

2' X 4'  
2,3 or 4-Lamp  
T12 or T8

**APPLICATION**

- Premium quality recessed static troffer for:
  - Grid inverted T (NEMA “G”)
  - Flange-type for concealed mechanical suspension (NEMA “F”)
  - Modular and “Z” spline (NEMA “M/Z”)
  - Contact Day-Brite for other ceiling types

**CONSTRUCTION/FINISH**

- Die formed ribbed and embossed steel housing
- Housing is multi-stage phosphate treated for maximum corrosion resistance and finish coat is high reflectance baked white enamel
- Access plate (2 K.O.'s) factory installed includes grounding screw
- T-bar grid clips (U.L. listed, patented) built into fixture end plates, no extra parts required

**SIDE MOUNTED BALLASTS**

- Reduce ballast operating temperatures (two surface contact, away from lamps)
- Increase average ballast life
- Increase fixture efficiency

- All lamps on the same plane for uniform lens illumination

**ELECTRICAL**

- Class P, HPF, CBM certified ballasts comply with Federal Ballast Law (Public Law 100-357,1988) <sup>ⓔ</sup>
- UL listed, C.S.A. Certified Optional
- Self-contained fluorescent emergency power pack (DEB-7B) can be incorporated

**ENCLOSURES**

- Mitered corner door frames with a choice of: Flat Steel, Regressed Steel, Flat Aluminum or Regressed Aluminum
- Door frames standard with guide post spring loaded latches
- Mechanically designed interlocks block light, no gaskets are needed
- .100" nominal thickness acrylic pattern 12 lens standard (01). Other lens or louvers optional
- Choice of door finishes; white (standard) or black

| CATALOG NO.<br>GRID        | FLANGE                     | “Z” SPLINE<br>MODULAR      | SIZE    | NO. OF<br>LAMPS | LAMP<br>TYPE       | LENS |
|----------------------------|----------------------------|----------------------------|---------|-----------------|--------------------|------|
| 2DG240-FS01<br>2DG232-FS01 | 2DF240-FS01<br>2DF232-FS01 | 2DZ240-FS01<br>2DZ232-FS01 | 2' X 4' | 2<br>2          | F40 R.S.<br>F32 T8 | 01   |
| 2DG340-FS01<br>2DG332-FS01 | 2DF340-FS01<br>2DF332-FS01 | 2DZ340-FS01<br>2DZ332-FS01 | 2' X 4' | 3<br>3          | F40 R.S.<br>F32 T8 | 01   |
| 2DG440-FS01<br>2DG432-FS01 | 2DF440-FS01<br>2DF432-FS01 | 2DZ440-FS01<br>2DZ432-FS01 | 2' X 4' | 4<br>4          | F40 R.S.<br>F32 T8 | 01   |

**NOTE: TO ORDER ABOVE:**

- ALWAYS SUFFIX CATALOG NO. WITH VOLTAGE. –120=120V; –277= 277V
- With Generic Electronic Ballasts (Brand selected by Thomas Industries)  
Suffix Catalog # with– **Ballast Quantity** – / –**EB Lamps Per Ballast**

**Example:** –1/2-EB = One 2 Lamp Electronic Ballast

**Example:** –1/3-EB = One 3 Lamp Electronic Ballast

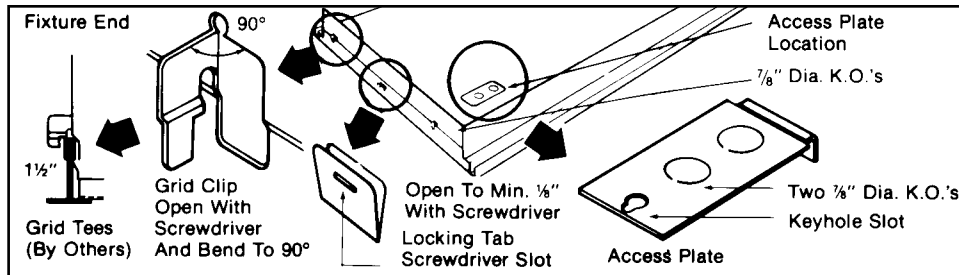
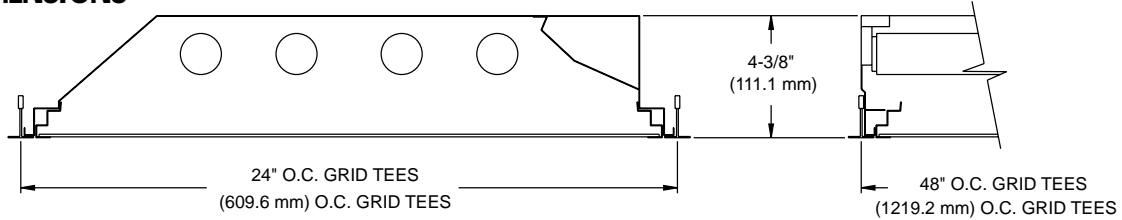
- With Regressed Steel Door, Change **FS** in Catalog No. to **RS**. **Example:** 2DG440-**RS**01
- With Flat Aluminum Door, Change **FS** in Catalog No. to **FA**. **Example:** 2DG440-**FA**01
- With Regressed Aluminum Door, Change **FS** in Catalog No. to **RA**. **Example:** 2DG440-**RA**01
- With Black Door instead of White, Suffix Catalog No. with **B**. **Example:** 2DG440-FS01**B**
- To Order C.S.A. Certified Fixtures Add **C** to the Catalog No. in Position Shown. **Example:** 2D**CG**440-FS01

**JOB INFORMATION**

**SR 1807**

Spec Sheet #

**DIMENSIONS**



**PHOTOMETRIC DATA**

CATALOG # 2DG240-FS01 LAMPS = F40 ES INPUT WATTS = 74 LER = FL-51  
 TEST # 15576 S/MH= 1.4 BALLAST = ESB BALLAST FACTOR = .88

COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$ 4. 71 BASED ON 3000 HRS. AND \$.08 PER KWH.

**CANDLEPOWER**

| Angle | End  | 45   | Cross |
|-------|------|------|-------|
| 0     | 1596 | 1596 | 1596  |
| 5     | 1599 | 1594 | 1591  |
| 10    | 1580 | 1583 | 1590  |
| 15    | 1545 | 1564 | 1583  |
| 20    | 1497 | 1531 | 1566  |
| 25    | 1429 | 1486 | 1540  |
| 30    | 1347 | 1425 | 1507  |
| 35    | 1245 | 1339 | 1453  |
| 40    | 1124 | 1223 | 1360  |
| 45    | 974  | 1072 | 1219  |
| 50    | 799  | 906  | 1022  |
| 55    | 635  | 745  | 806   |
| 60    | 492  | 562  | 613   |
| 65    | 368  | 386  | 438   |
| 70    | 277  | 237  | 308   |
| 75    | 212  | 154  | 229   |
| 80    | 160  | 122  | 171   |
| 85    | 87   | 74   | 93    |

**MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture\***

- 80-50-20 Reflectances (Ceiling-Wall-Floor)
- LLF = 0.73 2650 Lumens/Lamp very clean
- Room width divided by room height = 5 or more, 2 or 1

| Fixture Size & # of Lamps | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture |         |         |         |          |
|---------------------------|-----------------------------|------------------------------------|---------|---------|---------|----------|
|                           |                             | 10 ft-c                            | 30 ft-c | 50 ft-c | 70 ft-c | 100 ft-c |
| 2' X 4'                   | 5                           | -                                  | 109     | 66      | 47      | 33       |
| 2 Lamp                    | 2                           | -                                  | 76      | 45      | 32      | -        |
|                           | 1                           | -                                  | 56      | 33      | -       | -        |

