

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



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P1449885

Luminaire Tested: **TWC150_T4_90W_4000K**

Issue Date: 5/19/2026

Test Information

Test Method: LM-79-08
Report Number: P1449885
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ()
Test Lab: INNOVATION CENTER
Issue Date: 5/19/2026
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: TWC150_T4_90W_4000K
Description: Tapered Wall Cutoff Wall Mount Luminaire at, T4 distribution, 90W
4000K settings
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14063 lumens
Efficiency: N/A
Efficacy: 163.9 lumens/watt
Luminous Opening: Rectangular (W 1.33' x L: 0.42' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G2

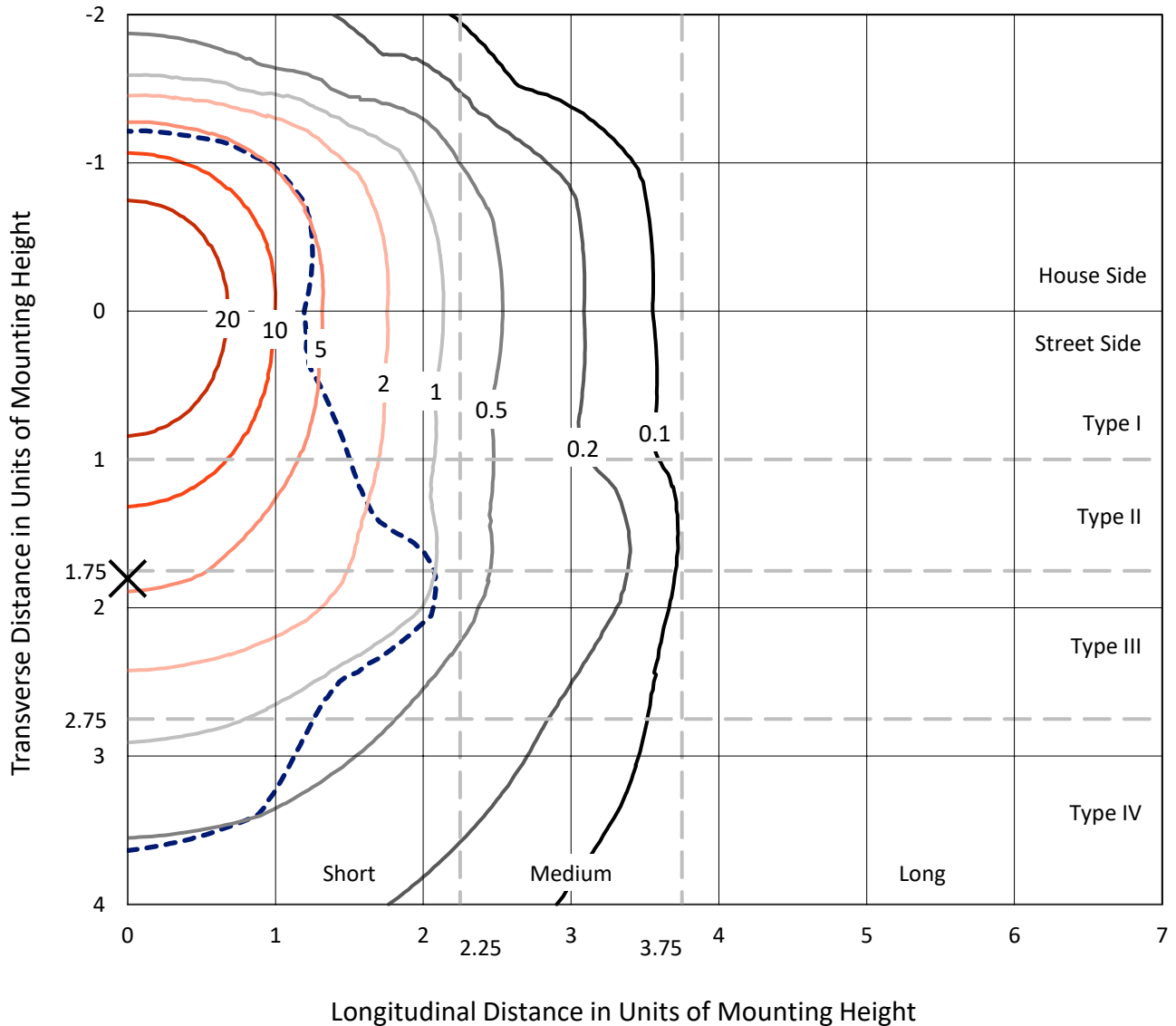
Input Watts (W): 85.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

Iso-Footcandle Lines of Horizontal Illumination

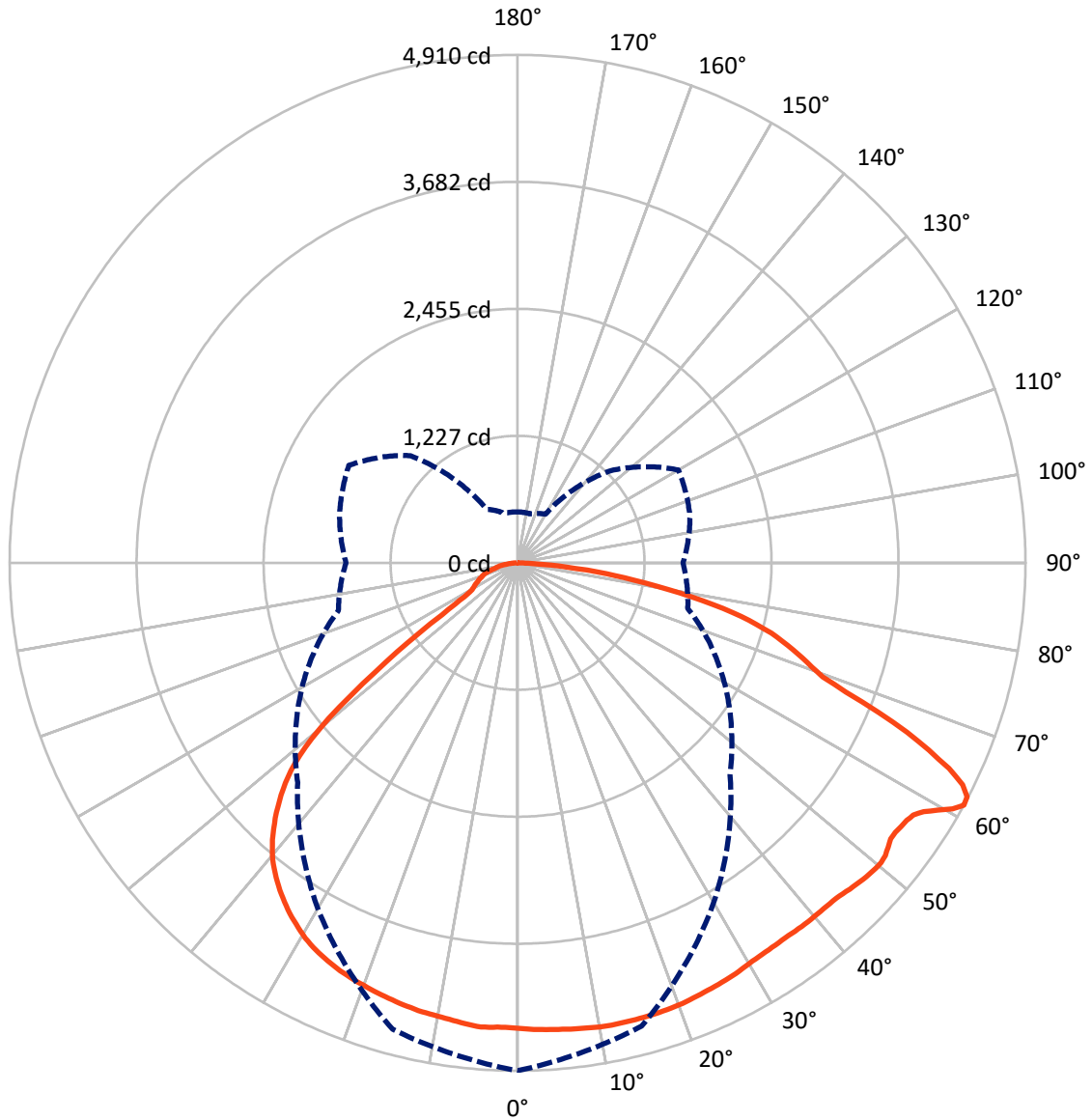
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 45 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 61-Deg Vertical

