

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P776314

Luminaire Tested: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776314  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2310613A001)  
Test Lab:  
Issue Date: 2/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K  
Description: 4 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

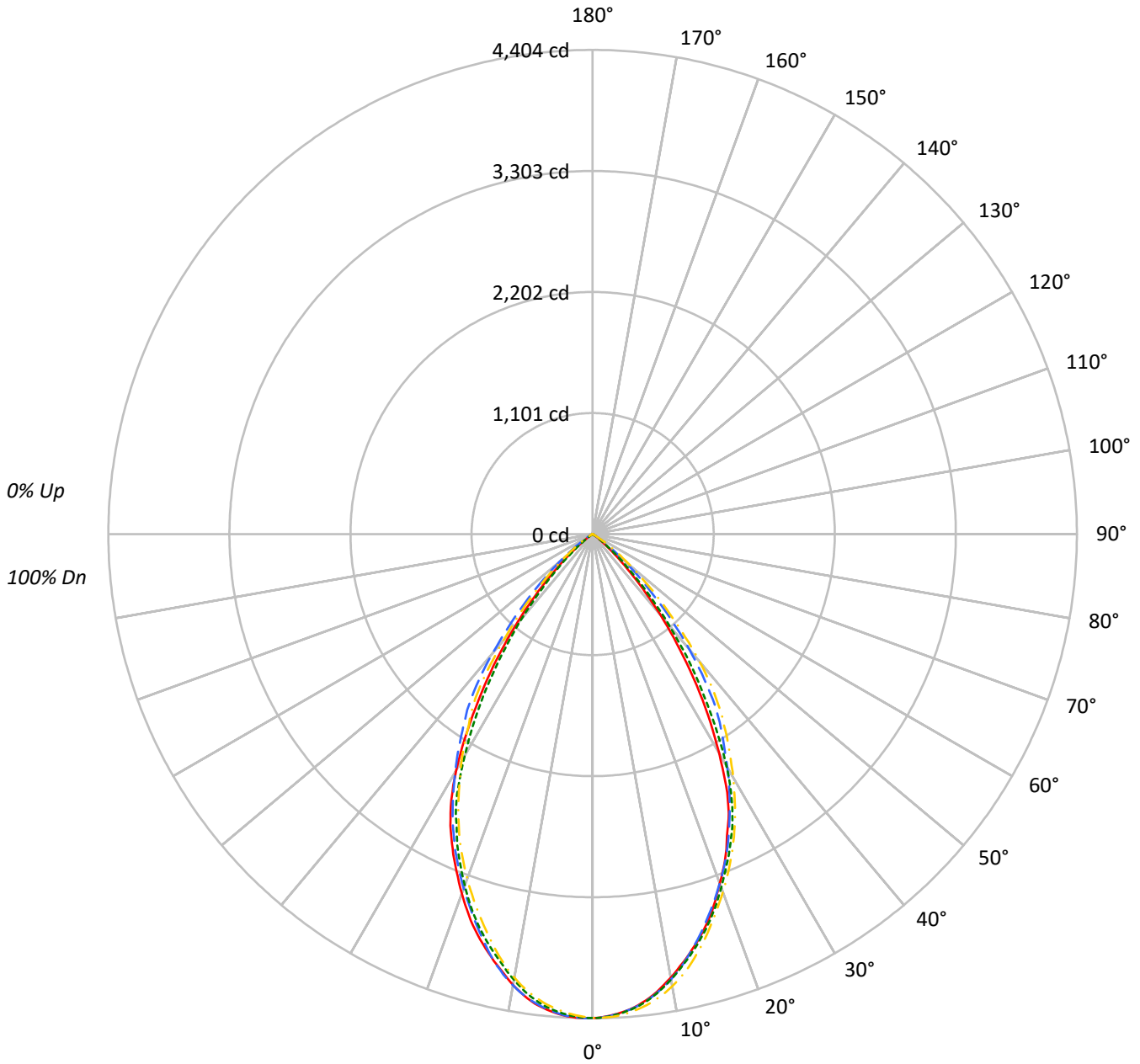
Lumens per Lamp: N/A  
Luminaire Lumens: 4552.6 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 0.94 / 0.93 / 0.98  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P776314  
CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

### Luminous Intensity Polar Plot





TEST NUMBER: P776314

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|---|--|---|
| RF  | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 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  | 50  | 30 | 10 | 50 | 30 | 10  | 0 |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |    | 100 |   |  |   |
| 1   | 113 | 110 | 108 | 105 | 111 | 108 | 106 | 104 | 104 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 95  | 93  |    |    |    |    | 93  |   |  |   |
| 2   | 107 | 102 | 98  | 94  | 105 | 100 | 96  | 93  | 97  | 94  | 91  | 94  | 91  | 89  | 91  | 89  | 87  | 86  |    |    |    |    | 86  |   |  |   |
| 3   | 101 | 95  | 89  | 85  | 99  | 93  | 88  | 84  | 90  | 86  | 83  | 88  | 85  | 82  | 86  | 83  | 80  | 79  |    |    |    |    | 79  |   |  |   |
| 4   | 96  | 88  | 82  | 77  | 94  | 87  | 81  | 77  | 84  | 80  | 76  | 82  | 78  | 75  | 80  | 77  | 74  | 73  |    |    |    |    | 73  |   |  |   |
| 5   | 90  | 82  | 75  | 71  | 89  | 81  | 75  | 70  | 79  | 74  | 70  | 77  | 73  | 69  | 75  | 72  | 69  | 67  |    |    |    |    | 67  |   |  |   |
| 6   | 85  | 76  | 70  | 65  | 84  | 75  | 69  | 65  | 74  | 68  | 64  | 72  | 68  | 64  | 71  | 67  | 64  | 62  |    |    |    |    | 62  |   |  |   |
| 7   | 81  | 71  | 65  | 60  | 79  | 70  | 64  | 60  | 69  | 64  | 60  | 68  | 63  | 59  | 67  | 62  | 59  | 57  |    |    |    |    | 57  |   |  |   |
| 8   | 77  | 66  | 60  | 56  | 75  | 66  | 60  | 56  | 65  | 59  | 55  | 64  | 59  | 55  | 63  | 58  | 55  | 53  |    |    |    |    | 53  |   |  |   |
| 9   | 73  | 62  | 56  | 52  | 71  | 62  | 56  | 52  | 61  | 55  | 52  | 60  | 55  | 51  | 59  | 55  | 51  | 50  |    |    |    |    | 50  |   |  |   |
| 10  | 69  | 59  | 53  | 48  | 68  | 58  | 52  | 48  | 57  | 52  | 48  | 57  | 52  | 48  | 56  | 51  | 48  | 47  |    |    |    |    | 47  |   |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 90°    | 180°   | 270°   |
|-----|--------|--------|--------|--------|
| 0°  | 435024 | 435024 | 435024 | 435024 |
| 5°  | 428738 | 429463 | 432350 | 430197 |
| 10° | 411113 | 412840 | 417968 | 413291 |
| 15° | 387387 | 389433 | 395000 | 388431 |
| 20° | 355738 | 359830 | 365888 | 357715 |
| 25° | 317954 | 326472 | 331598 | 319198 |
| 30° | 262392 | 277983 | 283210 | 265382 |
| 35° | 193062 | 208809 | 212803 | 197599 |
| 40° | 123546 | 139739 | 142487 | 128449 |
| 45° | 62483  | 76434  | 78782  | 67124  |
| 50° | 21943  | 29247  | 31139  | 24911  |
| 55° | 4084   | 5290   | 5997   | 5928   |
| 60° | 1542   | 1463   | 1285   | 1779   |
| 65° | 1240   | 1146   | 1052   | 1333   |
| 70° | 954    | 954    | 838    | 1069   |
| 75° | 764    | 764    | 611    | 955    |
| 80° | 455    | 455    | 455    | 683    |
| 85° | 454    | 454    | 0      | 454    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 135°  
 Vertical Angle: 45°  
 Luminance: 126980 cd/sqm



