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THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL64217

DATE: 03/03/10

PREPARED FOR: MILL SPECIALTIES INC.

CATALOG NUMBER: 400-CLPS

LUMINAIRE: CAST METAL HOUSING WITH 6 UPLIGHT APERTURES AROUND BASE OF LAMP, SPUN SEMI-SPECULAR METAL REFLECTOR, FABRICATED SEMI-SPECULAR METAL WIRE GUARD.

LAMP: ONE 400-WATT CLEAR ED-37 PULSE START METAL HALIDE, VENTURE MP400W/BU/PS, VERTICAL BASE-UP POSITION.

MOUNTING: PENDANT

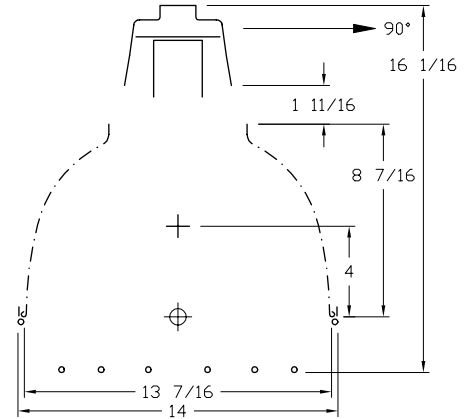
REPORT IS BASED ON 42000 LUMENS PER LAMP.

CANDELA DISTRIBUTION

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|-----|-------|-------|-------|-------|-------|
| 0 | 11648 | 11648 | 11648 | 11648 | 11648 |
| 5 | 7710 | 7838 | 7772 | 8098 | 8280 |
| 15 | 11680 | 11523 | 12330 | 12441 | 13062 |
| 25 | 12739 | 11420 | 12462 | 11701 | 11250 |
| 35 | 8520 | 7602 | 8024 | 7552 | 6882 |
| 45 | 7064 | 6618 | 6924 | 6477 | 6113 |
| 55 | 7213 | 6299 | 6700 | 6258 | 5989 |
| 65 | 2639 | 2196 | 2101 | 2097 | 1969 |
| 75 | 728 | 625 | 591 | 604 | 596 |
| 85 | 215 | 223 | 215 | 207 | 215 |
| 90 | 79 | 69 | 80 | 74 | 84 |
| 95 | 168 | 203 | 199 | 192 | 199 |
| 105 | 163 | 234 | 193 | 183 | 226 |
| 115 | 82 | 94 | 82 | 74 | 110 |
| 125 | 58 | 79 | 70 | 63 | 79 |
| 135 | 121 | 171 | 130 | 120 | 165 |
| 145 | 636 | 1281 | 855 | 902 | 1622 |
| 155 | 850 | 1421 | 1306 | 908 | 1989 |
| 165 | 122 | 115 | 121 | 127 | 124 |
| 175 | 145 | 140 | 156 | 165 | 160 |
| 180 | 147 | 147 | 147 | 147 | 147 |

FLUX

| |
|------|
| 744 |
| 3416 |
| 5515 |
| 4944 |
| 5178 |
| 5641 |
| 2265 |
| 670 |
| 220 |
| 212 |
| 220 |
| 84 |
| 66 |
| 122 |
| 648 |
| 560 |
| 40 |
| 12 |