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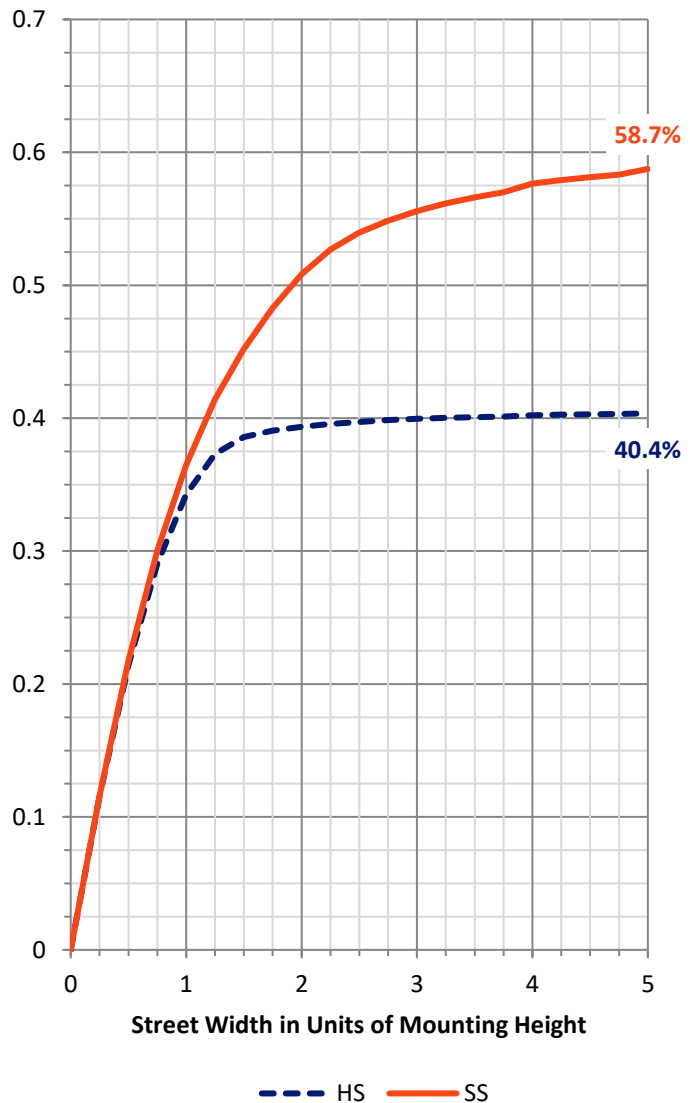
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 5717.1 | 0.0 | 5717.1 |
| | % Fixture | 40.7 | 0.0 | 40.7 |
| Street Side | Lumens | 8345.9 | 0.0 | 8345.9 |
| | % Fixture | 59.3 | 0.0 | 59.3 |
| Total | Lumens | 14063.0 | 0.0 | 14063.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 428.2 | 3.0 |
| 10°-20° | 1244.1 | 8.8 |
| 20°-30° | 1934.3 | 13.8 |
| 30°-40° | 2424.0 | 17.2 |
| 40°-50° | 2639.5 | 18.8 |
| 50°-60° | 2384.4 | 17.0 |
| 60°-70° | 1815.3 | 12.9 |
| 70°-80° | 959.9 | 6.8 |
| 80°-90° | 233.5 | 1.7 |
| 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°-90° | 14063.0 | 100.0 |
| 0°-180° | 14063.0 | 100.0 |