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 407.4  | 8.9       |
| 10°-20°   | 1065.7 | 23.4      |
| 20°-30°   | 1353.4 | 29.7      |
| 30°-40°   | 1119.1 | 24.6      |
| 40°-50°   | 512.2  | 11.2      |
| 50°-60°   | 86.0   | 1.9       |
| 60°-70°   | 6.1    | 0.1       |
| 70°-80°   | 2.3    | 0.1       |
| 80°-90°   | 0.4    | 0.0       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 2826.5 | 62.1      |
| 0°-40°    | 3945.6 | 86.7      |
| 0°-60°    | 4543.8 | 99.8      |
| 0°-90°    | 4552.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4552.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 90°  | 180° | 270° | 360° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 4401 | 4401 | 4401 | 4401 | 4401 |      |
| 5°  | 4321 | 4328 | 4358 | 4336 | 4321 | 405  |
| 15° | 3786 | 3806 | 3860 | 3796 | 3786 | 1058 |
| 25° | 2915 | 2994 | 3040 | 2927 | 2915 | 1324 |
| 35° | 1600 | 1730 | 1764 | 1638 | 1600 | 994  |
| 45° | 447  | 547  | 564  | 480  | 447  | 363  |
| 55° | 24   | 31   | 35   | 34   | 24   | 39   |
| 65° | 5    | 5    | 4    | 6    | 5    | 5    |
| 75° | 2    | 2    | 2    | 2    | 2    | 2    |
| 85° | 0    | 0    | 0    | 0    | 0    | 0    |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 |
| 0.5°  | 4400.4 | 4400.8 | 4400.8 | 4398.8 | 4400.4 | 4400.4 | 4400.4 | 4402.1 | 4404.5 | 4404.9 | 4404.1 |
| 1°    | 4395.9 | 4397.2 | 4397.6 | 4396.3 | 4398.4 | 4399.2 | 4400.4 | 4402.1 | 4404.5 | 4404.5 | 4403.3 |
| 1.5°  | 4391.4 | 4392.2 | 4393.1 | 4392.7 | 4394.3 | 4395.9 | 4398.8 | 4400.4 | 4403.3 | 4404.1 | 4401.2 |
| 2°    | 4384.5 | 4385.7 | 4386.9 | 4386.5 | 4389.0 | 4392.7 | 4395.9 | 4397.6 | 4400.8 | 4402.1 | 4398.8 |
| 2.5°  | 4376.7 | 4377.9 | 4379.6 | 4379.6 | 4382.0 | 4386.9 | 4392.7 | 4393.1 | 4396.3 | 4397.6 | 4395.5 |
| 3°    | 4368.9 | 4369.8 | 4370.6 | 4371.4 | 4374.3 | 4380.0 | 4386.9 | 4387.7 | 4391.4 | 4391.8 | 4389.0 |
| 3.5°  | 4359.1 | 4359.5 | 4360.8 | 4362.0 | 4364.8 | 4372.6 | 4380.8 | 4379.6 | 4384.9 | 4385.3 | 4381.6 |
| 4°    | 4348.5 | 4348.5 | 4349.3 | 4351.3 | 4354.2 | 4363.2 | 4372.2 | 4371.8 | 4377.1 | 4377.1 | 4373.0 |
| 4.5°  | 4335.4 | 4336.2 | 4337.9 | 4339.9 | 4342.8 | 4353.4 | 4362.8 | 4362.0 | 4368.5 | 4368.1 | 4363.2 |
| 5°    | 4321.1 | 4321.5 | 4324.4 | 4326.8 | 4328.4 | 4341.5 | 4352.6 | 4351.3 | 4357.5 | 4358.3 | 4351.8 |
| 5.5°  | 4305.1 | 4305.9 | 4309.6 | 4312.5 | 4314.5 | 4328.0 | 4341.1 | 4339.5 | 4345.6 | 4346.4 | 4339.9 |
| 6°    | 4287.5 | 4288.4 | 4293.7 | 4296.1 | 4298.2 | 4314.1 | 4327.2 | 4325.6 | 4332.5 | 4332.9 | 4326.0 |
| 6.5°  | 4269.1 | 4269.5 | 4275.7 | 4279.4 | 4280.6 | 4297.8 | 4313.3 | 4310.9 | 4318.6 | 4318.6 | 4312.5 |
| 7°    | 4248.3 | 4249.1 | 4256.5 | 4261.0 | 4261.8 | 4279.8 | 4298.2 | 4294.5 | 4302.3 | 4302.7 | 4296.1 |
| 7.5°  | 4227.0 | 4227.0 | 4236.4 | 4240.9 | 4240.1 | 4260.6 | 4281.0 | 4277.3 | 4283.5 | 4285.5 | 4279.0 |
| 8°    | 4203.7 | 4204.1 | 4213.1 | 4219.7 | 4217.6 | 4239.3 | 4262.6 | 4257.3 | 4263.0 | 4265.1 | 4259.7 |
| 8.5°  | 4178.8 | 4180.4 | 4190.6 | 4196.3 | 4192.7 | 4216.8 | 4243.0 | 4236.4 | 4240.9 | 4245.0 | 4238.9 |
| 9°    | 4150.5 | 4153.8 | 4165.3 | 4171.0 | 4167.3 | 4193.1 | 4221.7 | 4213.1 | 4216.4 | 4221.7 | 4218.0 |
| 9.5°  | 4122.7 | 4126.4 | 4139.5 | 4145.2 | 4140.7 | 4167.7 | 4199.6 | 4188.2 | 4191.4 | 4197.2 | 4194.7 |
| 10°   | 4096.1 | 4097.8 | 4111.7 | 4118.2 | 4113.3 | 4142.4 | 4175.9 | 4162.4 | 4164.4 | 4171.0 | 4168.5 |
| 10.5° | 4066.7 | 4068.7 | 4083.5 | 4089.2 | 4084.7 | 4116.2 | 4150.1 | 4134.2 | 4136.2 | 4143.6 | 4141.9 |
| 11°   | 4037.6 | 4039.7 | 4053.6 | 4060.1 | 4056.1 | 4086.7 | 4121.9 | 4105.5 | 4105.9 | 4115.8 | 4114.5 |
| 11.5° | 4007.4 | 4009.8 | 4021.3 | 4029.1 | 4025.4 | 4058.1 | 4094.9 | 4074.5 | 4074.5 | 4085.5 | 4085.1 |
| 12°   | 3978.3 | 3979.2 | 3988.6 | 3996.7 | 3995.1 | 4028.6 | 4065.0 | 4043.4 | 4044.2 | 4053.2 | 4052.4 |
| 12.5° | 3948.1 | 3948.1 | 3952.6 | 3965.3 | 3965.3 | 3998.4 | 4032.7 | 4010.7 | 4015.6 | 4022.1 | 4021.7 |
| 13°   | 3916.2 | 3917.0 | 3918.6 | 3932.1 | 3935.4 | 3968.1 | 4000.0 | 3977.5 | 3986.1 | 3991.0 | 3986.1 |
| 13.5° | 3884.3 | 3884.3 | 3883.5 | 3898.2 | 3903.5 | 3937.4 | 3968.1 | 3945.2 | 3955.0 | 3957.5 | 3949.7 |
| 14°   | 3852.0 | 3851.1 | 3846.6 | 3865.0 | 3871.2 | 3905.9 | 3930.5 | 3912.5 | 3923.5 | 3924.8 | 3911.7 |
| 14.5° | 3818.8 | 3817.6 | 3809.8 | 3830.7 | 3838.9 | 3874.0 | 3894.5 | 3879.4 | 3892.0 | 3892.5 | 3874.0 |
| 15°   | 3785.7 | 3784.1 | 3773.8 | 3797.2 | 3805.7 | 3841.3 | 3858.1 | 3846.2 | 3860.1 | 3859.3 | 3832.7 |
| 15.5° | 3752.2 | 3749.3 | 3734.6 | 3762.0 | 3772.2 | 3807.8 | 3819.6 | 3811.1 | 3826.2 | 3825.0 | 3792.2 |
| 16°   | 3715.8 | 3712.1 | 3696.9 | 3725.2 | 3737.4 | 3773.4 | 3779.6 | 3776.7 | 3793.5 | 3791.4 | 3750.9 |
| 16.5° | 3679.8 | 3678.1 | 3658.1 | 3688.4 | 3701.9 | 3740.3 | 3740.7 | 3741.1 | 3758.3 | 3755.8 | 3711.7 |
| 17°   | 3642.1 | 3641.7 | 3619.6 | 3651.6 | 3665.0 | 3703.1 | 3700.6 | 3705.1 | 3721.9 | 3719.9 | 3670.0 |
| 17.5° | 3602.5 | 3603.7 | 3580.4 | 3613.9 | 3626.2 | 3667.1 | 3661.0 | 3667.5 | 3683.5 | 3683.9 | 3629.9 |
| 18°   | 3559.5 | 3561.6 | 3541.1 | 3575.9 | 3586.1 | 3629.5 | 3622.1 | 3629.1 | 3643.8 | 3646.6 | 3588.6 |
| 18.5° | 3514.9 | 3522.7 | 3501.9 | 3535.4 | 3546.0 | 3591.4 | 3583.2 | 3589.0 | 3603.3 | 3606.6 | 3548.9 |
| 19°   | 3469.5 | 3478.5 | 3461.8 | 3494.1 | 3505.1 | 3549.7 | 3543.6 | 3548.5 | 3563.2 | 3566.1 | 3509.2 |
| 19.5° | 3426.6 | 3433.1 | 3420.9 | 3451.1 | 3463.4 | 3510.4 | 3504.3 | 3508.0 | 3521.5 | 3523.9 | 3469.1 |
| 20°   | 3382.0 | 3388.2 | 3381.2 | 3409.4 | 3420.9 | 3467.5 | 3464.2 | 3464.2 | 3478.5 | 3481.8 | 3428.2 |
| 20.5° | 3338.7 | 3343.6 | 3341.1 | 3365.7 | 3377.9 | 3425.0 | 3423.7 | 3420.9 | 3435.2 | 3438.5 | 3386.9 |
| 21°   | 3296.1 | 3298.6 | 3299.8 | 3321.9 | 3334.2 | 3381.2 | 3382.8 | 3377.1 | 3391.8 | 3394.7 | 3344.4 |