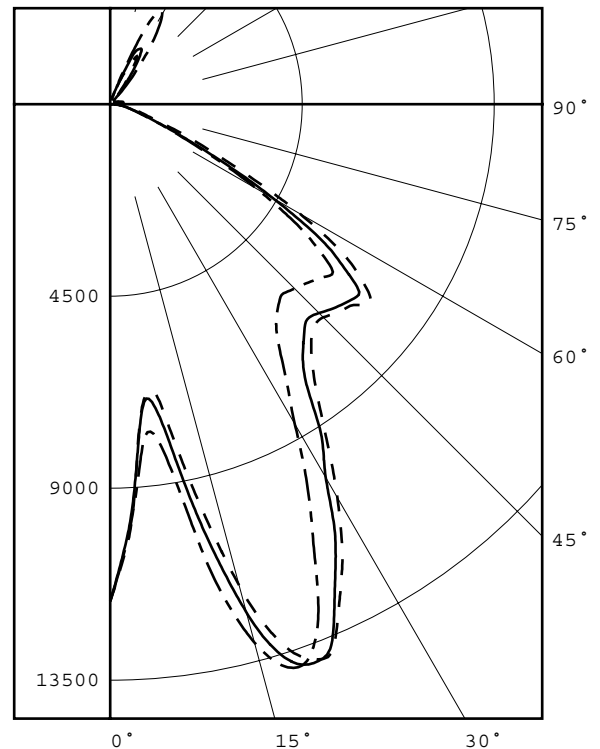
ZONAL LUMEN SUMMARY

| ZONE | LUMENS | %LAMP | %FIXT |
|--------|--------|-------|-------|
| 0- 30 | 9675 | 23.0 | 31.7 |
| 0- 40 | 14619 | 34.8 | 47.8 |
| 0- 60 | 25438 | 60.6 | 83.3 |
| 0- 90 | 28593 | 68.1 | 93.6 |
| 90-120 | 516 | 1.2 | 1.7 |
| 90-130 | 582 | 1.4 | 1.9 |
| 90-150 | 1351 | 3.2 | 4.4 |
| 90-180 | 1964 | 4.7 | 6.4 |
| 0-180 | 30557 | 72.8 | 100.0 |

TOTAL LUMINAIRE EFFICIENCY = 72.8 %

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG
SPACING CRITERIA : 1.3 1.1



LEGEND:

0-deg: - - - - -
45-deg: = = = = =
90-deg: - - - - -

Checked N. WHITE

Approved R. BEATTIE



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| LUMINANCE DATA IN CANDELA/SQ M | | | |
|--------------------------------|------------------|-------------------|-------------------|
| ANGLE IN DEG | AVERAGE 0-DEG | AVERAGE 45-DEG | AVERAGE 90-DEG |
| 45 | 107982. | 105946. | 93629. |
| 55 | 133896. | 124821. | 111575. |
| 65 | 64826. | 51857. | 48521. |
| 75 | 27793. | 22619. | 22754. |
| 85 | 19837. | 19603. | 19375. |



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CANDELA DISTRIBUTION

| CANDELA DISTRIBUTION | | | | | | ZONAL LUMEN SUMMARY | |
|----------------------|-------|-------|-------|-------|-------|---------------------|-------|
| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 | | |
| 0.0 | 11648 | 11648 | 11648 | 11648 | 11648 | 0- 5 | 239. |
| 5.0 | 7710 | 7838 | 7772 | 8098 | 8280 | 5- 10 | 505. |
| 10.0 | 7412 | 7288 | 8098 | 8239 | 9074 | 10- 15 | 1216. |
| 15.0 | 11680 | 11523 | 12330 | 12441 | 13062 | 15- 20 | 2200. |
| 20.0 | 13839 | 13182 | 13938 | 13529 | 13732 | 20- 25 | 2755. |
| 25.0 | 12739 | 11420 | 12462 | 11701 | 11250 | 25- 30 | 2760. |
| 30.0 | 10646 | 9480 | 10100 | 9711 | 8653 | 30- 35 | 2573. |
| 35.0 | 8520 | 7602 | 8024 | 7552 | 6882 | 35- 40 | 2371. |
| 40.0 | 7329 | 6721 | 7068 | 6676 | 6138 | 40- 45 | 2441. |
| 45.0 | 7064 | 6618 | 6924 | 6477 | 6113 | 45- 50 | 2737. |
| 50.0 | 7346 | 6783 | 7226 | 6746 | 6361 | 50- 55 | 3078. |
| 55.0 | 7213 | 6299 | 6700 | 6258 | 5989 | 55- 60 | 2563. |
| 60.0 | 5137 | 4095 | 4405 | 4115 | 3971 | 60- 65 | 1505. |
| 65.0 | 2639 | 2196 | 2101 | 2097 | 1969 | 65- 70 | 760. |
| 70.0 | 1282 | 1067 | 1026 | 1042 | 1001 | 70- 75 | 406. |
| 75.0 | 728 | 625 | 591 | 604 | 596 | 75- 80 | 264. |
| 80.0 | 447 | 409 | 376 | 393 | 381 | 80- 85 | 168. |
| 85.0 | 215 | 223 | 215 | 207 | 215 | 85- 90 | 52. |
| 90.0 | 79 | 69 | 80 | 74 | 84 | 90- 95 | 89. |
| 95.0 | 168 | 203 | 199 | 192 | 199 | 95-100 | 123. |
| 100.0 | 214 | 304 | 265 | 259 | 306 | 100-105 | 128. |
| 105.0 | 163 | 234 | 193 | 183 | 226 | 105-110 | 91. |
| 110.0 | 96 | 128 | 128 | 106 | 160 | 110-115 | 49. |
| 115.0 | 82 | 94 | 82 | 74 | 110 | 115-120 | 34. |
| 120.0 | 58 | 81 | 65 | 61 | 80 | 120-125 | 32. |
| 125.0 | 58 | 79 | 70 | 63 | 79 | 125-130 | 34. |
| 130.0 | 79 | 110 | 93 | 88 | 111 | 130-135 | 48. |
| 135.0 | 121 | 171 | 130 | 120 | 165 | 135-140 | 74. |
| 140.0 | 261 | 567 | 362 | 409 | 655 | 140-145 | 234. |
| 145.0 | 636 | 1281 | 855 | 902 | 1622 | 145-150 | 413. |
| 150.0 | 1247 | 2030 | 1470 | 1414 | 2440 | 150-155 | 417. |
| 155.0 | 850 | 1421 | 1306 | 908 | 1989 | 155-160 | 143. |
| 160.0 | 299 | 414 | 357 | 263 | 411 | 160-165 | 26. |
| 165.0 | 122 | 115 | 121 | 127 | 124 | 165-170 | 14. |
| 170.0 | 123 | 123 | 135 | 146 | 137 | 170-175 | 9. |
| 175.0 | 145 | 140 | 156 | 165 | 160 | 175-180 | 4. |
| 180.0 | 147 | 147 | 147 | 147 | 147 | | |



