0.17-0.08  |                     |                             |      |             |
|                                   |                | IOP-2S32-SC          |                       | 23               | 0.90                     | 15             | 0.19-0.09  |                     |                             |      |             |
|                                   |                |                      |                       |                  |                          |                |            |                     |                             |      |             |
|                                   | 347            | PS                   | Optanium              | GOP-2PSP32-SC    | 26                       | 1.05           | 10         | 0.17-0.08           | -20/-29                     | B    | 77          |
|                                   |                |                      |                       | GOP-2PSP32-LW-SC | TBD                      | TBD            | 10         | TBD                 |                             |      |             |
|                                   |                |                      |                       | GOPA-1P32-LW-SC  | 20                       | 0.80           | 10         | 0.07                |                             |      | 63          |
|                                   |                | GOPA-1P32-SC         |                       | 22               | 0.91                     | 0.07           |            | *64                 |                             |      |             |
|                                   |                | GOPA-2P32-LW-SC      |                       | 24               | 0.88                     | 0.08           |            |                     |                             |      |             |
|                                   |                | GOPA-2P32-SC         |                       | 27               | 1.05                     | 0.08           |            |                     |                             |      |             |
|                                   | 347/480        | PS                   | HOP-2PSP32-HL-SC      | TBD              | TBD                      |                |            |                     | 0/-18                       |      | 77          |

<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-40 and 1-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data