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CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 22.5° | 3163.2 | 3165.2 | 3172.6 | 3187.3 | 3210.2 | 3247.5 | 3258.9 | 3241.3 | 3262.2 | 3259.7 | 3218.8 |
| 23°   | 3111.7 | 3121.1 | 3128.0 | 3141.9 | 3168.1 | 3202.5 | 3216.8 | 3195.1 | 3220.1 | 3214.3 | 3175.1 |
| 23.5° | 3057.3 | 3074.0 | 3081.8 | 3093.3 | 3124.3 | 3159.9 | 3174.2 | 3148.9 | 3176.3 | 3168.5 | 3133.3 |
| 24°   | 3005.3 | 3023.3 | 3035.6 | 3049.9 | 3080.6 | 3112.5 | 3130.5 | 3102.7 | 3130.5 | 3122.3 | 3087.1 |
| 24.5° | 2960.3 | 2970.2 | 2987.7 | 3006.6 | 3037.2 | 3065.5 | 3084.7 | 3056.9 | 3085.5 | 3076.1 | 3040.5 |
| 25°   | 2915.4 | 2914.5 | 2939.5 | 2962.4 | 2993.5 | 3018.4 | 3038.9 | 3010.6 | 3040.5 | 3029.5 | 2994.3 |
| 25.5° | 2870.8 | 2863.8 | 2890.8 | 2912.1 | 2949.7 | 2971.0 | 2993.1 | 2964.4 | 2995.9 | 2983.2 | 2948.1 |
| 26°   | 2823.7 | 2817.6 | 2842.5 | 2861.8 | 2900.2 | 2923.9 | 2947.3 | 2918.6 | 2950.9 | 2937.0 | 2903.9 |
| 26.5° | 2765.2 | 2773.0 | 2794.3 | 2810.6 | 2848.3 | 2881.0 | 2902.7 | 2865.5 | 2898.2 | 2883.9 | 2854.4 |
| 27°   | 2708.8 | 2727.2 | 2746.8 | 2765.7 | 2798.0 | 2837.2 | 2853.2 | 2818.0 | 2847.5 | 2838.9 | 2804.1 |
| 27.5° | 2650.7 | 2679.8 | 2698.6 | 2722.7 | 2741.9 | 2790.2 | 2804.1 | 2773.8 | 2792.7 | 2790.2 | 2753.8 |
| 28°   | 2580.8 | 2619.6 | 2651.5 | 2679.4 | 2685.9 | 2735.4 | 2752.6 | 2726.0 | 2735.8 | 2735.8 | 2701.4 |
| 28.5° | 2508.8 | 2562.4 | 2602.1 | 2627.0 | 2625.8 | 2683.0 | 2703.1 | 2673.6 | 2674.4 | 2685.1 | 2650.7 |
| 29°   | 2438.5 | 2505.1 | 2553.0 | 2575.9 | 2565.2 | 2628.6 | 2653.2 | 2624.1 | 2612.7 | 2629.5 | 2599.6 |
| 29.5° | 2368.9 | 2438.9 | 2501.0 | 2525.2 | 2501.9 | 2571.4 | 2603.7 | 2569.7 | 2546.8 | 2571.4 | 2548.9 |
| 30°   | 2299.0 | 2369.3 | 2449.5 | 2471.6 | 2435.6 | 2512.1 | 2555.8 | 2513.3 | 2481.4 | 2512.5 | 2497.8 |
| 30.5° | 2229.0 | 2299.4 | 2395.9 | 2414.7 | 2365.2 | 2449.9 | 2506.4 | 2456.0 | 2411.9 | 2451.1 | 2448.3 |
| 31°   | 2159.5 | 2230.7 | 2345.2 | 2356.2 | 2295.3 | 2388.6 | 2454.8 | 2396.7 | 2338.7 | 2389.4 | 2399.6 |
| 31.5° | 2091.2 | 2162.4 | 2295.3 | 2296.9 | 2222.9 | 2324.3 | 2402.9 | 2336.2 | 2265.9 | 2323.9 | 2350.9 |
| 32°   | 2023.7 | 2096.1 | 2250.7 | 2236.0 | 2150.1 | 2258.9 | 2350.5 | 2272.4 | 2193.5 | 2258.5 | 2299.8 |
| 32.5° | 1955.0 | 2028.6 | 2204.9 | 2172.2 | 2076.1 | 2191.4 | 2303.9 | 2207.0 | 2118.2 | 2190.6 | 2245.8 |
| 33°   | 1884.3 | 1962.4 | 2159.9 | 2108.0 | 2005.3 | 2120.7 | 2258.1 | 2140.7 | 2046.2 | 2122.3 | 2195.5 |
| 33.5° | 1814.3 | 1897.8 | 2113.3 | 2041.3 | 1932.9 | 2050.7 | 2212.3 | 2072.8 | 1970.6 | 2050.7 | 2147.7 |
| 34°   | 1744.4 | 1831.9 | 2064.6 | 1973.8 | 1864.2 | 1980.8 | 2163.2 | 2002.9 | 1901.0 | 1977.9 | 2098.6 |
| 34.5° | 1672.4 | 1765.7 | 2013.5 | 1905.5 | 1795.5 | 1911.3 | 2110.4 | 1932.9 | 1830.7 | 1907.6 | 2049.5 |
| 35°   | 1600.0 | 1699.0 | 1968.5 | 1837.6 | 1730.5 | 1843.0 | 2065.9 | 1865.9 | 1763.6 | 1841.3 | 2005.7 |
| 35.5° | 1528.4 | 1631.1 | 1917.0 | 1769.3 | 1663.8 | 1776.3 | 2022.1 | 1797.6 | 1692.9 | 1771.0 | 1961.6 |
| 36°   | 1455.6 | 1564.0 | 1855.6 | 1702.7 | 1598.8 | 1710.8 | 1968.1 | 1730.9 | 1626.6 | 1704.3 | 1908.0 |
| 36.5° | 1391.4 | 1495.7 | 1795.5 | 1638.5 | 1534.6 | 1646.6 | 1915.3 | 1665.4 | 1559.9 | 1636.8 | 1850.3 |
| 37°   | 1327.2 | 1432.3 | 1737.0 | 1574.6 | 1468.3 | 1583.2 | 1865.0 | 1600.4 | 1495.3 | 1575.9 | 1798.0 |
| 37.5° | 1263.0 | 1368.9 | 1674.4 | 1511.7 | 1401.2 | 1521.1 | 1808.6 | 1537.8 | 1427.8 | 1511.3 | 1737.8 |
| 38°   | 1198.4 | 1305.5 | 1612.3 | 1445.8 | 1336.2 | 1459.7 | 1752.2 | 1476.1 | 1359.5 | 1450.3 | 1674.9 |
| 38.5° | 1137.0 | 1241.7 | 1550.5 | 1387.7 | 1271.2 | 1398.0 | 1696.1 | 1415.5 | 1293.7 | 1389.0 | 1610.6 |
| 39°   | 1076.9 | 1178.7 | 1489.6 | 1329.2 | 1207.4 | 1339.9 | 1634.8 | 1355.0 | 1231.1 | 1328.4 | 1545.6 |
| 39.5° | 1016.0 | 1119.8 | 1428.2 | 1271.2 | 1144.4 | 1277.7 | 1573.4 | 1293.3 | 1166.5 | 1267.1 | 1478.9 |
| 40°   | 957.5  | 1062.6 | 1367.3 | 1213.1 | 1083.0 | 1216.8 | 1512.5 | 1233.5 | 1104.3 | 1207.8 | 1414.3 |
| 40.5° | 897.8  | 1004.5 | 1306.3 | 1155.0 | 1023.7 | 1156.2 | 1449.5 | 1174.2 | 1042.9 | 1148.1 | 1349.7 |
| 41°   | 840.1  | 950.1  | 1245.4 | 1097.8 | 966.1  | 1099.0 | 1385.7 | 1115.3 | 986.1  | 1090.0 | 1286.7 |
| 41.5° | 783.6  | 894.5  | 1184.5 | 1041.7 | 910.0  | 1040.9 | 1320.7 | 1057.3 | 928.0  | 1031.1 | 1224.5 |
| 42°   | 728.8  | 841.3  | 1123.5 | 985.3  | 853.6  | 985.7  | 1256.4 | 1001.6 | 873.2  | 976.3  | 1163.6 |
| 42.5° | 676.1  | 789.0  | 1063.8 | 933.3  | 800.8  | 930.1  | 1194.7 | 947.7  | 818.4  | 923.1  | 1103.9 |
| 43°   | 626.6  | 737.0  | 1003.7 | 881.8  | 746.8  | 880.2  | 1133.3 | 895.3  | 763.6  | 869.9  | 1047.0 |