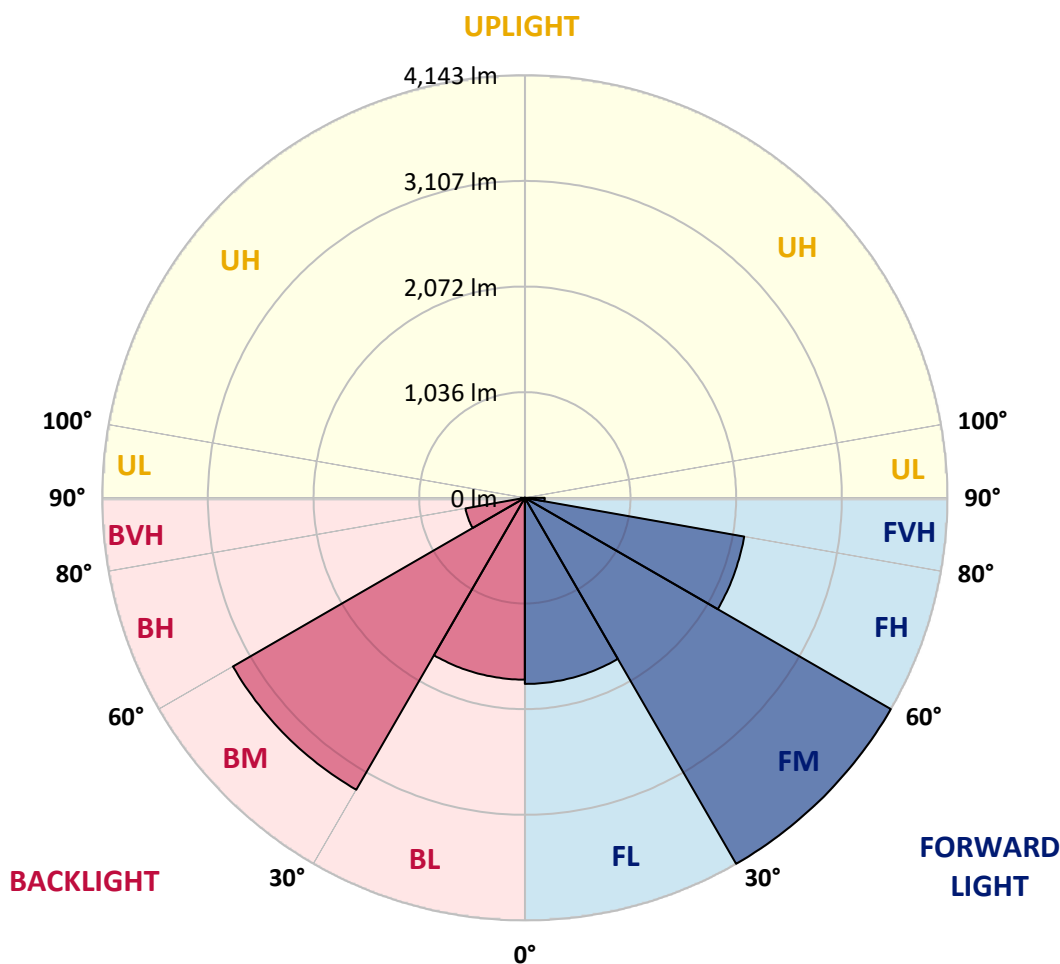


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 CATALOG NUMBER: TWC150_T4_90W_4000K

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1824.3 | 13.0 | | | |
| FM (30°-60°) | 4143.0 | 29.5 | | | |
| FH (60°-80°) | 2184.0 | 15.5 | | | G2/5000 |
| FVH (80°-90°) | 194.5 | 1.4 | | | G2/225 |
| BL (0°-30°) | 1782.3 | 12.7 | B3/2500 | | |
| BM (30°-60°) | 3304.8 | 23.5 | B3/5000 | | |
| BH (60°-80°) | 591.1 | 4.2 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 38.9 | 0.3 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G2
 Type IV Short





REPORT NUMBER: P1449885

CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (FULL):

| | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 |
| 1° | 4509.2 | 4508.7 | 4506.6 | 4503.4 | 4501.7 | 4499.8 | 4500.0 | 4496.7 | 4497.2 | 4495.3 | 4494.6 |
| 2° | 4515.3 | 4513.2 | 4509.3 | 4505.6 | 4502.1 | 4497.2 | 4498.6 | 4491.4 | 4490.8 | 4491.0 | 4489.4 |
| 3° | 4520.5 | 4517.4 | 4512.6 | 4507.4 | 4500.4 | 4494.3 | 4493.5 | 4485.3 | 4485.1 | 4485.7 | 4488.2 |
| 4° | 4525.3 | 4521.2 | 4515.8 | 4507.0 | 4497.8 | 4487.9 | 4485.0 | 4477.9 | 4477.9 | 4483.3 | 4489.7 |
| 5° | 4529.5 | 4524.2 | 4516.2 | 4506.5 | 4491.7 | 4481.1 | 4476.0 | 4468.3 | 4470.6 | 4483.0 | 4492.3 |
| 6° | 4535.6 | 4528.8 | 4517.9 | 4504.2 | 4489.3 | 4472.1 | 4464.7 | 4457.1 | 4464.7 | 4481.4 | 4488.5 |
| 7° | 4540.5 | 4532.8 | 4518.6 | 4500.0 | 4481.7 | 4461.7 | 4451.2 | 4444.7 | 4458.8 | 4474.8 | 4478.6 |
| 8° | 4547.2 | 4537.0 | 4518.8 | 4496.0 | 4472.8 | 4449.2 | 4437.2 | 4431.4 | 4451.6 | 4463.2 | 4464.9 |
| 9° | 4553.2 | 4541.7 | 4519.6 | 4490.8 | 4462.3 | 4436.1 | 4421.6 | 4417.3 | 4441.4 | 4447.8 | 4451.9 |
| 10° | 4558.6 | 4545.4 | 4519.7 | 4487.0 | 4452.9 | 4421.8 | 4402.5 | 4403.1 | 4427.5 | 4430.6 | 4438.4 |
| 11° | 4560.5 | 4548.4 | 4519.0 | 4481.8 | 4442.0 | 4407.3 | 4383.9 | 4388.6 | 4410.2 | 4414.6 | 4425.2 |
| 12° | 4560.0 | 4548.4 | 4516.7 | 4473.5 | 4429.5 | 4388.0 | 4364.0 | 4372.3 | 4391.3 | 4398.4 | 4413.3 |
| 13° | 4559.6 | 4545.6 | 4510.8 | 4462.6 | 4413.1 | 4369.2 | 4341.0 | 4352.9 | 4370.1 | 4379.3 | 4402.3 |
| 14° | 4559.1 | 4544.7 | 4506.1 | 4450.0 | 4396.1 | 4350.8 | 4316.3 | 4331.2 | 4347.1 | 4363.1 | 4391.5 |
| 15° | 4558.7 | 4542.5 | 4497.7 | 4438.2 | 4375.9 | 4327.3 | 4290.7 | 4308.1 | 4322.3 | 4345.0 | 4378.4 |
| 16° | 4558.2 | 4537.3 | 4489.5 | 4422.3 | 4354.8 | 4304.0 | 4264.3 | 4282.6 | 4298.0 | 4327.7 | 4363.5 |
| 17° | 4556.8 | 4533.4 | 4480.5 | 4405.0 | 4329.5 | 4275.9 | 4235.9 | 4256.3 | 4271.9 | 4308.9 | 4348.3 |
| 18° | 4553.7 | 4528.4 | 4470.4 | 4386.8 | 4303.4 | 4246.3 | 4204.4 | 4226.0 | 4246.5 | 4288.5 | 4333.7 |
| 19° | 4550.3 | 4522.1 | 4459.6 | 4368.8 | 4275.2 | 4212.3 | 4173.4 | 4195.6 | 4219.1 | 4266.2 | 4317.0 |