# T8

## ELECTRONIC FLUORESCENT BALLASTS

### For 25W-36" Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic  
Fluorescent Ballasts

| No. of Lamps                      | Input Volts    | Lamp Starting Method | Ballast Family        | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD %  | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim.    | Wiring Dia. |      |    |           |       |   |    |
|-----------------------------------|----------------|----------------------|-----------------------|----------------|--------------------------|----------------|-------------|---------------------|-----------------------------|---------|-------------|------|----|-----------|-------|---|----|
| <b>F25T8, FBO24T8 (25W - 36")</b> |                |                      |                       |                |                          |                |             |                     |                             |         |             |      |    |           |       |   |    |
| 2                                 | 120            | IS                   | AmbiStar <sup>‡</sup> | REB-2P32-SC    | 43                       | 0.89           | 130         | 0.61                | 0/-18                       | B       | 64          |      |    |           |       |   |    |
|                                   |                |                      |                       | ICN-2M32-MC    | 44                       | 0.88           | 15          | 0.37-0.16           | 0/-18                       | A2      | 64          |      |    |           |       |   |    |
|                                   | ICN-2P32-N     | 48                   | 0.91                  | 10             | 0.40-0.18                | N              | *65         |                     |                             |         |             |      |    |           |       |   |    |
|                                   | ICN-3P32-N     | 51                   | 1.03                  | 15             | 0.43-0.19                | B              | 64          |                     |                             |         |             |      |    |           |       |   |    |
|                                   | IOP-2P32-LW-SC | 39                   | 0.78                  | 10             | 0.32-0.14                |                |             | N                   |                             |         |             |      |    |           |       |   |    |
|                                   | IOPA-2P32-LW-N |                      |                       |                |                          | IS             | IOP-2P32-SC | 43                  | 0.88                        | 10      | 0.37-0.16   | B    | 64 |           |       |   |    |
|                                   | IOPA-2P32-N    | N                    |                       |                |                          |                |             |                     |                             |         |             |      |    |           |       |   |    |
|                                   | IOP-2P32-HL-SC | 57                   | 1.20                  | 10             | 0.48-0.21                |                | B           |                     |                             |         |             |      |    |           |       |   |    |
|                                   | IOPA-2P32HL-N  |                      |                       |                |                          | N              |             |                     |                             |         |             |      |    |           |       |   |    |
|                                   | 120-277        |                      |                       | Optanium       | IOP-3P32-LW-SC           | 43             | 0.86        | 10                  | 0.36-0.16                   | -20/-29 | B           | *65  |    |           |       |   |    |
|                                   |                |                      |                       |                | IOPA-3P32LW-N            |                |             |                     |                             |         | N           |      |    |           |       |   |    |
|                                   |                |                      |                       |                | IOP-3P32-SC              | 49             | 1.00        | 10                  | 0.42-0.18                   |         | B           |      |    |           |       |   |    |
|                                   |                |                      |                       |                | IOPA-3P32-N              |                |             |                     |                             |         | N           |      |    |           |       |   |    |
|                                   |                |                      |                       |                | IOP-3P32-HL-90C-SC       | 64             | 1.32        | 10-15               | 0.54-0.24                   |         | B           |      |    |           |       |   |    |
|                                   |                |                      |                       |                | IOPA-3P32-HL-N           |                |             |                     |                             |         |             |      |    |           |       |   |    |
|                                   |                |                      |                       |                | PS                       |                |             |                     | IOP-2PSP32-LW-SC            |         | 35-34       | 0.71 | 10 | 0.29-0.13 | 0/-18 | B | 77 |
|                                   |                |                      |                       |                |                          |                |             |                     | IOP-2PSP32-SC               |         | 43          | 0.88 | 10 | 0.36-0.16 |       |   |    |
|                                   |                |                      |                       |                |                          |                |             |                     | IOP-2PSP32-HL-SC            |         | 58-57       | 1.16 | 10 | 0.48-0.21 |       |   |    |
|                                   |                |                      |                       |                |                          |                |             |                     | IOP-2S32-LW-SC              |         | 36          | 0.71 | 10 | 0.30-0.13 |       |   |    |
|                                   | IOP-2S32-SC    | 43                   | 0.89                  | 10             |                          |                |             |                     | 0.36-0.16                   | 21      |             |      |    |           |       |   |    |
|                                   | 347            | IS                   |                       | Optanium       | GOP-2PSP32-SC            | 43             | 0.88        | 10                  | 0.13                        | 0/-18   | B           | 77   |    |           |       |   |    |
|                                   |                |                      |                       |                | GOP-2PSP32-LW-SC         | TBD            | 0.71        |                     | TBD                         |         |             |      |    |           |       |   |    |
|                                   |                |                      |                       |                | GOPA-2P32-LW-SC          | 38             | 0.78        |                     | 0.12                        | -20/-29 |             | 64   |    |           |       |   |    |
|                                   |                |                      |                       |                | GOPA-2P32-SC             | 44             | 0.88        |                     | 0.13                        |         |             |      |    |           |       |   |    |
|                                   |                |                      |                       |                | GOPA-3P32-LW-SC          | 42             | 0.85        |                     | 0.12                        |         |             |      |    |           |       |   |    |
|                                   |                |                      |                       |                | GOPA-3P32-SC             | 48             | 1.01        |                     | 0.14                        |         |             |      |    |           |       |   |    |
| HOP-2PSP32-HL-SC                  |                |                      |                       |                | TBD                      | 1.18           | TBD         |                     | 0/-18                       |         |             | 77   |    |           |       |   |    |
| 347/480                           | PS             |                      |                       |                |                          |                |             |                     |                             |         |             |      |    |           |       |   |    |

<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-40 and 1-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data