| 43.5° | 578.7  | 685.5  | 944.0  | 831.9  | 694.5  | 827.0  | 1074.4 | 844.6  | 711.7  | 818.8  | 990.6  |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  | 202.5° | 225°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 45°   | 447.0 | 547.2 | 780.0 | 690.4 | 546.8 | 681.8  | 908.4 | 699.8  | 563.6 | 675.7  | 829.9 |
| 45.5° | 406.1 | 503.9 | 730.5 | 645.8 | 501.8 | 634.8  | 856.0 | 654.4  | 518.2 | 630.7  | 779.6 |
| 46°   | 368.1 | 464.6 | 681.4 | 601.2 | 458.9 | 589.8  | 806.1 | 610.6  | 474.8 | 586.5  | 729.7 |
| 46.5° | 331.7 | 426.6 | 636.0 | 558.7 | 418.4 | 546.4  | 757.1 | 566.5  | 433.5 | 543.6  | 681.0 |
| 47°   | 296.9 | 388.5 | 591.4 | 516.6 | 382.4 | 504.7  | 710.8 | 524.7  | 398.4 | 503.1  | 634.8 |
| 47.5° | 265.0 | 353.0 | 548.9 | 477.3 | 346.4 | 463.4  | 663.8 | 485.5  | 363.2 | 463.8  | 590.2 |
| 48°   | 235.6 | 319.0 | 507.2 | 439.7 | 310.8 | 425.8  | 620.0 | 446.2  | 328.0 | 426.2  | 547.7 |
| 48.5° | 208.6 | 287.1 | 467.9 | 403.3 | 275.3 | 392.6  | 576.3 | 409.8  | 293.3 | 393.9  | 507.2 |
| 49°   | 184.5 | 256.4 | 429.9 | 369.7 | 244.6 | 359.1  | 535.4 | 377.5  | 258.1 | 361.6  | 468.7 |
| 49.5° | 162.4 | 229.0 | 393.9 | 338.2 | 216.8 | 326.0  | 494.1 | 345.2  | 229.4 | 329.7  | 431.1 |
| 50°   | 142.7 | 203.7 | 358.3 | 307.6 | 190.2 | 292.8  | 455.6 | 312.9  | 202.5 | 297.3  | 399.2 |
| 50.5° | 128.0 | 180.0 | 326.8 | 276.5 | 166.1 | 259.7  | 418.8 | 280.6  | 177.9 | 265.0  | 367.7 |
| 51°   | 113.3 | 158.3 | 295.7 | 248.7 | 144.4 | 232.3  | 386.5 | 251.5  | 155.8 | 238.9  | 335.8 |
| 51.5° | 98.6  | 139.5 | 267.5 | 222.1 | 124.3 | 207.0  | 353.8 | 224.9  | 135.0 | 213.5  | 303.9 |
| 52°   | 83.8  | 125.2 | 240.5 | 197.5 | 106.3 | 183.6  | 321.1 | 199.6  | 115.3 | 189.8  | 272.4 |
| 52.5° | 72.4  | 110.8 | 216.4 | 174.2 | 89.6  | 160.7  | 288.3 | 176.7  | 97.8  | 167.3  | 245.8 |
| 53°   | 61.8  | 96.1  | 191.8 | 152.1 | 74.8  | 139.9  | 260.5 | 154.2  | 82.2  | 146.4  | 220.9 |
| 53.5° | 51.5  | 82.2  | 171.8 | 135.0 | 61.3  | 121.1  | 234.8 | 134.2  | 67.9  | 126.8  | 198.0 |
| 54°   | 42.1  | 71.2  | 151.3 | 117.8 | 51.1  | 103.5  | 209.4 | 114.9  | 56.9  | 108.8  | 175.9 |
| 54.5° | 32.3  | 60.9  | 135.8 | 101.0 | 40.9  | 87.5   | 185.7 | 98.2   | 45.8  | 93.3   | 155.8 |
| 55°   | 23.7  | 51.5  | 121.1 | 83.8  | 30.7  | 73.6   | 164.4 | 82.2   | 34.8  | 78.1   | 137.4 |
| 55.5° | 17.2  | 42.1  | 105.9 | 67.1  | 20.9  | 59.7   | 144.0 | 67.9   | 23.7  | 64.6   | 120.7 |
| 56°   | 15.5  | 32.7  | 90.8  | 54.4  | 10.6  | 49.9   | 125.2 | 56.9   | 12.7  | 54.0   | 105.5 |
| 56.5° | 13.9  | 24.5  | 75.7  | 42.9  | 9.8   | 39.7   | 107.6 | 46.2   | 9.0   | 43.4   | 91.2  |
| 57°   | 12.3  | 17.2  | 63.8  | 32.7  | 9.4   | 29.9   | 92.0  | 35.6   | 8.6   | 33.1   | 78.5  |
| 57.5° | 10.6  | 15.1  | 54.4  | 22.5  | 9.0   | 20.0   | 77.7  | 24.9   | 8.2   | 22.5   | 67.5  |
| 58°   | 9.0   | 13.5  | 45.8  | 14.7  | 8.6   | 9.8    | 65.0  | 14.3   | 7.8   | 11.9   | 57.7  |
| 58.5° | 8.6   | 11.9  | 38.4  | 13.1  | 8.2   | 8.6    | 54.4  | 8.6    | 7.4   | 8.6    | 48.7  |
| 59°   | 8.2   | 10.2  | 31.9  | 11.5  | 7.8   | 8.2    | 47.4  | 7.8    | 7.0   | 7.8    | 42.9  |
| 59.5° | 8.2   | 8.2   | 26.6  | 9.8   | 7.4   | 7.8    | 40.5  | 7.4    | 6.5   | 7.8    | 37.2  |
| 60°   | 7.8   | 7.8   | 22.5  | 7.8   | 7.4   | 7.4    | 33.9  | 7.0    | 6.5   | 7.4    | 31.1  |
| 60.5° | 7.4   | 7.8   | 18.8  | 7.8   | 7.0   | 7.4    | 27.0  | 7.0    | 6.1   | 7.0    | 25.4  |
| 61°   | 7.0   | 7.4   | 15.5  | 7.4   | 6.5   | 7.0    | 20.0  | 6.5    | 6.1   | 6.5    | 19.6  |
| 61.5° | 7.0   | 7.0   | 13.5  | 7.0   | 6.5   | 6.5    | 16.4  | 6.1    | 5.7   | 6.5    | 16.0  |
| 62°   | 6.5   | 7.0   | 11.5  | 6.5   | 6.1   | 6.5    | 13.5  | 6.1    | 5.3   | 6.1    | 13.5  |
| 62.5° | 6.1   | 6.5   | 9.4   | 6.5   | 6.1   | 6.1    | 11.0  | 5.7    | 5.3   | 6.1    | 11.0  |
| 63°   | 6.1   | 6.1   | 7.4   | 6.1   | 5.7   | 5.7    | 9.0   | 5.7    | 4.9   | 5.7    | 9.0   |
| 63.5° | 5.7   | 6.1   | 6.5   | 6.1   | 5.3   | 5.7    | 7.4   | 5.3    | 4.9   | 5.3    | 7.8   |
| 64°   | 5.7   | 5.7   | 6.1   | 5.7   | 5.3   | 5.3    | 6.1   | 5.3    | 4.9   | 5.3    | 6.5   |
| 64.5° | 5.3   | 5.7   | 5.7   | 5.7   | 4.9   | 5.3    | 5.7   | 4.9    | 4.5   | 4.9    | 5.7   |
| 65°   | 5.3   | 5.3   | 5.7   | 5.3   | 4.9   | 4.9    | 5.3   | 4.9    | 4.5   | 4.9    | 5.7   |
| 65.5° | 4.9   | 5.3   | 5.3   | 5.3   | 4.9   | 4.9    | 4.9   | 4.5    | 4.1   | 4.9    | 5.3   |
| 66°   | 4.9   | 4.9   | 4.9   | 4.9   | 4.5   | 4.5    | 4.9   | 4.5    | 4.1   | 4.5    | 4.9   |





TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-----|-------|-----|-------|-----|--------|------|--------|------|--------|------|
| 67.5° | 4.1 | 4.5   | 4.5 | 4.5   | 4.1 | 4.1    | 4.5  | 4.1    | 3.7  | 4.1    | 4.5  |
| 68°   | 4.1 | 4.1   | 4.5 | 4.1   | 3.7 | 4.1    | 4.1  | 3.7    | 3.3  | 4.1    | 4.1  |
| 68.5° | 3.7 | 4.1   | 4.1 | 4.1   | 3.7 | 3.7    | 4.1  | 3.7    | 3.3  | 3.7    | 4.1  |
| 69°   | 3.7 | 3.7   | 4.1 | 3.7   | 3.7 | 3.7    | 3.7  | 3.3    | 3.3  | 3.7    | 4.1  |
| 69.5° | 3.7 | 3.7   | 3.7 | 3.7   | 3.3 | 3.7    | 3.7  | 3.3    | 2.9  | 3.3    | 3.7  |
| 70°   | 3.3 | 3.7   | 3.7 | 3.7   | 3.3 | 3.3    | 3.7  | 3.3    | 2.9  | 3.3    | 3.7  |
| 70.5° | 3.3 | 3.3   | 3.3 | 3.3   | 3.3 | 3.3    | 3.3  | 2.9    | 2.9  | 3.3    | 3.3  |
| 71°   | 2.9 | 3.3   | 3.3 | 3.3   | 2.9 | 3.3    | 3.3  | 2.9    | 2.9  | 2.9    | 3.3  |
| 71.5° | 2.9 | 3.3   | 3.3 | 3.3   | 2.9 | 2.9    | 2.9  | 2.9    | 2.5  | 2.9    | 3.3  |
| 72°   | 2.9 | 2.9   | 2.9 | 2.9   | 2.9 | 2.9    | 2.9  | 2.5    | 2.5  | 2.9    | 2.9  |
| 72.5° | 2.5 | 2.9   | 2.9 | 2.9   | 2.5 | 2.9    | 2.9  | 2.5    | 2.5  | 2.5    | 2.9  |
| 73°   | 2.5 | 2.5   | 2.9 | 2.9   | 2.5 | 2.5    | 2.5  | 2.5    | 2.0  | 2.5    | 2.9  |
| 73.5° | 2.5 | 2.5   | 2.5 | 2.5   | 2.5 | 2.5    | 2.5  | 2.5    | 2.0  | 2.5    | 2.5  |
| 74°   | 2.0 | 2.5   | 2.5 | 2.5   | 2.0 | 2.5    | 2.5  | 2.0    | 2.0  | 2.5    | 2.5  |
| 74.5° | 2.0 | 2.0   | 2.5 | 2.5   | 2.0 | 2.0    | 2.5  | 2.0    | 2.0  | 2.0    | 2.5  |
| 75°   | 2.0 | 2.0   | 2.0 | 2.0   | 2.0 | 2.0    | 2.0  | 2.0    | 1.6  | 2.0    | 2.0  |
| 75.5° | 2.0 | 2.0   | 2.0 | 2.0   | 2.0 | 2.0    | 2.0  | 1.6    | 1.6  | 2.0    | 2.0  |
| 76°   | 1.6 | 2.0   | 2.0 | 2.0   | 1.6 | 2.0    | 2.0  | 1.6    | 1.6  | 1.6    | 2.0  |
| 76.5° | 1.6 | 1.6   | 2.0 | 2.0   | 1.6 | 1.6    | 2.0  | 1.6    | 1.6  | 1.6    | 2.0  |
| 77°   | 1.6 | 1.6   | 1.6 | 1.6   | 1.6 | 1.6    | 1.6  | 1.6    | 1.2  | 1.6    | 1.6  |
| 77.5° | 1.6 | 1.6   | 1.6 | 1.6   | 1.6 | 1.6    | 1.6  | 1.2    | 1.2  | 1.6    | 1.6  |
| 78°   | 1.2 | 1.2   | 1.6 | 1.6   | 1.2 | 1.6    | 1.6  | 1.2    | 1.2  | 1.2    | 1.6  |
| 78.5° | 1.2 | 1.2   | 1.6 | 1.2   | 1.2 | 1.2    | 1.6  | 1.2    | 1.2  | 1.2    | 1.6  |
| 79°   | 1.2 | 1.2   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 1.2    | 0.8  | 1.2    | 1.2  |
| 79.5° | 1.2 | 1.2   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 0.8    | 0.8  | 1.2    | 1.2  |
| 80°   | 0.8 | 0.8   | 1.2 | 1.2   | 0.8 | 1.2    | 1.2  | 0.8    | 0.8  | 0.8    | 1.2  |
| 80.5° | 0.8 | 0.8   | 1.2 | 1.2   | 0.8 | 1.2    | 1.2  | 0.8    | 0.8  | 0.8    | 1.2  |
| 81°   | 0.8 | 0.8   | 1.2 | 0.8   | 0.8 | 0.8    | 1.2  | 0.8    | 0.8  | 0.8    | 0.8  |
| 81.5° | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.4    | 0.8  | 0.8    | 0.8  |
| 82°   | 0.8 | 0.4   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.4    | 0.4  | 0.4    | 0.8  |
| 82.5° | 0.4 | 0.4   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.4    | 0.4  | 0.4    | 0.8  |
| 83°   | 0.4 | 0.4   | 0.8 | 0.8   | 0.4 | 0.8    | 0.8  | 0.4    | 0.4  | 0.4    | 0.8  |
| 83.5° | 0.4 | 0.4   | 0.8 | 0.4   | 0.4 | 0.4    | 0.8  | 0.4    | 0.4  | 0.4    | 0.4  |
| 84°   | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 84.5° | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.0    | 0.4  | 0.4    | 0.4  |
| 85°   | 0.4 | 0.0   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.0    | 0.0  | 0.0    | 0.4  |
| 85.5° | 0.0 | 0.0   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.0    | 0.0  | 0.0    | 0.4  |
| 86°   | 0.0 | 0.0   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.0    | 0.0  | 0.0    | 0.4  |
| 86.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.4    | 0.4  | 0.0    | 0.0  | 0.0    | 0.4  |
| 87°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 87.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-----|-----|-------|-----|-------|-----|--------|------|--------|------|--------|------|
| 90° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 0°    | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 | 4401.2 |
| 0.5°  | 4400.4 | 4400.4 | 4398.0 | 4395.5 | 4398.4 | 4400.4 |
| 1°    | 4398.8 | 4398.4 | 4394.7 | 4391.4 | 4395.1 | 4395.9 |
| 1.5°  | 4395.9 | 4395.5 | 4391.0 | 4386.5 | 4389.8 | 4391.4 |
| 2°    | 4392.2 | 4391.0 | 4385.7 | 4379.6 | 4384.1 | 4384.5 |
| 2.5°  | 4386.5 | 4384.9 | 4378.3 | 4372.2 | 4376.7 | 4376.7 |
| 3°    | 4380.0 | 4377.9 | 4369.8 | 4362.4 | 4368.9 | 4368.9 |
| 3.5°  | 4372.6 | 4369.3 | 4360.3 | 4353.0 | 4359.9 | 4359.1 |
| 4°    | 4363.6 | 4360.3 | 4349.7 | 4341.1 | 4349.3 | 4348.5 |
| 4.5°  | 4353.0 | 4348.5 | 4337.4 | 4329.3 | 4337.0 | 4335.4 |
| 5°    | 4341.5 | 4335.8 | 4324.4 | 4314.9 | 4323.9 | 4321.1 |
| 5.5°  | 4328.0 | 4321.9 | 4309.2 | 4299.8 | 4308.4 | 4305.1 |
| 6°    | 4313.3 | 4306.4 | 4292.9 | 4284.3 | 4292.0 | 4287.5 |
| 6.5°  | 4296.5 | 4288.8 | 4275.3 | 4265.5 | 4273.6 | 4269.1 |
| 7°    | 4278.5 | 4269.5 | 4255.2 | 4245.4 | 4254.0 | 4248.3 |
| 7.5°  | 4258.1 | 4249.1 | 4234.8 | 4224.6 | 4233.6 | 4227.0 |
| 8°    | 4237.2 | 4226.2 | 4211.1 | 4201.7 | 4211.1 | 4203.7 |
| 8.5°  | 4213.9 | 4201.7 | 4186.5 | 4177.5 | 4188.2 | 4178.8 |
| 9°    | 4189.0 | 4174.3 | 4160.3 | 4152.2 | 4162.0 | 4150.5 |
| 9.5°  | 4162.4 | 4146.4 | 4132.5 | 4125.6 | 4135.0 | 4122.7 |
| 10°   | 4134.6 | 4117.8 | 4102.7 | 4094.9 | 4106.8 | 4096.1 |
| 10.5° | 4105.9 | 4087.1 | 4071.6 | 4067.9 | 4078.5 | 4066.7 |
| 11°   | 4075.7 | 4056.9 | 4040.9 | 4036.0 | 4049.5 | 4037.6 |
| 11.5° | 4045.4 | 4024.1 | 4008.6 | 4002.1 | 4019.2 | 4007.4 |
| 12°   | 4012.7 | 3991.8 | 3975.1 | 3966.1 | 3987.7 | 3978.3 |
| 12.5° | 3980.8 | 3960.3 | 3941.1 | 3931.3 | 3956.3 | 3948.1 |
| 13°   | 3948.1 | 3928.0 | 3906.8 | 3894.1 | 3924.8 | 3916.2 |
| 13.5° | 3914.9 | 3896.1 | 3873.2 | 3856.5 | 3892.0 | 3884.3 |
| 14°   | 3881.4 | 3863.4 | 3838.1 | 3816.8 | 3858.1 | 3852.0 |
| 14.5° | 3847.5 | 3831.1 | 3804.5 | 3778.3 | 3824.6 | 3818.8 |
| 15°   | 3813.9 | 3795.9 | 3768.9 | 3738.3 | 3789.8 | 3785.7 |
| 15.5° | 3779.6 | 3761.2 | 3732.5 | 3698.6 | 3753.8 | 3752.2 |
| 16°   | 3744.0 | 3726.4 | 3695.3 | 3658.5 | 3718.2 | 3715.8 |
| 16.5° | 3707.6 | 3690.4 | 3658.9 | 3618.8 | 3681.8 | 3679.8 |
| 17°   | 3669.5 | 3652.4 | 3620.9 | 3578.3 | 3643.8 | 3642.1 |
| 17.5° | 3632.7 | 3614.7 | 3582.0 | 3538.7 | 3605.7 | 3602.5 |
| 18°   | 3593.5 | 3573.4 | 3541.5 | 3498.6 | 3566.5 | 3559.5 |
| 18.5° | 3554.2 | 3530.9 | 3501.0 | 3457.7 | 3525.6 | 3514.9 |
| 19°   | 3512.9 | 3489.2 | 3458.5 | 3417.2 | 3482.2 | 3469.5 |
| 19.5° | 3470.0 | 3445.8 | 3415.1 | 3376.3 | 3437.2 | 3426.6 |
| 20°   | 3427.0 | 3400.8 | 3371.8 | 3332.9 | 3391.4 | 3382.0 |
| 20.5° | 3382.0 | 3357.1 | 3326.0 | 3291.2 | 3345.6 | 3338.7 |
| 21°   | 3337.4 | 3311.7 | 3281.0 | 3248.7 | 3298.2 | 3296.1 |

TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 22.5° | 3200.4 | 3176.3 | 3139.9 | 3119.9 | 3158.3 | 3163.2 |
| 23°   | 3152.2 | 3131.3 | 3092.0 | 3075.7 | 3111.7 | 3111.7 |
| 23.5° | 3105.1 | 3085.1 | 3044.2 | 3030.7 | 3066.3 | 3057.3 |
| 24°   | 3057.7 | 3033.1 | 2997.2 | 2983.7 | 3018.0 | 3005.3 |
| 24.5° | 3010.2 | 2978.3 | 2948.9 | 2934.2 | 2966.9 | 2960.3 |
| 25°   | 2963.2 | 2926.8 | 2898.6 | 2885.1 | 2912.9 | 2915.4 |
| 25.5° | 2915.8 | 2882.2 | 2846.2 | 2836.0 | 2858.5 | 2870.8 |
| 26°   | 2861.0 | 2838.5 | 2791.0 | 2786.1 | 2803.3 | 2823.7 |
| 26.5° | 2805.7 | 2784.1 | 2739.1 | 2734.2 | 2755.4 | 2765.2 |
| 27°   | 2754.2 | 2725.2 | 2692.9 | 2684.3 | 2708.8 | 2708.8 |
| 27.5° | 2706.4 | 2671.6 | 2646.2 | 2631.9 | 2663.4 | 2650.7 |
| 28°   | 2660.1 | 2603.7 | 2591.4 | 2580.8 | 2615.6 | 2580.8 |
| 28.5° | 2607.4 | 2534.6 | 2531.7 | 2530.5 | 2561.6 | 2508.8 |
| 29°   | 2546.0 | 2463.8 | 2478.1 | 2481.8 | 2503.1 | 2438.5 |
| 29.5° | 2492.0 | 2394.3 | 2413.1 | 2432.7 | 2449.1 | 2368.9 |
| 30°   | 2425.8 | 2325.2 | 2344.8 | 2383.7 | 2385.7 | 2299.0 |
| 30.5° | 2360.7 | 2257.3 | 2274.9 | 2332.9 | 2320.3 | 2229.0 |
| 31°   | 2290.4 | 2189.0 | 2207.0 | 2281.0 | 2252.8 | 2159.5 |
| 31.5° | 2222.9 | 2120.7 | 2139.9 | 2224.1 | 2184.5 | 2091.2 |
| 32°   | 2157.1 | 2054.0 | 2074.0 | 2168.5 | 2117.4 | 2023.7 |
| 32.5° | 2092.4 | 1987.7 | 2007.0 | 2115.8 | 2051.1 | 1955.0 |
| 33°   | 2024.5 | 1920.3 | 1944.4 | 2067.9 | 1987.7 | 1884.3 |
| 33.5° | 1962.0 | 1850.7 | 1880.6 | 2027.0 | 1923.1 | 1814.3 |
| 34°   | 1896.9 | 1780.0 | 1817.6 | 1987.3 | 1859.3 | 1744.4 |
| 34.5° | 1835.6 | 1708.8 | 1751.7 | 1935.0 | 1794.3 | 1672.4 |
| 35°   | 1769.3 | 1637.6 | 1688.8 | 1886.7 | 1731.7 | 1600.0 |
| 35.5° | 1706.3 | 1567.7 | 1622.5 | 1837.2 | 1667.5 | 1528.4 |
| 36°   | 1640.1 | 1498.2 | 1557.5 | 1773.4 | 1604.5 | 1455.6 |
| 36.5° | 1577.5 | 1433.1 | 1491.2 | 1713.3 | 1539.5 | 1391.4 |
| 37°   | 1509.6 | 1368.1 | 1428.6 | 1649.9 | 1476.9 | 1327.2 |
| 37.5° | 1443.8 | 1303.5 | 1366.1 | 1581.6 | 1414.7 | 1263.0 |
| 38°   | 1378.3 | 1238.5 | 1303.9 | 1512.9 | 1352.2 | 1198.4 |
| 38.5° | 1314.9 | 1173.8 | 1241.7 | 1443.4 | 1290.0 | 1137.0 |
| 39°   | 1252.8 | 1114.5 | 1179.6 | 1382.0 | 1227.8 | 1076.9 |
| 39.5° | 1193.1 | 1055.6 | 1121.1 | 1321.1 | 1165.6 | 1016.0 |
| 40°   | 1133.7 | 995.5  | 1066.3 | 1259.7 | 1109.2 | 957.5  |
| 40.5° | 1077.3 | 935.4  | 1010.2 | 1198.8 | 1052.8 | 897.8  |
| 41°   | 1022.5 | 879.3  | 956.7  | 1141.1 | 998.8  | 840.1  |
| 41.5° | 968.5  | 819.2  | 903.1  | 1085.1 | 944.0  | 783.6  |
| 42°   | 915.3  | 766.9  | 850.3  | 1030.3 | 892.0  | 728.8  |
| 42.5° | 862.2  | 713.7  | 798.4  | 977.5  | 840.5  | 676.1  |
| 43°   | 810.2  | 664.2  | 746.8  | 924.3  | 791.4  | 626.6  |
| 43.5° | 759.9  | 613.1  | 697.3  | 872.8  | 741.5  | 578.7  |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°  | 292.5° | 315°  | 337.5° | 360°  |
|-------|--------|-------|--------|-------|--------|-------|
| 45°   | 616.8  | 480.2 | 560.3  | 723.1 | 600.0  | 447.0 |
| 45.5° | 572.6  | 437.6 | 518.6  | 676.9 | 557.1  | 406.1 |
| 46°   | 530.5  | 399.2 | 478.9  | 631.1 | 514.9  | 368.1 |
| 46.5° | 490.0  | 361.6 | 440.5  | 589.0 | 475.7  | 331.7 |
| 47°   | 451.1  | 325.6 | 403.7  | 547.7 | 437.2  | 296.9 |
| 47.5° | 414.3  | 291.2 | 367.3  | 508.8 | 399.6  | 265.0 |
| 48°   | 380.8  | 261.8 | 333.3  | 470.8 | 365.2  | 235.6 |
| 48.5° | 347.2  | 232.7 | 301.4  | 436.4 | 331.3  | 208.6 |
| 49°   | 313.7  | 207.0 | 271.2  | 402.9 | 299.4  | 184.5 |
| 49.5° | 280.6  | 183.6 | 243.4  | 371.8 | 268.3  | 162.4 |
| 50°   | 251.5  | 162.0 | 216.8  | 340.3 | 242.1  | 142.7 |
| 50.5° | 224.5  | 142.3 | 192.6  | 311.7 | 216.4  | 128.0 |
| 51°   | 200.8  | 128.0 | 171.0  | 283.4 | 191.8  | 113.3 |
| 51.5° | 177.9  | 113.7 | 151.7  | 258.1 | 168.9  | 98.6  |
| 52°   | 156.6  | 99.8  | 137.4  | 233.9 | 149.7  | 83.8  |
| 52.5° | 137.8  | 85.5  | 123.1  | 210.6 | 135.0  | 72.4  |
| 53°   | 121.1  | 74.0  | 108.8  | 188.5 | 120.2  | 61.8  |
| 53.5° | 106.3  | 63.4  | 94.5   | 168.9 | 105.5  | 51.5  |
| 54°   | 92.8   | 53.2  | 80.2   | 150.5 | 90.8   | 42.1  |
