



# LUMINAIRE TESTING LABORATORY, INC.



SUSTAINING  
MEMBER

905 Harrison Street · Allentown, PA 18103 · (610) 770-1044 · Fax (610) 770-8912 · [www.LuminaireTesting.com](http://www.LuminaireTesting.com)

LTL NUMBER: 06074

DATE: 08-17-2001

PREPARED FOR: VANTAGE LUMINAIRES

CATALOG NUMBER: 7HF2X18E1-07616SCL/SCL

LUMINAIRE: FORMED STEEL HOUSING, SPUN SPECULAR ALUMINUM REFLECTOR,  
CLEAR FRESNEL GLASS LENS ABOVE SPUN SEMI-SPECULAR ALUMINUM  
LOWER REFLECTOR.

LAMPS: TWO SYLVANIA CF18DD/E/835 RATED AT 1250 LUMENS EACH.

BALLAST: ONE ADVANCE ICF-2S18-H1-LD

MOUNTING: RECESSED

TOTAL INPUT WATTS = 35.6 AT 120.0 VOLTS

THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

## CANDELA DISTRIBUTION

|    | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 | 112.5 | 135.0 | 157.5 | 180.0 | FLUX |
|----|-----|------|------|------|------|-------|-------|-------|-------|------|
| 0  | 569 | 569  | 569  | 569  | 569  | 569   | 569   | 569   | 569   |      |
| 5  | 574 | 610  | 656  | 666  | 669  | 648   | 618   | 567   | 548   | 59   |
| 15 | 546 | 636  | 696  | 690  | 666  | 640   | 599   | 548   | 468   | 174  |
| 25 | 394 | 509  | 564  | 611  | 612  | 542   | 439   | 334   | 269   | 229  |
| 35 | 216 | 257  | 277  | 347  | 360  | 350   | 285   | 158   | 129   | 175  |
| 45 | 142 | 163  | 161  | 175  | 179  | 168   | 151   | 139   | 136   | 122  |
| 55 | 77  | 85   | 90   | 93   | 90   | 86    | 78    | 74    | 70    | 77   |
| 65 | 36  | 43   | 44   | 45   | 43   | 40    | 40    | 35    | 31    | 42   |
| 75 | 14  | 11   | 11   | 13   | 14   | 13    | 10    | 11    | 9     | 15   |
| 85 | 0   | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    |
| 90 | 0   | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0    |

## ZONAL LUMEN SUMMARY

| ZONE   | LUMENS | %LAMP | %FIXT |
|--------|--------|-------|-------|
| 0- 30  | 463    | 18.5  | 51.8  |
| 0- 40  | 638    | 25.5  | 71.4  |
| 0- 60  | 837    | 33.5  | 93.6  |
| 0- 90  | 894    | 35.8  | 100.0 |
| 90-180 | 0      | 0.0   | 0.0   |
| 0-180  | 894    | 35.8  | 100.0 |

TOTAL LUMINAIRE EFFICIENCY: 35.8%

CIE TYPE: DIRECT

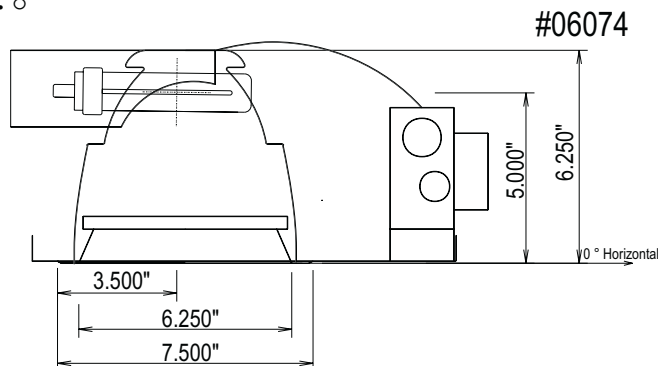
PLANE: 0-DEG 90-DEG 180-DEG

SPACING CRITERIA: 1.0 1.3 0.8

LUMINOUS DIAMETER: 6.250

## LUMINANCE IN CANDELA PER SQUARE METER

| ANGLE<br>IN DEG | AVERAGE<br>0-DEG | AVERAGE<br>45-DEG | AVERAGE<br>90-DEG |
|-----------------|------------------|-------------------|-------------------|
| 0               | 28745.           | 28745.            | 28745.            |
| 45              | 10145.           | 11502.            | 12788.            |
| 55              | 6782.            | 7927.             | 7927.             |
| 65              | 4303.            | 5260.             | 5140.             |
| 75              | 2733.            | 2147.             | 2733.             |
| 85              | 0.               | 0.                | 0.                |



TESTED BY HERSCHEL SCHRECK  
CHECKED BY MIKE GRATHER

THIS REPORT BASED ON LM-41 AND OTHER PERTINENT IES PROCEDURES.