| 20° | 4546.7 | 4515.8 | 4448.1 | 4350.2 | 4246.4 | 4178.1 | 4138.9 | 4163.8 | 4193.0 | 4243.5 | 4300.4 |
| 21° | 4540.3 | 4510.2 | 4435.8 | 4330.0 | 4219.3 | 4139.8 | 4105.4 | 4131.7 | 4164.9 | 4223.0 | 4283.1 |
| 22° | 4533.3 | 4501.3 | 4422.7 | 4310.3 | 4187.9 | 4102.8 | 4069.5 | 4095.8 | 4135.6 | 4199.1 | 4264.2 |
| 23° | 4526.1 | 4491.9 | 4409.3 | 4288.3 | 4156.2 | 4061.7 | 4030.5 | 4062.1 | 4103.3 | 4175.1 | 4244.5 |
| 24° | 4520.6 | 4484.7 | 4395.5 | 4268.1 | 4124.8 | 4020.0 | 3991.5 | 4025.1 | 4069.6 | 4146.8 | 4222.9 |
| 25° | 4513.5 | 4473.4 | 4380.9 | 4242.7 | 4091.8 | 3977.2 | 3948.5 | 3989.1 | 4034.5 | 4120.7 | 4202.7 |
| 26° | 4506.8 | 4464.9 | 4365.3 | 4220.5 | 4059.2 | 3933.1 | 3904.7 | 3948.9 | 3999.2 | 4092.9 | 4179.4 |
| 27° | 4500.5 | 4454.3 | 4349.9 | 4195.8 | 4023.0 | 3889.5 | 3859.5 | 3908.3 | 3962.8 | 4064.1 | 4157.9 |
| 28° | 4489.9 | 4443.5 | 4331.9 | 4169.7 | 3988.8 | 3843.3 | 3814.1 | 3866.0 | 3926.2 | 4033.6 | 4131.8 |
| 29° | 4478.8 | 4430.2 | 4315.1 | 4142.6 | 3950.8 | 3797.9 | 3765.3 | 3822.3 | 3889.7 | 4004.6 | 4106.2 |
| 30° | 4470.1 | 4417.4 | 4295.9 | 4114.4 | 3912.1 | 3749.8 | 3716.6 | 3775.8 | 3852.3 | 3973.1 | 4077.2 |
| 31° | 4465.0 | 4406.7 | 4274.8 | 4086.8 | 3872.1 | 3701.3 | 3667.3 | 3727.9 | 3812.2 | 3938.8 | 4048.3 |
| 32° | 4460.4 | 4397.6 | 4252.4 | 4057.2 | 3832.2 | 3650.3 | 3617.5 | 3678.3 | 3773.5 | 3904.5 | 4016.2 |
| 33° | 4457.3 | 4388.6 | 4233.3 | 4025.7 | 3788.5 | 3599.6 | 3565.4 | 3626.5 | 3731.8 | 3868.3 | 3981.8 |
| 34° | 4455.9 | 4381.3 | 4213.4 | 3993.7 | 3746.5 | 3548.4 | 3512.4 | 3575.7 | 3692.2 | 3832.0 | 3942.2 |
| 35° | 4453.5 | 4376.6 | 4193.9 | 3960.5 | 3701.6 | 3494.6 | 3457.3 | 3520.9 | 3647.1 | 3791.7 | 3901.6 |
| 36° | 4455.8 | 4370.4 | 4176.0 | 3925.8 | 3656.4 | 3439.8 | 3399.5 | 3468.4 | 3603.7 | 3751.2 | 3857.7 |
| 37° | 4459.6 | 4368.8 | 4161.4 | 3892.2 | 3608.8 | 3382.8 | 3341.0 | 3412.9 | 3556.1 | 3707.1 | 3810.7 |
| 38° | 4461.3 | 4367.3 | 4144.3 | 3859.4 | 3560.8 | 3325.8 | 3280.5 | 3356.8 | 3506.9 | 3661.4 | 3761.2 |
| 39° | 4463.7 | 4363.5 | 4129.3 | 3823.8 | 3512.8 | 3264.1 | 3217.5 | 3300.2 | 3455.2 | 3611.0 | 3708.8 |
| 40° | 4462.7 | 4357.4 | 4116.5 | 3792.4 | 3460.1 | 3201.8 | 3153.4 | 3243.9 | 3404.1 | 3560.1 | 3656.6 |
| 41° | 4464.1 | 4351.1 | 4099.9 | 3760.5 | 3407.5 | 3138.8 | 3088.6 | 3187.6 | 3352.5 | 3507.2 | 3597.0 |
| 42° | 4467.9 | 4347.2 | 4081.4 | 3732.9 | 3355.9 | 3074.1 | 3021.5 | 3128.4 | 3298.5 | 3450.5 | 3538.0 |
| 43° | 4472.5 | 4343.7 | 4061.8 | 3699.9 | 3303.7 | 3009.0 | 2954.4 | 3068.7 | 3241.7 | 3392.0 | 3470.1 |
| 44° | 4485.1 | 4344.0 | 4044.9 | 3668.4 | 3251.8 | 2940.8 | 2887.4 | 3009.1 | 3186.4 | 3329.0 | 3399.8 |