\*Observe Fixture S/MH Requirements for Specific Applications

**AVERAGE LUMINANCE CD/SQ.M WITH 2650 LUMEN LAMPS**

| ANGLE | END  | 45°  | CROSS |
|-------|------|------|-------|
| 45    | 2134 | 2349 | 2671  |
| 55    | 1715 | 2012 | 2177  |
| 65    | 1349 | 1415 | 1606  |
| 75    | 1269 | 922  | 1371  |
| 85    | 1546 | 1315 | 1653  |

**TYPICAL V.C.P.'s Mounting Height**

| Room Size | Mounting Height |           |            |           |
|-----------|-----------------|-----------|------------|-----------|
|           | Lengthwise      | Crosswise | Lengthwise | Crosswise |
| 30x30     | 66              | 70        | 64         | 68        |
| 40x40     | 63              | 67        | 61         | 64        |
| 60x30     | 68              | 72        | 67         | 71        |
| 60x60     | 59              | 62        | 57         | 60        |
| 100x100   | 56              | 58        | 54         | 56        |

**COEFFICIENT OF UTILIZATION**

| pfc | 20 |    |    |    | 70 |    |    |    | 50 |    |    |    |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|
|     | 80 | 70 | 50 | 30 | 80 | 70 | 50 | 30 | 80 | 70 | 50 | 30 |
| 0   | 95 | 95 | 95 | 93 | 93 | 93 | 90 | 90 | 90 | 90 | 90 | 90 |
| 1   | 89 | 84 | 81 | 85 | 82 | 80 | 80 | 77 | 80 | 77 | 77 | 77 |
| 2   | 81 | 75 | 68 | 79 | 72 | 68 | 69 | 66 | 72 | 68 | 66 | 66 |
| 3   | 73 | 66 | 59 | 71 | 65 | 58 | 61 | 56 | 65 | 58 | 56 | 56 |
| 4   | 68 | 58 | 52 | 66 | 57 | 51 | 56 | 50 | 60 | 52 | 50 | 50 |
| 5   | 63 | 53 | 46 | 60 | 52 | 45 | 50 | 44 | 56 | 46 | 44 | 44 |
| 6   | 57 | 47 | 40 | 56 | 46 | 40 | 45 | 40 | 52 | 40 | 40 | 40 |
| 7   | 54 | 42 | 35 | 53 | 42 | 35 | 40 | 34 | 49 | 35 | 34 | 34 |
| 8   | 50 | 40 | 33 | 48 | 39 | 33 | 38 | 32 | 45 | 33 | 32 | 32 |
| 9   | 46 | 35 | 29 | 46 | 35 | 29 | 34 | 28 | 42 | 32 | 28 | 28 |
| 10  | 44 | 33 | 27 | 42 | 33 | 27 | 32 | 27 | 40 | 27 | 27 | 27 |

**LIGHT DISTRIBUTION**

| DEGREES | LUMENS | % LAMP | % FIXTURE |
|---------|--------|--------|-----------|
| 0-30    | 1278   | 24.1   | 29.8      |
| 0-40    | 2117   | 39.9   | 49.3      |
| 0-60    | 3604   | 68.0   | 84.0      |
| 0-90    | 4290   | 80.9   | 100.0     |

LLF = .73 LLF = LIGHT LOSS FACTOR LLF = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90  
 LLD = 0.88 @ 40% RATED LAMP LIFE BF = 0.88 ESB BALLAST & 34W LAMP (RELAMP AT 70% LAMP LIFE)

**PHOTOMETRIC DATA**

CATALOG # 2DG232-FS01-1/2-EB LAMPS = F32 T8 INPUT WATTS = 61 LER = FL-73  
 TEST # 15560 S/MH= 1.4 BALLAST = ELECTRONIC BALLAST FACTOR = .92

COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$ 3. 29 BASED ON 3000 HRS. AND \$.08 PER KWH.

**CANDLEPOWER**

| Angle | End  | 45   | Cross |
|-------|------|------|-------|
| 0     | 1835 | 1835 | 1835  |
| 5     | 1837 | 1831 | 1827  |
| 10    | 1813 | 1819 | 1824  |
| 15    | 1774 | 1795 | 1812  |
| 20    | 1718 | 1756 | 1790  |
| 25    | 1640 | 1698 | 1753  |
| 30    | 1543 | 1621 | 1707  |
| 35    | 1426 | 1523 | 1644  |
| 40    | 1281 | 1386 | 1535  |
| 45    | 1110 | 1209 | 1370  |
| 50    | 911  | 1024 | 1154  |
| 55    | 722  | 836  | 912   |
| 60    | 561  | 639  | 683   |
| 65    | 419  | 434  | 497   |
| 70    | 313  | 273  | 342   |
| 75    | 240  | 177  | 258   |
| 80    | 181  | 138  | 192   |
| 85    | 97   | 81   | 104   |

**MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture\***

- 80-50-20 Reflectances (Ceiling-Wall-Floor)
- LLF = 0.76 2900 Lumens/Lamp very clean
- Room width divided by room height = 5 or more, 2 or 1

| Fixture Size & # of Lamps | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture |         |         |         |          |
|---------------------------|-----------------------------|------------------------------------|---------|---------|---------|----------|
|                           |                             | 10 ft-c                            | 30 ft-c | 50 ft-c | 70 ft-c | 100 ft-c |
| 2' X 4'                   | 5                           | -                                  | 130     | 78      | 56      | 39       |
| 2 Lamp                    | 2                           | -                                  | 90      | 54      | 39      | -        |
|                           | 1                           | -                                  | 66      | 40      | -       | -        |

\*Observe Fixture S/MH Requirements for Specific Applications

**AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS**

| ANGLE | END  | 45°  | CROSS |
|-------|------|------|-------|
| 45    | 2432 | 2649 | 3002  |
| 55    | 1950 | 2258 | 2463  |
| 65    | 1536 | 1591 | 1822  |
| 75    | 1437 | 1059 | 1544  |
| 85    | 1724 | 1440 | 1849  |

**TYPICAL V.C.P.'s Mounting Height**

| Room Size | Mounting Height |           |            |           |
|-----------|-----------------|-----------|------------|-----------|
|           | Lengthwise      | Crosswise | Lengthwise | Crosswise |
| 30x30     | 63              | 68        | 61         | 65        |
| 40x40     | 60              | 64        | 58         | 62        |
| 60x30     | 66              | 70        | 65         | 68        |
| 60x60     | 57              | 60        | 55         | 57        |
| 100x100   | 53              | 55        | 52         | 53        |