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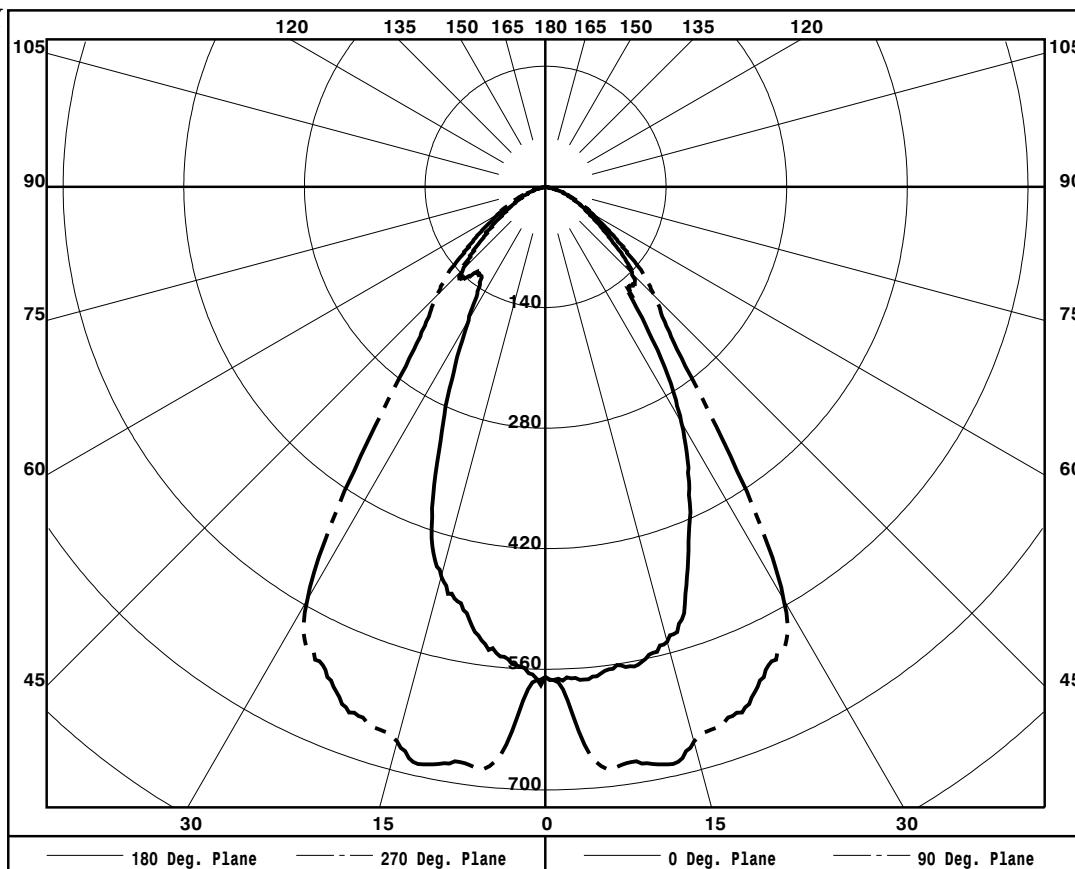
PREPARED FOR: VANTAGE LUMINAIRES