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CATALOG NUMBER: TWC150_T4_90W_400K

CANDELA DISTRIBUTION (continued):

| | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 45° | 4501.7 | 4352.7 | 4025.8 | 3634.7 | 3203.5 | 2874.6 | 2815.2 | 2947.3 | 3126.4 | 3264.7 | 3321.6 |
| 46° | 4514.2 | 4363.4 | 4007.3 | 3600.5 | 3156.1 | 2803.1 | 2745.4 | 2883.3 | 3065.8 | 3198.7 | 3237.8 |
| 47° | 4530.2 | 4366.6 | 3995.2 | 3563.7 | 3109.7 | 2737.4 | 2673.8 | 2820.8 | 3004.2 | 3131.5 | 3147.5 |
| 48° | 4540.1 | 4373.7 | 3993.4 | 3524.8 | 3065.5 | 2667.2 | 2601.5 | 2753.5 | 2939.0 | 3054.1 | 3050.9 |
| 49° | 4551.0 | 4375.4 | 3982.1 | 3491.4 | 3021.2 | 2601.1 | 2526.1 | 2689.0 | 2871.6 | 2974.6 | 2947.5 |
| 50° | 4554.7 | 4383.7 | 3967.6 | 3452.1 | 2978.1 | 2531.2 | 2450.2 | 2618.1 | 2802.4 | 2887.2 | 2838.3 |
| 51° | 4543.1 | 4388.6 | 3951.0 | 3419.2 | 2932.9 | 2464.0 | 2375.3 | 2546.6 | 2729.3 | 2796.2 | 2723.6 |
| 52° | 4514.1 | 4371.6 | 3931.0 | 3388.1 | 2889.9 | 2396.9 | 2297.2 | 2471.1 | 2653.0 | 2697.9 | 2590.5 |
| 53° | 4486.4 | 4336.4 | 3913.8 | 3354.8 | 2838.7 | 2330.4 | 2218.7 | 2394.6 | 2575.2 | 2595.1 | 2427.7 |
| 54° | 4484.6 | 4307.7 | 3884.5 | 3311.8 | 2781.6 | 2264.7 | 2139.1 | 2316.0 | 2495.3 | 2486.6 | 2221.8 |
| 55° | 4499.6 | 4308.7 | 3842.3 | 3270.2 | 2720.6 | 2194.5 | 2059.0 | 2235.1 | 2410.0 | 2372.4 | 1962.6 |
| 56° | 4510.9 | 4316.3 | 3801.9 | 3223.4 | 2654.2 | 2126.3 | 1980.5 | 2157.8 | 2319.6 | 2250.3 | 1668.6 |
| 57° | 4535.9 | 4322.2 | 3786.4 | 3178.6 | 2585.7 | 2051.9 | 1900.2 | 2076.9 | 2222.7 | 2121.0 | 1387.0 |
| 58° | 4603.8 | 4341.9 | 3784.9 | 3126.3 | 2519.2 | 1974.9 | 1822.6 | 1995.8 | 2120.2 | 1961.7 | 1105.5 |
| 59° | 4710.9 | 4412.3 | 3777.9 | 3047.7 | 2453.6 | 1889.2 | 1746.3 | 1905.6 | 2010.9 | 1768.6 | 826.3 |
| 60° | 4830.2 | 4516.7 | 3770.1 | 2969.0 | 2381.0 | 1799.1 | 1672.3 | 1819.8 | 1905.8 | 1511.4 | 660.6 |
| 61° | 4909.7 | 4635.3 | 3791.9 | 2903.4 | 2306.2 | 1703.2 | 1599.3 | 1725.5 | 1795.5 | 1254.4 | 542.8 |
| 62° | 4898.7 | 4696.6 | 3867.9 | 2856.4 | 2221.8 | 1608.0 | 1527.0 | 1629.9 | 1685.3 | 997.4 | 478.0 |
| 63° | 4806.2 | 4660.8 | 3979.2 | 2813.9 | 2134.0 | 1510.3 | 1455.0 | 1534.4 | 1567.4 | 758.8 | 446.3 |
| 64° | 4619.4 | 4536.8 | 4077.0 | 2777.2 | 2037.9 | 1412.9 | 1380.2 | 1436.4 | 1444.7 | 582.5 | 427.4 |
| 65° | 4369.1 | 4310.1 | 4072.3 | 2761.1 | 1926.6 | 1317.5 | 1302.6 | 1344.4 | 1302.5 | 469.5 | 410.5 |
| 66° | 4105.1 | 4031.0 | 3943.6 | 2787.3 | 1799.2 | 1220.7 | 1225.1 | 1253.1 | 1160.2 | 408.0 | 393.9 |
| 67° | 3777.6 | 3755.0 | 3686.6 | 2901.7 | 1674.5 | 1134.4 | 1147.1 | 1161.7 | 1016.6 | 379.9 | 376.2 |
| 68° | 3409.9 | 3375.7 | 3349.2 | 3068.8 | 1562.9 | 1046.8 | 1055.1 | 1065.0 | 809.6 | 360.9 | 357.9 |
| 69° | 3149.8 | 3070.4 | 2997.9 | 3105.7 | 1464.3 | 966.2 | 962.7 | 980.0 | 601.8 | 342.7 | 339.6 |
| 70° | 3018.3 | 2884.4 | 2643.1 | 2894.3 | 1369.0 | 885.4 | 867.1 | 894.9 | 446.6 | 323.6 | 321.7 |
| 71° | 2903.9 | 2785.6 | 2394.5 | 2441.5 | 1286.4 | 812.8 | 774.5 | 814.9 | 358.6 | 304.0 | 304.2 |
| 72° | 2792.1 | 2678.2 | 2261.7 | 1989.3 | 1249.9 | 742.4 | 684.6 | 730.9 | 315.1 | 284.4 | 288.0 |
| 73° | 2670.9 | 2569.3 | 2153.1 | 1686.3 | 1383.9 | 673.1 | 598.8 | 644.8 | 290.6 | 265.1 | 274.2 |
| 74° | 2546.3 | 2457.8 | 2037.3 | 1563.1 | 1744.2 | 606.2 | 520.3 | 560.6 | 269.0 | 247.0 | 258.9 |
| 75° | 2390.7 | 2338.1 | 1909.9 | 1451.4 | 1532.8 | 535.3 | 446.4 | 472.4 | 246.5 | 230.1 | 239.1 |
| 76° | 2223.5 | 2201.7 | 1789.2 | 1360.6 | 970.1 | 464.3 | 382.8 | 393.2 | 226.2 | 214.1 | 219.0 |
| 77° | 2033.1 | 2060.7 | 1652.2 | 1274.2 | 689.8 | 393.4 | 322.3 | 311.2 | 206.3 | 198.4 | 197.9 |
| 78° | 1815.0 | 1902.6 | 1521.5 | 1130.3 | 590.6 | 357.3 | 269.2 | 248.7 | 187.9 | 179.6 | 176.6 |
| 79° | 1594.6 | 1715.3 | 1418.8 | 909.5 | 639.1 | 314.5 | 221.6 | 209.5 | 169.4 | 159.5 | 158.0 |
| 80° | 1362.5 | 1518.5 | 1304.0 | 764.7 | 677.6 | 271.0 | 181.7 | 183.3 | 152.6 | 139.5 | 139.5 |
| 81° | 1141.4 | 1303.1 | 1172.6 | 686.7 | 534.2 | 247.4 | 148.1 | 159.9 | 135.9 | 119.3 | 121.1 |
| 82° | 946.8 | 1093.7 | 1025.4 | 621.9 | 390.5 | 216.4 | 114.6 | 136.5 | 119.1 | 96.5 | 110.1 |
| 83° | 789.5 | 930.0 | 814.9 | 527.9 | 246.7 | 193.0 | 88.8 | 113.1 | 100.0 | 77.2 | 96.6 |
| 84° | 562.7 | 716.5 | 668.7 | 433.1 | 207.2 | 155.6 | 66.3 | 91.0 | 80.7 | 66.0 | 80.9 |
| 85° | 404.6 | 526.9 | 515.3 | 338.3 | 177.3 | 99.2 | 48.4 | 71.0 | 62.1 | 54.9 | 63.7 |
| 86° | 247.2 | 338.1 | 361.8 | 146.0 | 145.1 | 65.2 | 33.2 | 52.5 | 44.2 | 40.8 | 45.1 |
| 87° | 103.5 | 149.3 | 208.3 | 57.5 | 101.2 | 52.2 | 23.1 | 35.1 | 31.8 | 28.8 | 32.0 |
| 88° | 51.6 | 74.2 | 105.3 | 41.8 | 32.0 | 39.3 | 12.9 | 23.5 | 21.6 | 16.8 | 18.8 |
| 89° | 1.6 | 1.5 | 2.5 | 28.0 | 24.1 | 26.4 | 3.0 | 12.0 | 11.3 | 5.0 | 6.0 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° |
|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 91° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 93° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 94° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 96° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 97° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 98° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 99° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 101° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 103° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 104° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 106° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 107° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 108° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 109° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 111° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 113° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 114° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 116° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 119° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 121° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 123° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 124° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 126° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 129° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 131° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 133° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 134° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° |
|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| 135° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 136° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 138° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 139° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 141° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 143° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 144° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 146° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 148° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 149° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 151° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 153° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 154° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 156° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 158° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 159° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 161° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 163° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 164° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 166° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 168° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 169° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 171° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 173° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 174° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 176° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 178° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 179° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 0° | 15° | 30° | 45° | 60° | 75° | 90° | 105° | 120° | 135° | 150° |
|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885

CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 | 4500.9 |
| 1° | 4494.9 | 4495.3 | 4496.2 | 4497.1 | 4495.1 | 4496.0 | 4498.4 | 4503.2 | 4504.5 | 4506.7 | 4508.0 |
| 2° | 4491.0 | 4492.3 | 4491.6 | 4492.0 | 4491.4 | 4492.0 | 4494.4 | 4502.8 | 4503.3 | 4508.5 | 4511.5 |
| 3° | 4489.3 | 4491.7 | 4490.6 | 4489.2 | 4487.4 | 4487.4 | 4490.3 | 4499.8 | 4502.8 | 4509.8 | 4514.8 |
| 4° | 4495.2 | 4498.0 | 4495.4 | 4490.6 | 4484.6 | 4481.2 | 4483.1 | 4493.3 | 4500.2 | 4507.4 | 4516.4 |
| 5° | 4497.5 | 4500.0 | 4498.4 | 4493.6 | 4484.8 | 4475.8 | 4476.0 | 4487.8 | 4495.4 | 4507.8 | 4518.1 |
| 6° | 4492.4 | 4493.5 | 4494.4 | 4492.5 | 4484.9 | 4469.2 | 4465.6 | 4478.8 | 4489.5 | 4504.9 | 4517.9 |
| 7° | 4482.1 | 4483.5 | 4484.5 | 4485.3 | 4479.9 | 4465.3 | 4456.3 | 4468.1 | 4481.6 | 4500.7 | 4516.7 |
| 8° | 4468.5 | 4472.0 | 4472.3 | 4472.7 | 4471.4 | 4461.1 | 4444.3 | 4455.3 | 4473.0 | 4495.4 | 4516.2 |
| 9° | 4459.0 | 4462.1 | 4463.7 | 4459.6 | 4459.6 | 4454.2 | 4430.8 | 4443.0 | 4462.9 | 4488.6 | 4512.5 |
| 10° | 4447.8 | 4452.0 | 4452.3 | 4447.2 | 4443.9 | 4442.9 | 4417.8 | 4428.0 | 4449.8 | 4480.7 | 4506.6 |
| 11° | 4439.4 | 4445.3 | 4442.8 | 4434.8 | 4427.9 | 4427.0 | 4402.7 | 4410.5 | 4436.9 | 4469.7 | 4501.4 |
| 12° | 4430.6 | 4439.9 | 4435.5 | 4423.8 | 4412.2 | 4410.3 | 4389.2 | 4392.7 | 4422.7 | 4456.0 | 4494.8 |
| 13° | 4424.1 | 4432.4 | 4426.0 | 4411.9 | 4394.7 | 4389.5 | 4372.0 | 4373.8 | 4405.5 | 4441.4 | 4488.3 |
| 14° | 4413.2 | 4421.6 | 4417.2 | 4401.7 | 4379.5 | 4367.4 | 4353.6 | 4352.8 | 4386.2 | 4426.3 | 4477.2 |
| 15° | 4402.9 | 4412.9 | 4407.7 | 4390.4 | 4361.8 | 4345.1 | 4332.7 | 4328.7 | 4365.7 | 4408.0 | 4463.9 |
| 16° | 4389.8 | 4401.7 | 4395.3 | 4375.1 | 4346.1 | 4320.8 | 4310.3 | 4304.3 | 4341.3 | 4388.2 | 4447.1 |
| 17° | 4375.3 | 4389.1 | 4382.6 | 4361.2 | 4328.4 | 4296.2 | 4285.7 | 4276.4 | 4314.6 | 4364.0 | 4431.1 |
| 18° | 4363.8 | 4379.0 | 4371.1 | 4346.8 | 4308.7 | 4270.2 | 4257.7 | 4249.7 | 4285.5 | 4337.9 | 4416.1 |
| 19° | 4351.0 | 4367.5 | 4359.1 | 4330.3 | 4288.1 | 4247.7 | 4229.6 | 4218.3 | 4253.6 | 4311.2 | 4397.8 |
| 20° | 4336.7 | 4353.2 | 4344.4 | 4314.5 | 4266.6 | 4221.0 | 4197.4 | 4185.4 | 4218.3 | 4286.3 | 4383.0 |
| 21° | 4322.6 | 4340.6 | 4328.5 | 4298.5 | 4244.3 | 4194.1 | 4166.7 | 4151.8 | 4182.0 | 4259.7 | 4365.9 |
| 22° | 4305.2 | 4328.4 | 4314.0 | 4278.8 | 4222.2 | 4165.7 | 4133.7 | 4115.6 | 4146.6 | 4232.1 | 4346.7 |
| 23° | 4291.6 | 4313.3 | 4300.3 | 4259.0 | 4198.8 | 4135.9 | 4100.0 | 4075.4 | 4108.2 | 4202.3 | 4326.8 |
| 24° | 4277.4 | 4298.7 | 4285.1 | 4237.2 | 4174.4 | 4103.4 | 4065.2 | 4038.1 | 4069.0 | 4172.6 | 4306.2 |
| 25° | 4258.8 | 4282.2 | 4268.1 | 4216.4 | 4147.8 | 4070.6 | 4029.7 | 3995.1 | 4028.4 | 4141.3 | 4286.2 |
| 26° | 4240.7 | 4263.7 | 4249.1 | 4195.8 | 4121.2 | 4032.8 | 3990.9 | 3952.1 | 3985.9 | 4108.8 | 4263.8 |
| 27° | 4220.2 | 4241.7 | 4228.2 | 4174.5 | 4092.6 | 3998.5 | 3950.8 | 3907.6 | 3944.5 | 4077.1 | 4240.7 |
| 28° | 4195.4 | 4220.4 | 4205.2 | 4151.1 | 4063.8 | 3962.5 | 3908.8 | 3863.8 | 3902.8 | 4042.2 | 4216.0 |
| 29° | 4170.3 | 4195.5 | 4180.1 | 4126.1 | 4032.2 | 3924.8 | 3864.8 | 3816.2 | 3855.3 | 4007.1 | 4189.1 |
| 30° | 4143.6 | 4166.2 | 4154.1 | 4100.1 | 4001.5 | 3888.3 | 3820.3 | 3770.2 | 3808.8 | 3969.1 | 4163.7 |
| 31° | 4111.8 | 4133.9 | 4122.6 | 4069.1 | 3969.5 | 3849.5 | 3772.5 | 3720.9 | 3762.1 | 3932.1 | 4137.4 |
| 32° | 4078.0 | 4097.5 | 4087.9 | 4038.1 | 3935.1 | 3811.5 | 3724.8 | 3672.8 | 3714.1 | 3893.3 | 4112.4 |
| 33° | 4039.0 | 4061.4 | 4050.7 | 4001.3 | 3898.6 | 3770.8 | 3671.9 | 3621.5 | 3664.5 | 3854.1 | 4081.3 |
| 34° | 3999.8 | 4020.6 | 4011.1 | 3965.7 | 3862.3 | 3728.6 | 3622.7 | 3570.2 | 3616.0 | 3811.8 | 4052.8 |
| 35° | 3956.7 | 3978.0 | 3969.4 | 3923.6 | 3824.8 | 3684.1 | 3566.3 | 3514.8 | 3563.4 | 3768.8 | 4019.5 |
| 36° | 3912.5 | 3932.6 | 3923.7 | 3882.1 | 3783.8 | 3639.6 | 3513.8 | 3460.6 | 3509.0 | 3726.2 | 3987.2 |
| 37° | 3863.3 | 3885.7 | 3877.3 | 3833.8 | 3741.4 | 3592.4 | 3457.5 | 3401.5 | 3456.5 | 3679.4 | 3953.6 |
| 38° | 3814.6 | 3834.9 | 3828.7 | 3785.9 | 3698.1 | 3544.7 | 3403.9 | 3344.5 | 3397.5 | 3635.4 | 3923.8 |
| 39° | 3760.0 | 3778.6 | 3775.5 | 3732.8 | 3649.5 | 3494.3 | 3347.1 | 3281.9 | 3340.1 | 3586.3 | 3891.9 |
| 40° | 3704.9 | 3719.2 | 3719.6 | 3681.9 | 3598.5 | 3443.8 | 3292.7 | 3219.2 | 3276.9 | 3537.4 | 3859.6 |
| 41° | 3639.1 | 3649.2 | 3656.2 | 3627.4 | 3544.9 | 3393.3 | 3234.7 | 3154.7 | 3219.1 | 3484.8 | 3828.3 |
| 42° | 3566.1 | 3575.0 | 3586.4 | 3568.3 | 3490.1 | 3340.3 | 3175.5 | 3091.2 | 3153.4 | 3433.9 | 3799.2 |
| 43° | 3489.1 | 3489.7 | 3507.5 | 3505.9 | 3431.6 | 3285.4 | 3116.0 | 3023.0 | 3089.1 | 3382.7 | 3771.2 |