**COEFFICIENT OF UTILIZATION**

| pfc | 20  |     |     |    | 70 |    |    |    | 50 |    |    |    |
|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|
|     | 80  | 70  | 50  | 30 | 80 | 70 | 50 | 30 | 80 | 70 | 50 | 30 |
| 0   | 100 | 100 | 100 | 97 | 97 | 97 | 93 | 93 | 93 | 93 | 93 | 93 |
| 1   | 92  | 88  | 84  | 90 | 85 | 82 | 82 | 80 | 85 | 82 | 80 | 80 |
| 2   | 83  | 78  | 71  | 81 | 76 | 70 | 72 | 68 | 76 | 70 | 68 | 68 |
| 3   | 77  | 68  | 61  | 75 | 67 | 60 | 65 | 59 | 70 | 60 | 65 | 59 |
| 4   | 70  | 60  | 54  | 68 | 59 | 53 | 57 | 52 | 64 | 54 | 57 | 52 |
| 5   | 65  | 55  | 47  | 64 | 54 | 46 | 52 | 46 | 60 | 46 | 52 | 46 |
| 6   | 59  | 50  | 41  | 58 | 48 | 41 | 46 | 40 | 54 | 41 | 46 | 40 |
| 7   | 56  | 45  | 38  | 55 | 44 | 38 | 42 | 36 | 50 | 38 | 42 | 36 |
| 8   | 52  | 40  | 34  | 51 | 40 | 34 | 39 | 33 | 47 | 34 | 39 | 33 |
| 9   | 48  | 38  | 30  | 47 | 36 | 30 | 35 | 29 | 43 | 30 | 35 | 29 |
| 10  | 46  | 34  | 28  | 45 | 34 | 28 | 34 | 28 | 41 | 28 | 34 | 28 |

**LIGHT DISTRIBUTION**

| DEGREES | LUMENS | % LAMP | % FIXTURE |
|---------|--------|--------|-----------|
| 0-30    | 1462   | 25.2   | 30.0      |
| 0-40    | 2415   | 41.6   | 49.6      |
| 0-60    | 4096   | 70.6   | 84.1      |
| 0-90    | 4872   | 84.0   | 100.0     |

LLF = .76 LLF = LIGHT LOSS FACTOR LLF = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90  
 LLD = 0.88 @ 40% RATED LAMP LIFE BF = .92 ELECTRONIC BALLAST & T8 LAMP (RELAMP AT 70% LAMP LIFE)

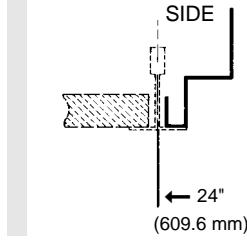
2 D G 4 40

CEILING TYPE

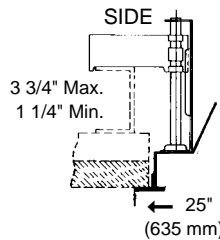
G = GRID (NEMA G)

F = FLANGE (NEMA F)

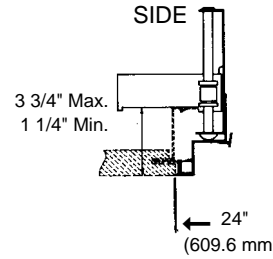
Z = (NEMA M/Z) MODULAR AND "Z" SPLINE



(NEMA Type G)  
Lay-in acoustical ceilings using exposed grid suspension, with tees for fixtures on 24" x 48" spacing.



(NEMA Type F)  
Flange for acoustical ceilings using concealed mechanical suspension. Swing-jack mounting brackets: adjustment 3 3/4" max. and 1 1/4" min.



(NEMA M/Z)  
Modular and "Z" Spline using concealed mechanical suspension. Swing-jack mounting brackets: adjustment 3 3/4" max. and 1 1/4" min.

PHOTOMETRIC DATA

CATALOG # 2DG340-FS01  
TEST #15573 S/MH=1.4

LAMPS = F40 ES  
BALLAST = ESB

INPUT WATTS = 116  
BALLAST FACTOR = .88

LER = FL-46

COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$5.22 BASED ON 3000 HRS. AND \$.08 PER KWH.

CANDLEPOWER

| Angle | End  | 45   | Cross |
|-------|------|------|-------|
| 0     | 2269 | 2269 | 2269  |
| 5     | 2266 | 2258 | 2261  |
| 10    | 2236 | 2242 | 2256  |
| 15    | 2188 | 2213 | 2241  |
| 20    | 2115 | 2168 | 2214  |
| 25    | 2024 | 2101 | 2169  |
| 30    | 1905 | 2007 | 2108  |
| 35    | 1757 | 1877 | 2024  |
| 40    | 1575 | 1706 | 1887  |
| 45    | 1370 | 1496 | 1677  |
| 50    | 1131 | 1259 | 1408  |
| 55    | 895  | 1029 | 1111  |
| 60    | 692  | 791  | 851   |
| 65    | 521  | 533  | 609   |
| 70    | 385  | 331  | 426   |
| 75    | 298  | 210  | 321   |
| 80    | 220  | 169  | 236   |
| 85    | 120  | 105  | 128   |

MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture\*

- 80-50-20 Reflectances (Ceiling-Wall-Floor)
- LLF = 0.73 2650 Lumens/Lamp very clean
- Room width divided by room height = 5 or more, 2 or 1

| Fixture Size & # of Lamps | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture |         |         |         |          |
|---------------------------|-----------------------------|------------------------------------|---------|---------|---------|----------|
|                           |                             | 10 ft-c                            | 30 ft-c | 50 ft-c | 70 ft-c | 100 ft-c |
| 2' X 4'                   | 5                           | -                                  | -       | 92      | 66      | 46       |
| 3 Lamp                    | 2                           | -                                  | 106     | 64      | 46      | 32       |
|                           | 1                           | -                                  | 78      | 47      | 33      | -        |

\*Observe Fixture S/MH Requirements for Specific Applications

AVERAGE LUMINANCE CD/SQ.M WITH 2650 LUMEN LAMPS

| ANGLE | END  | 45°  | CROSS |
|-------|------|------|-------|
| 45    | 3002 | 3278 | 3674  |
| 55    | 2417 | 2779 | 3001  |
| 65    | 1910 | 1954 | 2232  |
| 75    | 1784 | 1257 | 1921  |
| 85    | 2133 | 1866 | 2275  |

TYPICAL V.C.P.'s Room Mounting Height

| Room Size | Mounting Height |           |     |    |
|-----------|-----------------|-----------|-----|----|
|           | Lengthwise      | Crosswise | 8.5 | 10 |
| 30x30     | 59              | 63        | 57  | 61 |
| 40x40     | 56              | 59        | 53  | 57 |
| 60x30     | 61              | 65        | 60  | 64 |
| 60x60     | 52              | 55        | 50  | 52 |
| 100x100   | 48              | 50        | 47  | 48 |

LLF = .73 LLF = LIGHT LOSS FACTOR LLF = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90 LLD = 0.88 @ 40% RATED LAMP LIFE BF = 0.88 ESB BALLAST & 34W LAMP (RELAMP AT 70% LAMP LIFE)

COEFFICIENT OF UTILIZATION

| pfc | 20 |    |    | 70 |    |    | 50 |    |    |
|-----|----|----|----|----|----|----|----|----|----|
|     | 70 | 50 | 30 | 70 | 50 | 30 | 50 | 30 | 50 |
| 0   | 90 | 90 | 90 | 88 | 88 | 88 | 83 | 83 | 83 |
| 1   | 82 | 79 | 76 | 81 | 78 | 75 | 73 | 71 | 71 |
| 2   | 76 | 69 | 65 | 73 | 68 | 64 | 66 | 61 | 61 |
| 3   | 68 | 61 | 56 | 68 | 60 | 55 | 57 | 54 | 54 |
| 4   | 64 | 55 | 48 | 61 | 54 | 47 | 52 | 46 | 46 |
| 5   | 58 | 48 | 42 | 56 | 48 | 41 | 46 | 41 | 41 |
| 6   | 54 | 45 | 38 | 53 | 44 | 38 | 42 | 36 | 36 |
| 7   | 50 | 40 | 34 | 48 | 40 | 34 | 39 | 33 | 33 |
| 8   | 46 | 36 | 30 | 46 | 35 | 30 | 35 | 29 | 29 |
| 9   | 44 | 34 | 28 | 42 | 34 | 28 | 33 | 27 | 27 |
| 10  | 40 | 30 | 26 | 40 | 30 | 25 | 29 | 25 | 25 |