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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 | 85 | 85 | 85 | 85 | 83 | 83 | 83 | 83 | 78 | 78 | 78 | 74 | 74 | 74 | 70 | 70 | 70 | 68 | |
| 1 | 79 | 76 | 73 | 71 | 77 | 74 | 72 | 69 | 70 | 68 | 66 | 67 | 65 | 64 | 63 | 62 | 61 | 59 | |
| 2 | 73 | 67 | 63 | 59 | 70 | 66 | 62 | 58 | 62 | 59 | 56 | 59 | 57 | 54 | 57 | 54 | 52 | 51 | |
| 3 | 67 | 60 | 54 | 50 | 65 | 58 | 53 | 49 | 55 | 51 | 48 | 53 | 49 | 46 | 51 | 48 | 45 | 43 | |
| 4 | 61 | 53 | 47 | 43 | 59 | 52 | 47 | 42 | 50 | 45 | 41 | 47 | 43 | 40 | 45 | 42 | 39 | 38 | |
| 5 | 56 | 48 | 42 | 37 | 55 | 47 | 41 | 37 | 45 | 40 | 36 | 43 | 38 | 35 | 41 | 37 | 34 | 33 | |
| 6 | 52 | 43 | 37 | 32 | 51 | 42 | 36 | 32 | 40 | 35 | 32 | 39 | 34 | 31 | 37 | 33 | 30 | 29 | |
| 7 | 48 | 39 | 33 | 29 | 47 | 38 | 33 | 28 | 37 | 32 | 28 | 35 | 31 | 27 | 34 | 30 | 27 | 26 | |
| 8 | 45 | 36 | 30 | 26 | 44 | 35 | 29 | 25 | 34 | 29 | 25 | 32 | 28 | 25 | 31 | 27 | 24 | 23 | |
| 9 | 42 | 33 | 27 | 23 | 41 | 32 | 27 | 23 | 31 | 26 | 23 | 30 | 25 | 22 | 29 | 25 | 22 | 21 | |
| 10 | 39 | 30 | 25 | 21 | 38 | 30 | 24 | 21 | 29 | 24 | 20 | 28 | 23 | 20 | 27 | 23 | 20 | 19 | |

ALL CANDELA, LUMENS, LUMINANCE, COEFFICIENT OF UTILIZATION AND VCP VALUES IN THIS REPORT ARE BASED ON RELATIVE PHOTOMETRY WHICH ASSUMES A BALLAST FACTOR OF 1.000. ANY CALCULATIONS PREPARED FROM THESE DATA SHOULD INCLUDE AN APPROPRIATE BALLAST FACTOR.