# For 25W-48" Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic Fluorescent Ballasts

| No. of Lamps                | Input Volts | Lamp Starting Method | Ballast Family   | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |       |       |   |    |
|-----------------------------|-------------|----------------------|------------------|----------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|-------|-------|---|----|
| <b>F32T8/ES (25W - 48")</b> |             |                      |                  |                |                          |                |            |                     |                             |      |             |       |       |   |    |
| 1                           | 120-277     | IS                   | Optanium         | IOP-1P32-LW-SC | 21                       | 0.77           | 10         | 0.17-0.07           | 60/16                       | B    | 63          |       |       |   |    |
|                             |             |                      |                  | IOPA-1P32-LW-N |                          |                |            |                     |                             | N    |             |       |       |   |    |
|                             |             |                      |                  | IOP-1P32-SC    | 23                       | 0.87           | 10         | 0.20-0.09           |                             | B    |             |       |       |   |    |
|                             |             |                      |                  | IOPA-1P32-N    |                          |                |            |                     |                             | N    |             |       |       |   |    |
|                             |             |                      |                  | IOP-1P32-HL-SC | 32                       | 1.21           | 10         | 0.26-0.12           |                             | B    |             |       |       |   |    |
|                             |             |                      |                  | IOPA-1P32-HL-N |                          |                |            |                     |                             | N    |             |       |       |   |    |
|                             |             |                      |                  | IOP-2P32-LW-SC | 24                       | 0.90           | 10         | 0.20-0.09           |                             | B    | *64         |       |       |   |    |
|                             |             |                      |                  | IOPA-2P32-LW-N |                          |                |            |                     |                             | N    |             |       |       |   |    |
|                             |             |                      |                  | IOP-2P32-SC    | 27                       | 1.05           | 10         | 0.23-0.10           |                             | B    |             |       |       |   |    |
|                             |             |                      |                  | IOPA-2P32-N    |                          |                |            |                     |                             | N    |             |       |       |   |    |
|                             |             |                      |                  | IOP-2P32-HL-SC | 37                       | 1.40           | 15         | 0.31-0.14           |                             | B    |             |       |       |   |    |
|                             |             |                      |                  | IOPA-2P32HL-N  |                          |                |            |                     |                             | N    |             |       |       |   |    |
|                             |             | IOP-2PSP32-LW-SC     |                  | 22             | 0.77                     | 10             | 0.18-0.08  | B                   |                             | 77   |             |       |       |   |    |
|                             |             | IOP-2PSP32-SC        |                  | 27             | 0.94                     | 10             | 0.23-0.10  |                     |                             |      |             |       |       |   |    |
|                             |             | IOP-2PSP32-HL-SC     |                  | 36             | 1.28                     | 10             | 0.30-0.14  |                     |                             |      |             |       |       |   |    |
|                             |             | IOP-1S32-LW-SC       |                  | 21             | 0.72                     | 10             | 0.17-0.07  |                     |                             | 20   |             |       |       |   |    |
|                             |             | IOP-1S32-SC          |                  | 24             | 0.88                     | 10             | 0.20-0.08  |                     |                             |      |             |       |       |   |    |
|                             |             | IOP-2S32-LW-SC       |                  | 21             | 0.73                     | 10             | 0.17-0.08  |                     |                             |      |             |       |       |   |    |
|                             | IOP-2S32-SC | 24                   |                  | 0.89           | 10-15                    | 0.20-0.09      | 39         |                     |                             |      |             |       |       |   |    |
|                             | 347         | PS                   |                  | Optanium       | GOP-2PSP32-SC            | 28             |            |                     |                             | 1.04 | 10          | 0.08  | 0/-18 | B | 77 |
|                             |             |                      |                  |                | GOP-2PSP32-LW-SC         | TBD            |            |                     |                             | TBD  |             | TBD   |       |   |    |
|                             |             |                      |                  |                | GOPA-1P32-LW-SC          | 21             | 0.77       |                     |                             | 0.06 |             |       |       |   |    |
|                             |             | IS                   |                  |                | GOPA-1P32-SC             | 23             | 0.88       |                     |                             | 0.06 |             | 60/16 | 63    |   |    |
|                             |             |                      |                  |                | GOPA-2P32-LW-SC          | 25             | 0.88       |                     |                             | 0.07 |             |       |       |   |    |
| GOPA-2P32-SC                |             |                      | 27               |                | 1.04                     | 0.09           |            |                     |                             |      |             |       |       |   |    |
| 347/480                     | PS          | Optanium             | HOP-2PSP32-HL-SC | TBD            | TBD                      | TBD            | *64        |                     |                             |      |             |       |       |   |    |
|                             |             |                      |                  |                |                          | 77             |            |                     |                             |      |             |       |       |   |    |

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-40 and 1-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data