LIGHT DISTRIBUTION

| DEGREES | LUMENS | % LAMP | % FIXTURE |
|---------|--------|--------|-----------|
| 0-30    | 1808   | 22.7   | 30.1      |
| 0-40    | 2984   | 37.5   | 49.7      |
| 0-60    | 5055   | 63.6   | 84.1      |
| 0-90    | 6009   | 75.6   | 100.0     |

PHOTOMETRIC DATA

CATALOG # 2DG332-FS01-1/3-EB  
TEST #15557 S/MH=1.4

LAMPS = F32 T8  
BALLAST = ELECTRONIC

INPUT WATTS = 85  
BALLAST FACTOR = .93

LER = FL-77

COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$3.12 BASED ON 3000 HRS. AND \$.08 PER KWH.

CANDLEPOWER

| Angle | End  | 45   | Cross |
|-------|------|------|-------|
| 0     | 2683 | 2683 | 2683  |
| 5     | 2681 | 2676 | 2677  |
| 10    | 2646 | 2655 | 2670  |
| 15    | 2589 | 2620 | 2654  |
| 20    | 2506 | 2562 | 2612  |
| 25    | 2389 | 2481 | 2548  |
| 30    | 2248 | 2360 | 2468  |
| 35    | 2072 | 2208 | 2370  |
| 40    | 1863 | 2001 | 2197  |
| 45    | 1611 | 1746 | 1958  |
| 50    | 1324 | 1476 | 1641  |
| 55    | 1051 | 1205 | 1313  |
| 60    | 815  | 918  | 1000  |
| 65    | 612  | 632  | 716   |
| 70    | 451  | 385  | 508   |
| 75    | 349  | 249  | 374   |
| 80    | 259  | 199  | 279   |
| 85    | 140  | 122  | 147   |

MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture\*

- 80-50-20 Reflectances (Ceiling-Wall-Floor)
- LLF = 0.77 2900 Lumens/Lamp very clean
- Room width divided by room height = 5 or more, 2 or 1

| Fixture Size & # of Lamps | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture |         |         |         |          |
|---------------------------|-----------------------------|------------------------------------|---------|---------|---------|----------|
|                           |                             | 10 ft-c                            | 30 ft-c | 50 ft-c | 70 ft-c | 100 ft-c |
| 2' X 4'                   | 5                           | -                                  | -       | 114     | 81      | 57       |
| 3 Lamp                    | 2                           | -                                  | 132     | 79      | 57      | 40       |
|                           | 1                           | -                                  | 97      | 58      | 42      | -        |

\*Observe Fixture S/MH Requirements for Specific Applications

AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS

| ANGLE | END  | 45°  | CROSS |
|-------|------|------|-------|
| 45    | 3530 | 3825 | 4290  |
| 55    | 2839 | 3255 | 3546  |
| 65    | 2243 | 2317 | 2625  |
| 75    | 2089 | 1490 | 2239  |
| 85    | 2489 | 2169 | 2613  |

TYPICAL V.C.P.'s Room Mounting Height

| Room Size | Mounting Height |           |     |    |
|-----------|-----------------|-----------|-----|----|
|           | Lengthwise      | Crosswise | 8.5 | 10 |
| 30x30     | 55              | 59        | 53  | 57 |
| 40x40     | 52              | 55        | 50  | 53 |
| 60x30     | 58              | 61        | 56  | 60 |
| 60x60     | 48              | 51        | 46  | 49 |
| 100x100   | 45              | 47        | 43  | 45 |

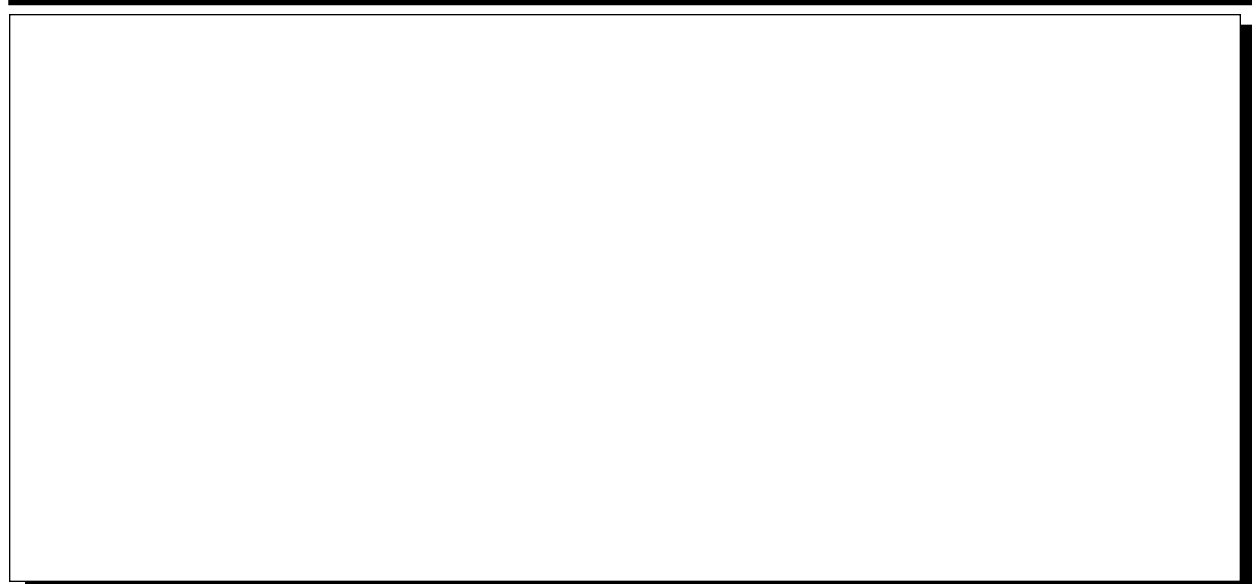
LLF = .77 LLF = LIGHT LOSS FACTOR LLF = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90 LLD = 0.88 @ 40% RATED LAMP LIFE BF = 0.93 ELECTRONIC BALLAST & T8 LAMP (RELAMP AT 70% LAMP LIFE)

COEFFICIENT OF UTILIZATION

| pfc | 20 |    |    | 70 |    |    | 50 |    |    |
|-----|----|----|----|----|----|----|----|----|----|
|     | 70 | 50 | 30 | 70 | 50 | 30 | 50 | 30 | 50 |
| 0   | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 |
| 1   | 89 | 84 | 81 | 86 | 82 | 80 | 80 | 77 | 77 |
| 2   | 81 | 75 | 69 | 79 | 72 | 68 | 70 | 67 | 67 |
| 3   | 75 | 66 | 59 | 72 | 65 | 58 | 63 | 57 | 57 |
| 4   | 68 | 58 | 52 | 67 | 57 | 52 | 56 | 51 | 51 |
| 5   | 63 | 53 | 46 | 60 | 52 | 46 | 50 | 45 | 45 |
| 6   | 57 | 47 | 40 | 56 | 46 | 40 | 46 | 40 | 40 |
| 7   | 54 | 44 | 36 | 53 | 42 | 35 | 41 | 35 | 35 |
| 8   | 51 | 40 | 33 | 48 | 39 | 33 | 38 | 32 | 32 |
| 9   | 46 | 36 | 29 | 46 | 35 | 29 | 34 | 28 | 28 |
| 10  | 44 | 34 | 27 | 42 | 33 | 27 | 33 | 27 | 27 |