| 54.5° | 81.0   | 43.8  | 69.9   | 135.8 | 76.1   | 32.3  |
| 55°   | 70.3   | 34.4  | 59.7   | 121.5 | 65.4   | 23.7  |
| 55.5° | 60.1   | 25.4  | 50.3   | 106.7 | 56.0   | 17.2  |
| 56°   | 52.4   | 18.8  | 40.5   | 92.4  | 46.6   | 15.5  |
| 56.5° | 44.6   | 13.5  | 31.9   | 77.7  | 38.0   | 13.9  |
| 57°   | 36.8   | 12.7  | 23.3   | 66.7  | 29.9   | 12.3  |
| 57.5° | 29.0   | 11.9  | 16.8   | 57.3  | 22.1   | 10.6  |
| 58°   | 21.3   | 11.5  | 15.1   | 48.7  | 15.5   | 9.0   |
| 58.5° | 13.5   | 10.6  | 13.5   | 40.9  | 13.9   | 8.6   |
| 59°   | 10.6   | 10.2  | 12.3   | 34.4  | 12.3   | 8.2   |
| 59.5° | 9.8    | 9.8   | 10.6   | 28.6  | 10.2   | 8.2   |
| 60°   | 9.4    | 9.0   | 9.4    | 23.7  | 8.6    | 7.8   |
| 60.5° | 9.0    | 8.6   | 9.0    | 19.6  | 8.2    | 7.4   |
| 61°   | 8.6    | 8.2   | 8.6    | 16.4  | 7.8    | 7.0   |
| 61.5° | 8.2    | 7.8   | 8.2    | 14.3  | 7.4    | 7.0   |
| 62°   | 7.8    | 7.8   | 7.8    | 12.3  | 7.0    | 6.5   |
| 62.5° | 7.4    | 7.4   | 7.4    | 10.2  | 7.0    | 6.1   |
| 63°   | 7.0    | 7.0   | 7.0    | 8.2   | 6.5    | 6.1   |
| 63.5° | 6.5    | 6.5   | 6.5    | 7.0   | 6.1    | 5.7   |
| 64°   | 6.5    | 6.1   | 6.5    | 6.1   | 6.1    | 5.7   |
| 64.5° | 6.1    | 6.1   | 6.1    | 6.1   | 5.7    | 5.3   |
| 65°   | 5.7    | 5.7   | 5.7    | 5.7   | 5.7    | 5.3   |
| 65.5° | 5.7    | 5.7   | 5.7    | 5.7   | 5.3    | 4.9   |
| 66°   | 5.3    | 5.3   | 5.3    | 5.3   | 5.3    | 4.9   |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|------|--------|------|--------|------|
| 67.5° | 4.9    | 4.5  | 4.9    | 4.5  | 4.5    | 4.1  |
| 68°   | 4.5    | 4.5  | 4.5    | 4.5  | 4.5    | 4.1  |
| 68.5° | 4.5    | 4.1  | 4.5    | 4.1  | 4.1    | 3.7  |
| 69°   | 4.1    | 4.1  | 4.1    | 4.1  | 4.1    | 3.7  |
| 69.5° | 4.1    | 4.1  | 4.1    | 4.1  | 3.7    | 3.7  |
| 70°   | 3.7    | 3.7  | 3.7    | 3.7  | 3.7    | 3.3  |
| 70.5° | 3.7    | 3.7  | 3.7    | 3.7  | 3.7    | 3.3  |
| 71°   | 3.3    | 3.3  | 3.3    | 3.3  | 3.3    | 2.9  |
| 71.5° | 3.3    | 3.3  | 3.3    | 3.3  | 3.3    | 2.9  |
| 72°   | 3.3    | 3.3  | 3.3    | 3.3  | 2.9    | 2.9  |
| 72.5° | 2.9    | 2.9  | 2.9    | 2.9  | 2.9    | 2.5  |
| 73°   | 2.9    | 2.9  | 2.9    | 2.9  | 2.9    | 2.5  |
| 73.5° | 2.9    | 2.9  | 2.9    | 2.9  | 2.5    | 2.5  |
| 74°   | 2.5    | 2.5  | 2.5    | 2.5  | 2.5    | 2.0  |
| 74.5° | 2.5    | 2.5  | 2.5    | 2.5  | 2.5    | 2.0  |
| 75°   | 2.5    | 2.5  | 2.5    | 2.5  | 2.0    | 2.0  |
| 75.5° | 2.0    | 2.0  | 2.0    | 2.0  | 2.0    | 2.0  |
| 76°   | 2.0    | 2.0  | 2.0    | 2.0  | 2.0    | 1.6  |
| 76.5° | 2.0    | 2.0  | 2.0    | 2.0  | 2.0    | 1.6  |
| 77°   | 2.0    | 1.6  | 2.0    | 2.0  | 1.6    | 1.6  |
| 77.5° | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 78°   | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.2  |
| 78.5° | 1.6    | 1.6  | 1.6    | 1.6  | 1.2    | 1.2  |
| 79°   | 1.2    | 1.2  | 1.6    | 1.6  | 1.2    | 1.2  |
| 79.5° | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 80°   | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 0.8  |
| 80.5° | 1.2    | 1.2  | 1.2    | 1.2  | 0.8    | 0.8  |
| 81°   | 1.2    | 1.2  | 1.2    | 1.2  | 0.8    | 0.8  |
| 81.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 82°   | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 82.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.4    | 0.4  |
| 83°   | 0.8    | 0.8  | 0.8    | 0.8  | 0.4    | 0.4  |
| 83.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.4    | 0.4  |
| 84°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 84.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 85°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.0    | 0.4  |
| 85.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.0    | 0.0  |
| 86°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.0    | 0.0  |
| 86.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.0    | 0.0  |
| 87°   | 0.0    | 0.4  | 0.0    | 0.0  | 0.0    | 0.0  |
| 87.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776314