### For 25W-48" Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic  
Fluorescent Ballasts

| No. of Lamps                | Input Volts     | Lamp Starting Method | Ballast Family   | Catalog Number     | Input Power ANSI (Watts) | Ballast Factor | Max. THD %      | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |
|-----------------------------|-----------------|----------------------|------------------|--------------------|--------------------------|----------------|-----------------|---------------------|-----------------------------|------|-------------|
| <b>F32T8/ES (25W - 48")</b> |                 |                      |                  |                    |                          |                |                 |                     |                             |      |             |
| 2                           | 120-277         | IS                   | Optanium         | IOP-2P32-LW-SC     | 38                       | 0.77           | 10              | 0.32-0.14           | 60/16                       | B    | 64          |
|                             |                 |                      |                  | IOPA-2P32-LW-N     |                          |                |                 |                     |                             | N    |             |
|                             |                 |                      |                  | IOP-2P32-SC        | 44-43                    | 0.87           | 10              | 0.37-0.06           |                             | B    |             |
|                             |                 |                      |                  | IOPA-2P32-N        |                          |                |                 |                     |                             | N    |             |
|                             |                 |                      |                  | IOP-2P32-HL-SC     | 60                       | 1.19           | 10              | 0.50-0.22           |                             | B    | *65         |
|                             |                 |                      |                  | IOPA-2P32HL-N      |                          |                |                 |                     |                             | N    |             |
|                             |                 |                      |                  | IOP-3P32-LW-SC     | 43                       | 0.86           | 10              | 0.36-0.16           |                             | B    |             |
|                             |                 |                      |                  | IOPA-3P32LW-N      |                          |                |                 |                     |                             | N    |             |
|                             |                 |                      |                  | IOP-3P32-SC        | 49                       | 1.00           | 10              | 0.42-0.18           |                             | B    |             |
|                             |                 |                      |                  | IOPA-3P32-N        |                          |                |                 |                     |                             | N    |             |
|                             |                 |                      |                  | IOP-3P32-HL-90C-SC | 70                       | 1.32           | 10-20           | 0.59-0.27           |                             | B    |             |
|                             |                 |                      |                  | IOPA-3P32-HL-N     |                          |                |                 |                     |                             | N    |             |
|                             | PS              | IS                   | Optanium         | IOP-2PSP32-LW-SC   | 37-36                    | 0.71           | 10              | 0.31-0.13           | 0/-18                       | B    | 77          |
|                             |                 |                      |                  | IOP-2PSP32-SC      | 46-45                    | 0.88           | 10              | 0.39-0.17           |                             |      |             |
|                             |                 |                      |                  | IOP-2PSP32-HL-SC   | 61-59                    | 1.18           | 10              | 0.51-0.22           |                             |      |             |
|                             |                 |                      |                  | IOP-2S32-LW-SC     | 39-38                    | 0.71           | 10              | 0.32-0.14           | 60/16                       |      | 21          |
|                             |                 |                      |                  | IOP-2S32-SC        | 45-44                    | 0.88           | 10              | 0.38-0.16           |                             |      |             |
|                             |                 |                      |                  | 347                | IS                       | Optanium       | GOPA-2P32-LW-SC | 39                  |                             |      |             |
|                             | GOPA-2P32-SC    | 44                   | 0.88             |                    |                          |                | 0.13            |                     |                             |      |             |
|                             | GOPA-3P32-LW-SC | 43                   | 0.86             |                    |                          |                | 0.13            | *65                 |                             |      |             |
| GOPA-3P32-SC                | 48              | 1.00                 | 0.14             |                    |                          |                |                 |                     |                             |      |             |
| GOP-2PSP32-SC               | 46              | 0.88                 | 0.14             |                    |                          |                | 0/-18           | 77                  |                             |      |             |
| GOP-2PSP32-LW-SC            | TBD             | 0.71                 | TBD              |                    |                          |                |                 |                     |                             |      |             |
| 347/480                     | PS              | Optanium             | HOP-2PSP32-HL-SC |                    |                          |                |                 |                     | TBD                         | 1.18 | TBD         |

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-40 and 1-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data