LIGHT DISTRIBUTION

| DEGREES | LUMENS | % LAMP | % FIXTURE |
|---------|--------|--------|-----------|
| 0-30    | 2135   | 24.5   | 30.2      |
| 0-40    | 3515   | 40.4   | 49.8      |
| 0-60    | 5940   | 68.3   | 84.1      |
| 0-90    | 7063   | 81.2   | 100.0     |



| <b>PHOTOMETRIC DATA</b>  |                             | CATALOG # 2DG440-FS01<br>TEST # 15567                      | S/MH= 1.4     | LAMPS = F40 ES<br>BALLAST = ESB   | INPUT WATTS = 142<br>BALLAST FACTOR = .88 | LER = FL-48    |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|--|-----------------------------|--|---------------|---|---|----------------|---|-----------------------------|------------------------------------|----|----------------------------------|--------|--------|-----------|---------|---------|---------|----------|-------------------|-------------|-----------------|---------------|-----------------|----------------|----------------|------|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|---------|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$5.00 BASED ON 3000 HRS. AND \$.08 PER KWH. |                             |  |               |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>CANDLEPOWER</b>   |                             | <b>MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture*</b> |               |   | <b>COEFFICIENT OF UTILIZATION</b>         |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Angle  | End                         | 45   | Cross         | <ul style="list-style-type: none"> <li>80-50-20 Reflectances (Ceiling-Wall-Floor)</li> <li>LLF = 0.73 2650 Lumens/Lamp very clean</li> <li>Room width divided by room height = 5 or more, 2 or 1</li> </ul>   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0  | 2938                        | 2938   | 2938          | <table border="1"> <tr> <th rowspan="2">Fixture Size &amp; # of Lamps</th> <th rowspan="2">Room Width<br/>Room Height =</th> <th colspan="5">Approx. Area (sq. ft.) per Fixture</th> </tr> <tr> <th>10 ft-c</th> <th>30 ft-c</th> <th>50 ft-c</th> <th>70 ft-c</th> <th>100 ft-c</th> </tr> <tr> <td>2' X 4'<br/>4 Lamp</td> <td>5<br/>2<br/>1</td> <td>-<br/>137<br/>101</td> <td>-<br/>82<br/>60</td> <td>118<br/>82<br/>43</td> <td>84<br/>59<br/>41</td> <td>59<br/>41<br/>30</td> </tr> </table>   |   |                | Fixture Size & # of Lamps                       | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture |    |                                  |        |        | 10 ft-c   | 30 ft-c | 50 ft-c | 70 ft-c | 100 ft-c | 2' X 4'<br>4 Lamp | 5<br>2<br>1 | -<br>137<br>101 | -<br>82<br>60 | 118<br>82<br>43 | 84<br>59<br>41 | 59<br>41<br>30 |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Fixture Size & # of Lamps  | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture                         |               |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|  |                             | 10 ft-c  | 30 ft-c       | 50 ft-c   | 70 ft-c                                   | 100 ft-c       |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2' X 4'<br>4 Lamp  | 5<br>2<br>1                 | -<br>137<br>101  | -<br>82<br>60 | 118<br>82<br>43   | 84<br>59<br>41                            | 59<br>41<br>30 |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 5  | 2934                        | 2933   | 2930          | <table border="1"> <tr> <th rowspan="2">pfc</th> <th colspan="3">20</th> <th colspan="3">50</th> </tr> <tr> <th>70</th> <th>50</th> <th>30</th> <th>70</th> <th>50</th> <th>30</th> </tr> <tr> <td>0</td> <td>86</td> <td>86</td> <td>86</td> <td>84</td> <td>84</td> <td>81</td> </tr> <tr> <td>1</td> <td>80</td> <td>76</td> <td>72</td> <td>78</td> <td>75</td> <td>71</td> </tr> <tr> <td>2</td> <td>72</td> <td>67</td> <td>63</td> <td>70</td> <td>66</td> <td>63</td> </tr> <tr> <td>3</td> <td>67</td> <td>59</td> <td>54</td> <td>65</td> <td>57</td> <td>53</td> </tr> <tr> <td>4</td> <td>60</td> <td>53</td> <td>46</td> <td>59</td> <td>52</td> <td>46</td> </tr> <tr> <td>5</td> <td>56</td> <td>47</td> <td>40</td> <td>55</td> <td>46</td> <td>40</td> </tr> <tr> <td>6</td> <td>52</td> <td>42</td> <td>36</td> <td>51</td> <td>41</td> <td>35</td> </tr> <tr> <td>7</td> <td>48</td> <td>39</td> <td>33</td> <td>46</td> <td>39</td> <td>33</td> </tr> <tr> <td>8</td> <td>45</td> <td>35</td> <td>29</td> <td>44</td> <td>34</td> <td>29</td> </tr> <tr> <td>9</td> <td>41</td> <td>33</td> <td>27</td> <td>40</td> <td>32</td> <td>27</td> </tr> <tr> <td>10</td> <td>40</td> <td>29</td> <td>25</td> <td>39</td> <td>29</td> <td>25</td> </tr> </table> |   |                | pfc   | 20                          |                                    |    | 50                               |        |        | 70        | 50      | 30      | 70      | 50       | 30                | 0           | 86              | 86            | 86              | 84             | 84             | 81   | 1    | 80   | 76   | 72    | 78 | 75 | 71 | 2  | 72 | 67 | 63 | 70   | 66   | 63   | 3     | 67 | 59 | 54 | 65 | 57 | 53 | 4  | 60   | 53   | 46   | 59    | 52 | 46 | 5  | 56 | 47 | 40 | 55 | 46   | 40   | 6    | 52    | 42 | 36 | 51 | 41 | 35 | 7  | 48 | 39   | 33   | 46   | 39      | 33 | 8  | 45 | 35 | 29 | 44 | 34 | 29 | 9 | 41 | 33 | 27 | 40 | 32 | 27 | 10 | 40 | 29 | 25 | 39 | 29 | 25 |
| pfc  | 20                          |  |               | 50  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|  | 70                          | 50   | 30            | 70  | 50  | 30             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0  | 86                          | 86   | 86            | 84  | 84  | 81             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 1  | 80                          | 76   | 72            | 78  | 75  | 71             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2  | 72                          | 67   | 63            | 70  | 66  | 63             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 3  | 67                          | 59   | 54            | 65  | 57  | 53             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 4  | 60                          | 53   | 46            | 59  | 52  | 46             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 5  | 56                          | 47   | 40            | 55  | 46  | 40             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 6  | 52                          | 42   | 36            | 51  | 41  | 35             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 7  | 48                          | 39   | 33            | 46  | 39  | 33             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 8  | 45                          | 35   | 29            | 44  | 34  | 29             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 9  | 41                          | 33   | 27            | 40  | 32  | 27             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10   | 40                          | 29   | 25            | 39  | 29  | 25             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10   | 2896                        | 2913   | 2924          | <table border="1"> <tr> <th colspan="4">AVERAGE LUMINANCE CD/SQ.M WITH 2650 LUMEN LAMPS</th> <th colspan="4">TYPICAL V.C.P.'s Mounting Height</th> </tr> <tr> <th>ANGLE</th> <th>END</th> <th>45°</th> <th>CROSS</th> <th>Room Size</th> <th>Lengthwise</th> <th>Crosswise</th> <th>8.5</th> <th>10</th> <th>8.5</th> <th>10</th> </tr> <tr> <td>45</td> <td>3885</td> <td>4213</td> <td>4673</td> <td>30x30</td> <td>53</td> <td>57</td> <td>51</td> <td>55</td> <td>53</td> <td>57</td> </tr> <tr> <td>55</td> <td>3103</td> <td>3528</td> <td>3765</td> <td>40x40</td> <td>50</td> <td>53</td> <td>48</td> <td>51</td> <td>46</td> <td>49</td> </tr> <tr> <td>65</td> <td>2401</td> <td>2460</td> <td>2727</td> <td>60x30</td> <td>56</td> <td>60</td> <td>55</td> <td>59</td> <td>52</td> <td>56</td> </tr> <tr> <td>75</td> <td>2257</td> <td>1640</td> <td>2400</td> <td>60x60</td> <td>46</td> <td>49</td> <td>44</td> <td>47</td> <td>42</td> <td>45</td> </tr> <tr> <td>85</td> <td>2791</td> <td>2257</td> <td>2880</td> <td>100x100</td> <td>43</td> <td>45</td> <td>41</td> <td>43</td> <td>37</td> <td>39</td> </tr> </table>  |   |                | AVERAGE LUMINANCE CD/SQ.M WITH 2650 LUMEN LAMPS |                             |                                    |    | TYPICAL V.C.P.'s Mounting Height |        |        |           | ANGLE   | END     | 45°     | CROSS    | Room Size         | Lengthwise  | Crosswise       | 8.5           | 10              | 8.5            | 10             | 45   | 3885 | 4213 | 4673 | 30x30 | 53 | 57 | 51 | 55 | 53 | 57 | 55 | 3103 | 3528 | 3765 | 40x40 | 50 | 53 | 48 | 51 | 46 | 49 | 65 | 2401 | 2460 | 2727 | 60x30 | 56 | 60 | 55 | 59 | 52 | 56 | 75 | 2257 | 1640 | 2400 | 60x60 | 46 | 49 | 44 | 47 | 42 | 45 | 85 | 2791 | 2257 | 2880 | 100x100 | 43 | 45 | 41 | 43 | 37 | 39 |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| AVERAGE LUMINANCE CD/SQ.M WITH 2650 LUMEN LAMPS  |                             |  |               | TYPICAL V.C.P.'s Mounting Height  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ANGLE  | END                         | 45°  | CROSS         | Room Size   | Lengthwise                                | Crosswise      | 8.5   | 10                          | 8.5                                | 10 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 45   | 3885                        | 4213   | 4673          | 30x30   | 53  | 57             | 51  | 55                          | 53                                 | 57 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 55   | 3103                        | 3528   | 3765          | 40x40   | 50  | 53             | 48  | 51                          | 46                                 | 49 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 65   | 2401                        | 2460   | 2727          | 60x30   | 56  | 60             | 55  | 59                          | 52                                 | 56 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75   | 2257                        | 1640   | 2400          | 60x60   | 46  | 49             | 44  | 47                          | 42                                 | 45 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 85   | 2791                        | 2257   | 2880          | 100x100   | 43  | 45             | 41  | 43                          | 37                                 | 39 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 15   | 2835                        | 2876   | 2906          | *Observe Fixture S/MH Requirements for Specific Applications  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 20   | 2742                        | 2816   | 2871          | <table border="1"> <tr> <th colspan="4">AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS</th> <th colspan="4">TYPICAL V.C.P.'s Mounting Height</th> </tr> <tr> <th>ANGLE</th> <th>END</th> <th>45°</th> <th>CROSS</th> <th>Room Size</th> <th>Lengthwise</th> <th>Crosswise</th> <th>8.5</th> <th>10</th> <th>8.5</th> <th>10</th> </tr> <tr> <td>45</td> <td>4590</td> <td>4963</td> <td>5532</td> <td>30x30</td> <td>49</td> <td>53</td> <td>47</td> <td>51</td> <td>45</td> <td>49</td> </tr> <tr> <td>55</td> <td>3695</td> <td>4160</td> <td>4497</td> <td>40x40</td> <td>45</td> <td>49</td> <td>43</td> <td>47</td> <td>42</td> <td>45</td> </tr> <tr> <td>65</td> <td>2848</td> <td>2922</td> <td>3299</td> <td>60x30</td> <td>52</td> <td>56</td> <td>50</td> <td>54</td> <td>46</td> <td>49</td> </tr> <tr> <td>75</td> <td>2676</td> <td>1945</td> <td>2861</td> <td>60x60</td> <td>42</td> <td>45</td> <td>40</td> <td>42</td> <td>37</td> <td>39</td> </tr> <tr> <td>85</td> <td>3271</td> <td>2666</td> <td>3537</td> <td>100x100</td> <td>39</td> <td>41</td> <td>37</td> <td>39</td> <td>33</td> <td>37</td> </tr> </table>  |   |                | AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS |                             |                                    |    | TYPICAL V.C.P.'s Mounting Height |        |        |           | ANGLE   | END     | 45°     | CROSS    | Room Size         | Lengthwise  | Crosswise       | 8.5           | 10              | 8.5            | 10             | 45   | 4590 | 4963 | 5532 | 30x30 | 49 | 53 | 47 | 51 | 45 | 49 | 55 | 3695 | 4160 | 4497 | 40x40 | 45 | 49 | 43 | 47 | 42 | 45 | 65 | 2848 | 2922 | 3299 | 60x30 | 52 | 56 | 50 | 54 | 46 | 49 | 75 | 2676 | 1945 | 2861 | 60x60 | 42 | 45 | 40 | 42 | 37 | 39 | 85 | 3271 | 2666 | 3537 | 100x100 | 39 | 41 | 37 | 39 | 33 | 37 |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS  |                             |  |               | TYPICAL V.C.P.'s Mounting Height  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ANGLE  | END                         | 45°  | CROSS         | Room Size   | Lengthwise                                | Crosswise      | 8.5   | 10                          | 8.5                                | 10 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 45   | 4590                        | 4963   | 5532          | 30x30   | 49  | 53             | 47  | 51                          | 45                                 | 49 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 55   | 3695                        | 4160   | 4497          | 40x40   | 45  | 49             | 43  | 47                          | 42                                 | 45 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 65   | 2848                        | 2922   | 3299          | 60x30   | 52  | 56             | 50  | 54                          | 46                                 | 49 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75   | 2676                        | 1945   | 2861          | 60x60   | 42  | 45             | 40  | 42                          | 37                                 | 39 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 85   | 3271                        | 2666   | 3537          | 100x100   | 39  | 41             | 37  | 39                          | 33                                 | 37 |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 25   | 2618                        | 2728   | 2811          | <table border="1"> <tr> <th colspan="4">LIGHT DISTRIBUTION</th> </tr> <tr> <th>DEGREES</th> <th>LUMENS</th> <th>% LAMP</th> <th>% FIXTURE</th> </tr> <tr> <td>0-30</td> <td>2344</td> <td>22.1</td> <td>30.4</td> </tr> <tr> <td>0-40</td> <td>3866</td> <td>36.5</td> <td>50.1</td> </tr> <tr> <td>0-60</td> <td>6509</td> <td>61.4</td> <td>84.4</td> </tr> <tr> <td>0-90</td> <td>7713</td> <td>72.8</td> <td>100.0</td> </tr> </table>  |   |                | LIGHT DISTRIBUTION                              |                             |                                    |    | DEGREES                          | LUMENS | % LAMP | % FIXTURE | 0-30    | 2344    | 22.1    | 30.4     | 0-40              | 3866        | 36.5            | 50.1          | 0-60            | 6509           | 61.4           | 84.4 | 0-90 | 7713 | 72.8 | 100.0 |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| LIGHT DISTRIBUTION   |                             |  |               |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| DEGREES  | LUMENS                      | % LAMP   | % FIXTURE     |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-30   | 2344                        | 22.1   | 30.4          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-40   | 3866                        | 36.5   | 50.1          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-60   | 6509                        | 61.4   | 84.4          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-90   | 7713                        | 72.8   | 100.0         |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 30   | 2463                        | 2602   | 2734          | <p>LLF = .73 LLF = LIGHT LOSS FACTOR LLF = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90<br/>LLD = 0.88 @ 40% RATED LAMP LIFE BF = 0.88 ESB BALLAST &amp; 34W LAMP (RELAMP AT 70% LAMP LIFE)</p>  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 35   | 2273                        | 2441   | 2610          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 40   | 2040                        | 2211   | 2418          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 45   | 1773                        | 1923   | 2133          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 50   | 1453                        | 1611   | 1766          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 55   | 1149                        | 1306   | 1394          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 60   | 885                         | 989  | 1044          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 65   | 655                         | 671  | 744           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 70   | 490                         | 425  | 526           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75   | 377                         | 274  | 401           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 80   | 286                         | 216  | 301           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 85   | 157                         | 127  | 162           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |               |                 |                |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |

| <b>PHOTOMETRIC DATA</b>  |                             | CATALOG # 2DG432-FS01-1/4-EB<br>TEST # 15564               | S/MH= 1.4      | LAMPS = F32 T8<br>BALLAST = ELECTRONIC  | INPUT WATTS = 108<br>BALLAST FACTOR = .91 | LER = FL-77    |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|--|-----------------------------|--|----------------|---|---|----------------|---|-----------------------------|------------------------------------|----|----------------------------------|--------|--------|-----------|---------|---------|---------|----------|-------------------|-------------|-----------------|----------------|------------------|-----------------|----------------|------|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|-------|----|----|----|----|----|----|----|------|------|------|---------|----|----|----|----|----|----|----|----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| COMPARATIVE YEARLY LIGHTING ENERGY COST PER 1000 LUMENS = \$3.12 BASED ON 3000 HRS. AND \$.08 PER KWH. |                             |  |                |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>CANDLEPOWER</b>   |                             | <b>MAINTAINED ILLUMINATION TABLE- Square Feet/Fixture*</b> |                |   | <b>COEFFICIENT OF UTILIZATION</b>         |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Angle  | End                         | 45   | Cross          | <ul style="list-style-type: none"> <li>80-50-20 Reflectances (Ceiling-Wall-Floor)</li> <li>LLF = 0.75 2900 Lumens/Lamp very clean</li> <li>Room width divided by room height = 5 or more, 2 or 1</li> </ul>   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0  | 3496                        | 3496   | 3496           | <table border="1"> <tr> <th rowspan="2">Fixture Size &amp; # of Lamps</th> <th rowspan="2">Room Width<br/>Room Height =</th> <th colspan="5">Approx. Area (sq. ft.) per Fixture</th> </tr> <tr> <th>10 ft-c</th> <th>30 ft-c</th> <th>50 ft-c</th> <th>70 ft-c</th> <th>100 ft-c</th> </tr> <tr> <td>2' X 4'<br/>4 Lamp</td> <td>5<br/>2<br/>1</td> <td>-<br/>144<br/>100</td> <td>-<br/>103<br/>72</td> <td>144<br/>103<br/>72</td> <td>103<br/>72<br/>50</td> <td>72<br/>50<br/>37</td> </tr> </table>  |   |                | Fixture Size & # of Lamps                       | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture |    |                                  |        |        | 10 ft-c   | 30 ft-c | 50 ft-c | 70 ft-c | 100 ft-c | 2' X 4'<br>4 Lamp | 5<br>2<br>1 | -<br>144<br>100 | -<br>103<br>72 | 144<br>103<br>72 | 103<br>72<br>50 | 72<br>50<br>37 |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Fixture Size & # of Lamps  | Room Width<br>Room Height = | Approx. Area (sq. ft.) per Fixture                         |                |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|  |                             | 10 ft-c  | 30 ft-c        | 50 ft-c   | 70 ft-c                                   | 100 ft-c       |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2' X 4'<br>4 Lamp  | 5<br>2<br>1                 | -<br>144<br>100  | -<br>103<br>72 | 144<br>103<br>72  | 103<br>72<br>50                           | 72<br>50<br>37 |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 5  | 3498                        | 3484   | 3480           | <table border="1"> <tr> <th rowspan="2">pfc</th> <th colspan="3">20</th> <th colspan="3">50</th> </tr> <tr> <th>70</th> <th>50</th> <th>30</th> <th>70</th> <th>50</th> <th>30</th> </tr> <tr> <td>0</td> <td>93</td> <td>93</td> <td>93</td> <td>92</td> <td>92</td> <td>86</td> </tr> <tr> <td>1</td> <td>85</td> <td>82</td> <td>79</td> <td>83</td> <td>81</td> <td>78</td> </tr> <tr> <td>2</td> <td>79</td> <td>72</td> <td>68</td> <td>77</td> <td>70</td> <td>68</td> </tr> <tr> <td>3</td> <td>71</td> <td>64</td> <td>57</td> <td>69</td> <td>63</td> <td>57</td> </tr> <tr> <td>4</td> <td>66</td> <td>56</td> <td>51</td> <td>65</td> <td>56</td> <td>50</td> </tr> <tr> <td>5</td> <td>60</td> <td>52</td> <td>45</td> <td>59</td> <td>51</td> <td>44</td> </tr> <tr> <td>6</td> <td>56</td> <td>46</td> <td>40</td> <td>55</td> <td>46</td> <td>39</td> </tr> <tr> <td>7</td> <td>53</td> <td>41</td> <td>35</td> <td>51</td> <td>41</td> <td>34</td> </tr> <tr> <td>8</td> <td>48</td> <td>39</td> <td>32</td> <td>47</td> <td>38</td> <td>32</td> </tr> <tr> <td>9</td> <td>46</td> <td>35</td> <td>28</td> <td>45</td> <td>34</td> <td>28</td> </tr> <tr> <td>10</td> <td>42</td> <td>33</td> <td>27</td> <td>41</td> <td>32</td> <td>27</td> </tr> </table> |   |                | pfc   | 20                          |                                    |    | 50                               |        |        | 70        | 50      | 30      | 70      | 50       | 30                | 0           | 93              | 93             | 93               | 92              | 92             | 86   | 1    | 85   | 82   | 79    | 83 | 81 | 78 | 2  | 79 | 72 | 68 | 77   | 70   | 68   | 3     | 71 | 64 | 57 | 69 | 63 | 57 | 4  | 66   | 56   | 51   | 65    | 56 | 50 | 5  | 60 | 52 | 45 | 59 | 51   | 44   | 6    | 56    | 46 | 40 | 55 | 46 | 39 | 7  | 53 | 41   | 35   | 51   | 41      | 34 | 8  | 48 | 39 | 32 | 47 | 38 | 32 | 9 | 46 | 35 | 28 | 45 | 34 | 28 | 10 | 42 | 33 | 27 | 41 | 32 | 27 |
| pfc  | 20                          |  |                | 50  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
|  | 70                          | 50   | 30             | 70  | 50  | 30             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0  | 93                          | 93   | 93             | 92  | 92  | 86             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 1  | 85                          | 82   | 79             | 83  | 81  | 78             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 2  | 79                          | 72   | 68             | 77  | 70  | 68             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 3  | 71                          | 64   | 57             | 69  | 63  | 57             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 4  | 66                          | 56   | 51             | 65  | 56  | 50             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 5  | 60                          | 52   | 45             | 59  | 51  | 44             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 6  | 56                          | 46   | 40             | 55  | 46  | 39             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 7  | 53                          | 41   | 35             | 51  | 41  | 34             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 8  | 48                          | 39   | 32             | 47  | 38  | 32             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 9  | 46                          | 35   | 28             | 45  | 34  | 28             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10   | 42                          | 33   | 27             | 41  | 32  | 27             |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 10   | 3455                        | 3458   | 3473           | <table border="1"> <tr> <th colspan="4">LIGHT