CANDELA DISTRIBUTION

|    | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 | 112.5 | 135.0 | 157.5 | 180.0 |
|----|-----|------|------|------|------|-------|-------|-------|-------|
| 0  | 569 | 569  | 569  | 569  | 569  | 569   | 569   | 569   | 569   |
| 5  | 574 | 610  | 656  | 666  | 669  | 648   | 618   | 567   | 548   |
| 10 | 565 | 643  | 677  | 682  | 679  | 651   | 624   | 574   | 509   |
| 15 | 546 | 636  | 696  | 690  | 666  | 640   | 599   | 548   | 468   |
| 20 | 481 | 582  | 653  | 659  | 650  | 596   | 538   | 460   | 382   |
| 25 | 394 | 509  | 564  | 611  | 612  | 542   | 439   | 334   | 269   |
| 30 | 315 | 405  | 477  | 544  | 553  | 508   | 376   | 221   | 179   |
| 35 | 216 | 257  | 277  | 347  | 360  | 350   | 285   | 158   | 129   |
| 40 | 151 | 170  | 180  | 220  | 227  | 218   | 185   | 142   | 136   |
| 45 | 142 | 163  | 161  | 175  | 179  | 168   | 151   | 139   | 136   |
| 50 | 108 | 122  | 127  | 134  | 135  | 127   | 113   | 104   | 99    |
| 55 | 77  | 85   | 90   | 93   | 90   | 86    | 78    | 74    | 70    |
| 60 | 54  | 61   | 62   | 64   | 64   | 61    | 57    | 51    | 47    |
| 65 | 36  | 43   | 44   | 45   | 43   | 40    | 40    | 35    | 31    |
| 70 | 27  | 29   | 30   | 31   | 28   | 27    | 25    | 23    | 23    |
| 75 | 14  | 11   | 11   | 13   | 14   | 13    | 10    | 11    | 9     |
| 80 | 0   | 0    | 0    | 2    | 0    | 0     | 0     | 0     | 0     |
| 85 | 0   | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     |
| 90 | 0   | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     |

ZONAL LUMEN SUMMARY

|        |      |
|--------|------|
| 0- 5   | 14.  |
| 5- 10  | 46.  |
| 10- 15 | 75.  |
| 15- 20 | 99.  |
| 20- 25 | 112. |
| 25- 30 | 117. |
| 30- 35 | 103. |
| 35- 40 | 72.  |
| 40- 45 | 64.  |
| 45- 50 | 58.  |
| 50- 55 | 45.  |
| 55- 60 | 33.  |
| 60- 65 | 25.  |
| 65- 70 | 17.  |
| 70- 75 | 11.  |
| 75- 80 | 4.   |
| 80- 85 | 0.   |
| 85- 90 | 0.   |





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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

| RC | 80 |    |    |    | 70 |    |    |    | 50 |    |    | 30 |    |    | 10 |    |    | 0  |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0  | 43 | 43 | 43 | 43 | 42 | 42 | 42 | 42 | 40 | 40 | 40 | 38 | 38 | 38 | 36 | 36 | 36 | 36 |
| 1  | 40 | 39 | 38 | 37 | 39 | 38 | 37 | 37 | 37 | 36 | 35 | 35 | 35 | 34 | 34 | 34 | 33 | 33 |
| 2  | 38 | 36 | 34 | 33 | 37 | 35 | 34 | 32 | 34 | 33 | 32 | 33 | 32 | 31 | 32 | 31 | 30 | 30 |
| 3  | 35 | 33 | 31 | 29 | 35 | 32 | 30 | 29 | 31 | 30 | 28 | 30 | 29 | 28 | 30 | 28 | 27 | 27 |
| 4  | 33 | 30 | 28 | 26 | 32 | 30 | 27 | 26 | 29 | 27 | 25 | 28 | 26 | 25 | 27 | 26 | 25 | 24 |
| 5  | 31 | 27 | 25 | 23 | 30 | 27 | 25 | 23 | 26 | 24 | 23 | 26 | 24 | 23 | 25 | 24 | 22 | 22 |
| 6  | 29 | 25 | 23 | 21 | 29 | 25 | 23 | 21 | 25 | 22 | 21 | 24 | 22 | 21 | 23 | 22 | 21 | 20 |
| 7  | 27 | 23 | 21 | 19 | 27 | 23 | 21 | 19 | 23 | 21 | 19 | 22 | 20 | 19 | 22 | 20 | 19 | 18 |
| 8  | 26 | 22 | 19 | 17 | 25 | 21 | 19 | 17 | 21 | 19 | 17 | 20 | 19 | 17 | 20 | 18 | 17 | 16 |
| 9  | 24 | 20 | 17 | 16 | 23 | 20 | 17 | 16 | 19 | 17 | 15 | 19 | 17 | 15 | 18 | 17 | 15 | 15 |
| 10 | 22 | 18 | 16 | 14 | 22 | 18 | 16 | 14 | 18 | 16 | 14 | 17 | 15 | 14 | 17 | 15 | 14 | 13 |

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER BALLAST/LAMP COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. 2) ACCORDING TO IESNA PROCEDURES, THE BALLAST(S) AND LAMP(S) ARE PRESUMED TO PRODUCE 100% OF RATED OUTPUT. AN APPROPRIATE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATINGS AND LUMINOUS INTENSITY VALUES GIVEN. 3) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT WHERE THE AMBIENT TEMPERATURE WAS HELD AT 25°C ±1°C. FIELD PERFORMANCE MAY DIFFER PARTICULARLY IN REGARDS TO CHANGE IN LUMINOUS OUTPUT AS A RESULT OF DIFFERENCE IN AMBIENT TEMPERATURE AND METHOD OF MOUNTING THE LUMINAIRE.