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

|     | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-----|--------|------|--------|------|--------|------|
| 90° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



Report Generated By 670245859 / DESKTOP-T8S5UU9



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - 135°-315°

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Cooper Lighting Solutions Photometric Lab  
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Peachtree City, GA 30269

Scaled Data Report



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Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





|       |        |        |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 21.5° | 3254.4 | 3254.0 | 3256.9 | 3276.9 | 3291.2 | 3337.8 | 3341.9 | 3332.5 | 3348.5 | 3350.1 | 3303.5 |
| 22°   | 3210.6 | 3207.8 | 3215.1 | 3232.7 | 3251.1 | 3292.4 | 3299.8 | 3289.2 | 3305.5 | 3304.7 | 3261.4 |



|       |       |       |       |       |       |       |        |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 44°   | 532.5 | 637.6 | 886.7 | 782.4 | 643.8 | 777.9 | 1016.0 | 793.9 | 661.4 | 768.9 | 936.6 |
| 44.5° | 487.9 | 591.4 | 831.5 | 736.6 | 593.9 | 728.8 | 960.7  | 746.4 | 612.3 | 721.9 | 882.2 |



|       |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 66.5° | 4.5 | 4.9 | 4.9 | 4.9 | 4.5 | 4.5 | 4.5 | 4.1 | 4.1 | 4.5 | 4.9 |
| 67°   | 4.5 | 4.5 | 4.5 | 4.5 | 4.1 | 4.5 | 4.5 | 4.1 | 3.7 | 4.1 | 4.5 |



|       |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 89°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 89.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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Scaled Data Report





|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| 21.5° | 3292.4 | 3265.0 | 3234.4 | 3205.3 | 3252.0 | 3254.4 |
| 22°   | 3246.2 | 3220.9 | 3187.7 | 3163.2 | 3205.3 | 3210.6 |



|       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 44°   | 710.8 | 567.7 | 649.9 | 821.3 | 691.6 | 532.5 |
| 44.5° | 662.2 | 523.5 | 604.9 | 772.2 | 644.2 | 487.9 |

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|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 66.5° | 5.3 | 4.9 | 5.3 | 4.9 | 4.9 | 4.5 |
| 67°   | 4.9 | 4.9 | 4.9 | 4.9 | 4.9 | 4.5 |

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Scaled Data Report



|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 89°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 89.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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(END OF REPORT)