| 44° | 3403.0 | 3402.1 | 3428.1 | 3436.0 | 3372.1 | 3230.2 | 3055.2 | 2956.2 | 3022.4 | 3333.7 | 3739.4 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 45° | 3312.4 | 3305.3 | 3336.3 | 3360.9 | 3310.2 | 3171.8 | 2995.7 | 2886.5 | 2957.2 | 3288.4 | 3712.2 |
| 46° | 3212.3 | 3203.0 | 3240.3 | 3279.6 | 3245.9 | 3113.5 | 2931.8 | 2814.2 | 2888.5 | 3238.3 | 3676.2 |
| 47° | 3108.4 | 3091.9 | 3137.0 | 3193.6 | 3179.7 | 3053.2 | 2869.2 | 2742.8 | 2820.7 | 3195.2 | 3641.4 |
| 48° | 2996.1 | 2970.7 | 3027.1 | 3099.4 | 3109.4 | 2989.5 | 2803.0 | 2667.9 | 2751.4 | 3147.8 | 3604.0 |
| 49° | 2869.8 | 2812.3 | 2904.0 | 2999.1 | 3032.1 | 2923.3 | 2735.2 | 2596.9 | 2681.8 | 3108.5 | 3574.1 |
| 50° | 2708.1 | 2619.1 | 2755.3 | 2895.6 | 2949.4 | 2856.7 | 2666.3 | 2519.4 | 2612.8 | 3064.7 | 3536.2 |
| 51° | 2506.3 | 2365.1 | 2563.0 | 2781.4 | 2861.5 | 2785.7 | 2594.0 | 2444.1 | 2543.8 | 3025.3 | 3502.0 |
| 52° | 2241.9 | 2062.5 | 2314.6 | 2659.3 | 2767.8 | 2713.5 | 2521.8 | 2364.7 | 2477.9 | 2977.2 | 3472.2 |
| 53° | 1945.0 | 1737.9 | 2023.4 | 2516.0 | 2670.1 | 2634.9 | 2446.2 | 2288.2 | 2408.8 | 2927.6 | 3438.3 |
| 54° | 1639.2 | 1453.4 | 1695.9 | 2333.1 | 2567.0 | 2557.2 | 2372.8 | 2209.2 | 2345.5 | 2874.0 | 3401.8 |
| 55° | 1333.3 | 1168.9 | 1417.0 | 2097.2 | 2455.9 | 2473.4 | 2292.8 | 2127.7 | 2276.4 | 2815.9 | 3357.6 |
| 56° | 1029.2 | 887.0 | 1138.3 | 1820.7 | 2340.5 | 2387.0 | 2213.7 | 2048.0 | 2209.3 | 2752.2 | 3316.4 |
| 57° | 813.0 | 721.5 | 860.8 | 1525.7 | 2218.6 | 2293.5 | 2131.0 | 1964.1 | 2136.1 | 2682.0 | 3272.3 |
| 58° | 667.7 | 610.9 | 699.7 | 1230.6 | 2085.9 | 2194.3 | 2048.1 | 1885.9 | 2059.3 | 2618.7 | 3224.1 |
| 59° | 569.9 | 542.1 | 591.5 | 938.1 | 1927.3 | 2092.4 | 1960.9 | 1805.5 | 1976.3 | 2550.4 | 3152.4 |
| 60° | 514.6 | 509.0 | 526.8 | 736.3 | 1729.2 | 1990.6 | 1873.1 | 1732.8 | 1884.8 | 2481.4 | 3076.4 |
| 61° | 489.2 | 492.1 | 494.4 | 596.6 | 1464.9 | 1883.2 | 1781.0 | 1657.5 | 1793.3 | 2405.1 | 3005.6 |
| 62° | 472.3 | 477.0 | 476.9 | 507.9 | 1200.7 | 1774.7 | 1687.5 | 1585.2 | 1692.8 | 2325.7 | 2957.9 |
| 63° | 457.2 | 463.4 | 461.2 | 460.8 | 937.6 | 1664.6 | 1595.1 | 1511.8 | 1597.2 | 2240.6 | 2918.7 |
| 64° | 442.2 | 448.6 | 446.5 | 436.3 | 712.3 | 1553.1 | 1499.1 | 1439.2 | 1494.3 | 2150.0 | 2881.7 |
| 65° | 426.4 | 432.2 | 431.1 | 418.9 | 552.0 | 1438.8 | 1406.0 | 1361.4 | 1398.7 | 2047.4 | 2862.2 |
| 66° | 409.6 | 417.0 | 413.5 | 402.2 | 455.9 | 1302.8 | 1313.9 | 1278.3 | 1298.9 | 1920.1 | 2883.1 |
| 67° | 394.4 | 403.3 | 397.7 | 384.6 | 402.9 | 1166.9 | 1221.8 | 1191.6 | 1209.7 | 1793.0 | 2983.3 |
| 68° | 379.1 | 389.4 | 382.8 | 366.3 | 375.8 | 1030.9 | 1129.7 | 1097.7 | 1121.5 | 1673.5 | 3159.1 |
| 69° | 364.0 | 375.1 | 367.0 | 347.2 | 356.6 | 824.3 | 1041.7 | 1006.1 | 1035.3 | 1576.3 | 3240.0 |
| 70° | 349.0 | 363.3 | 352.6 | 328.7 | 337.6 | 610.5 | 958.7 | 912.4 | 953.2 | 1475.4 | 3088.7 |
| 71° | 337.1 | 351.1 | 340.0 | 310.8 | 318.2 | 449.6 | 878.5 | 818.7 | 874.0 | 1388.0 | 2679.1 |
| 72° | 322.8 | 333.8 | 326.9 | 294.2 | 299.6 | 358.1 | 798.5 | 726.1 | 799.8 | 1334.0 | 2208.5 |
| 73° | 303.2 | 313.5 | 308.2 | 279.0 | 279.7 | 311.4 | 717.0 | 639.4 | 728.6 | 1391.0 | 1845.1 |
| 74° | 282.1 | 291.2 | 288.3 | 265.8 | 260.9 | 285.6 | 637.4 | 563.4 | 663.1 | 1747.1 | 1644.1 |
| 75° | 259.7 | 268.2 | 265.6 | 247.3 | 241.4 | 262.9 | 553.0 | 487.9 | 590.4 | 1811.2 | 1531.6 |
| 76° | 237.4 | 245.2 | 242.8 | 227.5 | 224.9 | 241.1 | 470.6 | 412.3 | 523.6 | 1234.6 | 1447.7 |
| 77° | 213.6 | 222.0 | 217.8 | 205.8 | 207.5 | 220.2 | 388.9 | 350.4 | 457.0 | 769.3 | 1347.3 |
| 78° | 192.9 | 205.0 | 195.1 | 184.8 | 191.2 | 200.9 | 313.2 | 292.7 | 390.4 | 648.5 | 1229.4 |
| 79° | 178.2 | 190.7 | 179.2 | 163.8 | 170.9 | 181.6 | 249.8 | 243.2 | 352.8 | 596.8 | 1001.7 |
| 80° | 165.9 | 177.5 | 165.6 | 142.9 | 150.3 | 163.0 | 207.0 | 199.4 | 309.5 | 750.5 | 836.4 |
| 81° | 147.5 | 156.4 | 148.5 | 122.1 | 129.8 | 145.8 | 178.7 | 160.9 | 272.5 | 559.0 | 740.3 |
| 82° | 129.1 | 135.4 | 131.3 | 110.6 | 109.2 | 128.5 | 154.4 | 128.5 | 245.9 | 412.9 | 670.7 |
| 83° | 110.7 | 114.4 | 114.0 | 99.1 | 84.3 | 111.2 | 130.1 | 99.1 | 220.9 | 267.9 | 606.1 |
| 84° | 88.9 | 91.5 | 92.0 | 83.9 | 69.0 | 91.3 | 105.9 | 75.4 | 196.4 | 222.1 | 467.4 |
| 85° | 64.7 | 66.9 | 69.6 | 68.6 | 58.1 | 72.1 | 84.0 | 58.4 | 136.5 | 191.8 | 326.9 |
| 86° | 47.9 | 50.4 | 50.9 | 49.7 | 45.7 | 53.3 | 62.9 | 41.6 | 75.2 | 160.2 | 186.4 |
| 87° | 34.0 | 35.7 | 36.2 | 33.7 | 31.7 | 38.0 | 44.9 | 24.7 | 52.3 | 111.1 | 78.2 |
| 88° | 20.1 | 21.1 | 21.5 | 23.4 | 22.0 | 25.9 | 30.3 | 13.2 | 29.6 | 62.6 | 39.2 |