### For 28W-48" Lamps

HIGH POWER FACTOR SOUND RATED A



Electronic  
Fluorescent Ballasts

| No. of Lamps                | Input Volts      | Lamp Starting Method | Ballast Family   | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim.  | Wiring Dia. |    |
|-----------------------------|------------------|----------------------|------------------|----------------|--------------------------|----------------|------------|---------------------|-----------------------------|-------|-------------|----|
| <b>F32T8/ES (28W - 48")</b> |                  |                      |                  |                |                          |                |            |                     |                             |       |             |    |
| 1                           | 120-277          | IS                   | Optanium         | IOP-1P32-LW-SC | 22                       | 0.77           | 10         | 0.19-0.08           | 60/16                       | B     | 63          |    |
|                             |                  |                      |                  | IOPA-1P32-LW-N |                          |                |            |                     |                             | N     |             |    |
|                             |                  |                      |                  | IOP-1P32-SC    | 25                       | 0.87           | 10         | 0.22-0.10           |                             | B     |             |    |
|                             |                  |                      |                  | IOPA-1P32-N    |                          |                |            |                     |                             | N     |             |    |
|                             |                  |                      |                  | IOP-1P32-HL-SC | 33                       | 1.21           | 10         | 0.28-0.12           |                             | B     |             |    |
|                             |                  |                      |                  | IOPA-1P32-HL-N |                          |                |            |                     |                             | N     |             |    |
|                             |                  |                      |                  | IOP-2P32-LW-SC | 26                       | 0.90           | 10         | 0.22-0.10           |                             | B     | *64         |    |
|                             |                  |                      |                  | IOPA-2P32-LW-N |                          |                |            |                     |                             | N     |             |    |
|                             |                  |                      |                  | IOP-2P32-SC    | 31                       | 1.05           | 10         | 0.26-0.11           |                             | B     |             |    |
|                             |                  |                      |                  | IOPA-2P32-N    |                          |                |            |                     |                             | N     |             |    |
|                             |                  |                      |                  | IOP-2P32-HL-SC | 39                       | 1.38           | 10         | 0.33-0.15           |                             | B     |             |    |
|                             |                  |                      |                  | IOPA-2P32HL-N  |                          |                |            |                     |                             | N     |             |    |
|                             | PS               | 120-277              | PS               | Optanium       | IOP-2PSP32-LW-SC         | 23             | 0.74       | 10                  | 0.19-0.09                   | 0/-18 | B           | 77 |
|                             |                  |                      |                  |                | IOP-2PSP32-SC            | 30-28          | 0.94       | 10                  | 0.23-0.10                   |       |             |    |
|                             |                  |                      |                  |                | IOP-2PSP32-HL-SC         | 39             | 1.28       | 10                  | 0.33-0.15                   | 60/16 |             | 20 |
|                             |                  |                      |                  |                | IOP-1S32-LW-SC           | 21             | 0.72       | 10                  | 0.18-0.07                   |       |             |    |
|                             |                  |                      |                  |                | IOP-1S32-SC              | 25             | 0.88       | 10                  | 0.20-0.09                   |       |             |    |
|                             |                  |                      |                  |                | IOP-2S32-LW-SC           | 22             | 0.73       | 10                  | 0.18-0.08                   |       |             |    |
|                             |                  |                      |                  |                | IOP-2S32-SC              | 26             | 0.88       | 10-15               | 0.21-0.09                   |       |             | 39 |
|                             |                  |                      |                  |                | 347                      | PS             | IS         | Optanium            | GOP-2PSP32-SC               |       |             | 30 |
|                             | GOP-2PSP32-LW-SC | TBD                  | TBD              | 10             |                          |                |            |                     | TBD                         |       |             |    |
|                             | GOPA-1P32-LW-SC  | 22                   | 0.77             | 10             |                          |                |            |                     | 0.07                        | 60/16 | 63          |    |
|                             | GOPA-1P32-SC     | 25                   | 0.88             | 10             |                          |                |            |                     | 0.07                        |       |             |    |
|                             | GOPA-2P32-LW-SC  | 26                   | 0.88             | 10             |                          |                |            |                     | 0.08                        |       |             |    |
| GOPA-2P32-SC                | 29               | 1.04                 | 10               | 0.09           |                          |                |            |                     | *64                         |       |             |    |
| 347/480                     | PS               |                      | HOP-2PSP32-HL-SC | TBD            | TBD                      | 10             | TBD        | 0/-18               | B                           | 77    |             |    |