DISTRIBUTION</th> </tr> <tr> <th>DEGREES</th> <th>LUMENS</th> <th>% LAMP</th> <th>% FIXTURE</th> </tr> <tr> <td>0-30</td> <td>2782</td> <td>24.0</td> <td>30.5</td> </tr> <tr> <td>0-40</td> <td>4577</td> <td>39.5</td> <td>50.1</td> </tr> <tr> <td>0-60</td> <td>7700</td> <td>66.4</td> <td>84.3</td> </tr> <tr> <td>0-90</td> <td>9133</td> <td>78.7</td> <td>100.0</td> </tr> </table>  |   |                | LIGHT DISTRIBUTION                              |                             |                                    |    | DEGREES                          | LUMENS | % LAMP | % FIXTURE | 0-30    | 2782    | 24.0    | 30.5     | 0-40              | 4577        | 39.5            | 50.1           | 0-60             | 7700            | 66.4           | 84.3 | 0-90 | 9133 | 78.7 | 100.0 |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| LIGHT DISTRIBUTION   |                             |  |                |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| DEGREES  | LUMENS                      | % LAMP   | % FIXTURE      |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-30   | 2782                        | 24.0   | 30.5           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-40   | 4577                        | 39.5   | 50.1           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-60   | 7700                        | 66.4   | 84.3           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0-90   | 9133                        | 78.7   | 100.0          |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 15   | 3379                        | 3416   | 3453           | *Observe Fixture S/MH Requirements for Specific Applications  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 20   | 3267                        | 3338   | 3402           | <table border="1"> <tr> <th colspan="4">AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS</th> <th colspan="4">TYPICAL V.C.P.'s Mounting Height</th> </tr> <tr> <th>ANGLE</th> <th>END</th> <th>45°</th> <th>CROSS</th> <th>Room Size</th> <th>Lengthwise</th> <th>Crosswise</th> <th>8.5</th> <th>10</th> <th>8.5</th> <th>10</th> </tr> <tr> <td>45</td> <td>4590</td> <td>4963</td> <td>5532</td> <td>30x30</td> <td>49</td> <td>53</td> <td>47</td> <td>51</td> <td>45</td> <td>49</td> </tr> <tr> <td>55</td> <td>3695</td> <td>4160</td> <td>4497</td> <td>40x40</td> <td>45</td> <td>49</td> <td>43</td> <td>47</td> <td>42</td> <td>45</td> </tr> <tr> <td>65</td> <td>2848</td> <td>2922</td> <td>3299</td> <td>60x30</td> <td>52</td> <td>56</td> <td>50</td> <td>54</td> <td>46</td> <td>49</td> </tr> <tr> <td>75</td> <td>2676</td> <td>1945</td> <td>2861</td> <td>60x60</td> <td>42</td> <td>45</td> <td>40</td> <td>42</td> <td>37</td> <td>39</td> </tr> <tr> <td>85</td> <td>3271</td> <td>2666</td> <td>3537</td> <td>100x100</td> <td>39</td> <td>41</td> <td>37</td> <td>39</td> <td>33</td> <td>37</td> </tr> </table>  |   |                | AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS |                             |                                    |    | TYPICAL V.C.P.'s Mounting Height |        |        |           | ANGLE   | END     | 45°     | CROSS    | Room Size         | Lengthwise  | Crosswise       | 8.5            | 10               | 8.5             | 10             | 45   | 4590 | 4963 | 5532 | 30x30 | 49 | 53 | 47 | 51 | 45 | 49 | 55 | 3695 | 4160 | 4497 | 40x40 | 45 | 49 | 43 | 47 | 42 | 45 | 65 | 2848 | 2922 | 3299 | 60x30 | 52 | 56 | 50 | 54 | 46 | 49 | 75 | 2676 | 1945 | 2861 | 60x60 | 42 | 45 | 40 | 42 | 37 | 39 | 85 | 3271 | 2666 | 3537 | 100x100 | 39 | 41 | 37 | 39 | 33 | 37 |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| AVERAGE LUMINANCE CD/SQ.M WITH 2900 LUMEN LAMPS  |                             |  |                | TYPICAL V.C.P.'s Mounting Height  |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| ANGLE  | END                         | 45°  | CROSS          | Room Size   | Lengthwise                                | Crosswise      | 8.5   | 10                          | 8.5                                | 10 |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 45   | 4590                        | 4963   | 5532           | 30x30   | 49  | 53             | 47  | 51                          | 45                                 | 49 |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 55   | 3695                        | 4160   | 4497           | 40x40   | 45  | 49             | 43  | 47                          | 42                                 | 45 |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 65   | 2848                        | 2922   | 3299           | 60x30   | 52  | 56             | 50  | 54                          | 46                                 | 49 |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75   | 2676                        | 1945   | 2861           | 60x60   | 42  | 45             | 40  | 42                          | 37                                 | 39 |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 85   | 3271                        | 2666   | 3537           | 100x100   | 39  | 41             | 37  | 39                          | 33                                 | 37 |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 25   | 3115                        | 3232   | 3324           | <p>LLF = .75 LLF = LIGHT LOSS FACTOR LLF = LDD X LLD X BF LDD = VERY CLEAN 0.94 CLEAN 0.90<br/>LLD = 0.88 @ 40% RATED LAMP LIFE BF = .91 ELECTRONIC BALLAST &amp; T8 LAMP (RELAMP AT 70% LAMP LIFE)</p>   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 30   | 2934                        | 3073   | 3218           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 35   | 2702                        | 2870   | 3077           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 40   | 2422                        | 2602   | 2845           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 45   | 2095                        | 2265   | 2525           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 50   | 1715                        | 1885   | 2112           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 55   | 1368                        | 1540   | 1665           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 60   | 1055                        | 1168   | 1263           |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 65   | 777                         | 797  | 900            |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 70   | 583                         | 499  | 634            |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 75   | 447                         | 325  | 478            |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 80   | 336                         | 256  | 356            |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 85   | 184                         | 150  | 199            |   |   |                |   |                             |                                    |    |                                  |        |        |           |         |         |         |          |                   |             |                 |                |                  |                 |                |      |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |       |    |    |    |    |    |    |    |      |      |      |         |    |    |    |    |    |    |    |    |   |    |    |    |    |    |    |    |    |    |    |    |    |    |