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VISUAL COMFORT PROBABILITY TABLE

RATED LUMENS PER LAMP 1250.

| 100. FC. ROOM |     | REFLECTANCES 80/50/20<br>LUMINAIRES 0 DEG PLANE |      |      |      | LUMINAIRES 90 DEG PLANE |      |      |      |
|---------------|-----|---|------|------|------|-------------------------|------|------|------|
| W             | L   | 8.5   | 10.0 | 13.0 | 16.0 | 8.5                     | 10.0 | 13.0 | 16.0 |
| 20            | 20  | 48  | 48   | 54   | 59   | 46                      | 46   | 50   | 54   |
| 20            | 30  | 51  | 46   | 46   | 49   | 47                      | 43   | 43   | 45   |
| 20            | 40  | 51  | 49   | 44   | 44   | 47                      | 46   | 42   | 41   |
| 20            | 60  | 51  | 49   | 48   | 44   | 47                      | 46   | 44   | 40   |
|               |     |   |      |      |      |                         |      |      |      |
| 30            | 20  | 51  | 50   | 53   | 57   | 50                      | 48   | 51   | 53   |
| 30            | 30  | 52  | 47   | 45   | 47   | 51                      | 45   | 42   | 44   |
| 30            | 40  | 52  | 49   | 44   | 42   | 53                      | 48   | 41   | 39   |
| 30            | 60  | 53  | 50   | 47   | 42   | 53                      | 48   | 44   | 39   |
| 30            | 80  | 53  | 50   | 47   | 42   | 53                      | 48   | 44   | 42   |
|               |     |   |      |      |      |                         |      |      |      |
| 40            | 20  | 55  | 53   | 54   | 57   | 54                      | 51   | 53   | 54   |
| 40            | 30  | 56  | 50   | 46   | 47   | 55                      | 49   | 44   | 45   |
| 40            | 40  | 56  | 52   | 45   | 42   | 56                      | 51   | 43   | 40   |
| 40            | 60  | 56  | 52   | 47   | 42   | 56                      | 51   | 45   | 39   |
| 40            | 80  | 56  | 52   | 47   | 42   | 56                      | 51   | 45   | 42   |
| 40            | 100 | 56  | 52   | 47   | 42   | 55                      | 51   | 45   | 42   |
|               |     |   |      |      |      |                         |      |      |      |
| 60            | 30  | 57  | 53   | 48   | 48   | 55                      | 52   | 46   | 46   |
| 60            | 40  | 57  | 54   | 47   | 43   | 56                      | 54   | 45   | 41   |
| 60            | 60  | 57  | 54   | 48   | 42   | 55                      | 54   | 47   | 40   |
| 60            | 80  | 57  | 54   | 48   | 42   | 55                      | 54   | 47   | 43   |
| 60            | 100 | 57  | 54   | 49   | 43   | 55                      | 54   | 47   | 43   |
|               |     |   |      |      |      |                         |      |      |      |
| 100           | 40  | 57  | 54   | 51   | 48   | 55                      | 54   | 49   | 46   |
| 100           | 60  | 57  | 54   | 53   | 47   | 55                      | 54   | 51   | 45   |
| 100           | 80  | 57  | 54   | 53   | 47   | 55                      | 54   | 51   | 48   |
| 100           | 100 | 57  | 54   | 53   | 47   | 55                      | 54   | 51   | 48   |



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LTL TEST #06074

CIRCLE-OF-LIGHT

| Ft<br>below | FC<br>nadir | Dia<br>@ 50% |
|-------------|-------------|--------------|
| 6.0         | 15.8        | 6.6          |
| 8.0         | 8.9         | 8.8          |
| 10.0        | 5.7         | 10.9         |
| 12.0        | 4.0         | 13.1         |
| 14.0        | 2.9         | 15.3         |
| 16.0        | 2.2         | 17.5         |

NOTE: 'Dia' spans the edge-points that are half of nadir FC