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-40 and 1-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data





HIGH POWER FACTOR SOUND RATED A



# For 28W-48" Lamps

Electronic Fluorescent Ballasts

| No. of Lamps                | Input Volts     | Lamp Starting Method | Ballast Family | Catalog Number     | Input Power ANSI (Watts) | Ballast Factor | Max. THD %       | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |       |       |    |    |
|-----------------------------|-----------------|----------------------|----------------|--------------------|--------------------------|----------------|------------------|---------------------|-----------------------------|------|-------------|-------|-------|----|----|
| <b>F32T8/ES (28W - 48")</b> |                 |                      |                |                    |                          |                |                  |                     |                             |      |             |       |       |    |    |
| 2                           | 120-277         | IS                   | Optanium       | IOP-2P32-LW-SC     | 42                       | 0.77           | 10               | 0.35-0.15           | 60/16                       | B    | 64          |       |       |    |    |
|                             |                 |                      |                | IOPA-2P32-LW-N     |                          |                |                  |                     |                             | N    |             |       |       |    |    |
|                             |                 |                      |                | IOP-2P32-SC        | 48-47                    | 0.87           | 10               | 0.41-0.18           |                             | B    |             |       |       |    |    |
|                             |                 |                      |                | IOPA-2P32-N        |                          |                |                  |                     |                             | N    |             |       |       |    |    |
|                             |                 |                      |                | IOP-2P32-HL-SC     | 65-64                    | 1.19           | 10               | 0.55-0.24           |                             | B    | *65         |       |       |    |    |
|                             |                 |                      |                | IOPA-2P32HL-N      |                          |                |                  |                     |                             | N    |             |       |       |    |    |
|                             |                 |                      |                | IOP-3P32-LW-SC     | 47                       | 0.86           | 10               | 0.40-0.18           |                             | B    |             |       |       |    |    |
|                             |                 |                      |                | IOPA-3P32LW-N      |                          |                |                  |                     |                             | N    |             |       |       |    |    |
|                             |                 |                      |                | IOP-3P32-SC        | 55-54                    | 1.00           | 10               | 0.46-0.20           |                             | B    |             |       |       |    |    |
|                             |                 |                      |                | IOPA-3P32-N        |                          |                |                  |                     |                             | N    |             |       |       |    |    |
|                             |                 |                      |                | IOP-3P32-HL-90C-SC | 74-73                    | 1.31           | 10-15            | 0.62-0.27           |                             | B    |             |       |       |    |    |
|                             |                 |                      |                | IOPA-3P32-HL-N     |                          |                |                  |                     |                             | N    |             |       |       |    |    |
|                             |                 |                      |                | 347                | IS                       | Optanium       | GOP-2PSP32-SC    | 50                  |                             | 0.88 | 10          | 0.10  | 0/-18 | B  | 77 |
|                             |                 |                      |                |                    |                          |                | GOP-2PSP32-LW-SC | TBD                 |                             | 0.71 |             | TBD   |       |    |    |
|                             | GOPA-2P32-LW-SC | 42                   | 0.78           |                    |                          |                | 0.12             | 60/16               | 64                          |      |             |       |       |    |    |
|                             | GOPA-2P32-SC    | 47                   | 0.88           |                    |                          |                | 0.14             |                     |                             |      |             |       |       |    |    |
|                             | GOPA-3P32-LW-SC | 46                   | 0.77           |                    |                          |                | 0.13             |                     | *65                         |      |             |       |       |    |    |
|                             | GOPA-3P32-SC    | 52                   | 1.00           |                    |                          |                | 0.16             |                     |                             |      |             |       |       |    |    |
|                             | 347/480         | PS                   | Optanium       |                    |                          |                | HOP-2PSP32-HL-SC | TBD                 | 1.18                        | TBD  |             | 0/-18 | B     | 77 |    |

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-40 and 1-41 for wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data