| 89° | 6.4 | 6.6 | 7.0 | 13.0 | 12.2 | 13.8 | 15.7 | 4.8 | 6.9 | 47.1 | 1.0 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 91° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 93° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 94° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 96° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 97° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 98° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 99° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 101° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 103° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 104° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 106° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 107° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 108° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 109° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 111° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 112° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 113° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 114° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 116° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 118° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 119° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 121° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 123° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 124° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 126° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 128° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 129° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 131° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 133° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 134° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 135° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 136° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 138° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 139° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 141° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 143° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 144° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 146° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 148° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 149° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 151° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 153° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 154° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 156° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 158° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 159° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 161° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 163° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 164° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 166° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 168° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 169° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 171° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 173° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 174° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 176° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 178° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 179° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|
| | 165° | 180° | 195° | 210° | 225° | 240° | 255° | 270° | 285° | 300° | 315° |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 330° | 345° | 360° |
|-----|--------|--------|--------|
| 0° | 4500.9 | 4500.9 | 4500.9 |
| 1° | 4507.8 | 4508.8 | 4509.2 |
| 2° | 4513.7 | 4514.9 | 4515.3 |
| 3° | 4518.9 | 4519.8 | 4520.5 |
| 4° | 4521.6 | 4525.2 | 4525.3 |
| 5° | 4523.4 | 4529.1 | 4529.5 |
| 6° | 4526.9 | 4534.5 | 4535.6 |
| 7° | 4530.1 | 4537.4 | 4540.5 |
| 8° | 4532.0 | 4542.4 | 4547.2 |
| 9° | 4533.3 | 4546.5 | 4553.2 |
| 10° | 4533.5 | 4551.5 | 4558.6 |
| 11° | 4533.9 | 4554.1 | 4560.5 |
| 12° | 4531.4 | 4553.7 | 4560.0 |
| 13° | 4527.2 | 4552.8 | 4559.6 |
| 14° | 4521.8 | 4552.8 | 4559.1 |
| 15° | 4514.3 | 4550.1 | 4558.7 |
| 16° | 4504.8 | 4544.8 | 4558.2 |
| 17° | 4498.4 | 4542.6 | 4556.8 |
| 18° | 4487.8 | 4537.9 | 4553.7 |
| 19° | 4480.5 | 4534.2 | 4550.3 |
| 20° | 4471.6 | 4529.0 | 4546.7 |
| 21° | 4461.8 | 4522.3 | 4540.3 |
| 22° | 4448.5 | 4515.0 | 4533.3 |
| 23° | 4435.9 | 4505.7 | 4526.1 |
| 24° | 4422.4 | 4497.8 | 4520.6 |
| 25° | 4407.5 | 4489.9 | 4513.5 |
| 26° | 4394.5 | 4480.3 | 4506.8 |
| 27° | 4377.8 | 4469.6 | 4500.5 |
| 28° | 4364.0 | 4462.2 | 4489.9 |
| 29° | 4346.3 | 4448.5 | 4478.8 |
| 30° | 4329.7 | 4436.6 | 4470.1 |
| 31° | 4310.6 | 4425.2 | 4465.0 |
| 32° | 4290.0 | 4417.5 | 4460.4 |
| 33° | 4271.4 | 4410.0 | 4457.3 |
| 34° | 4253.8 | 4405.5 | 4455.9 |
| 35° | 4235.4 | 4397.6 | 4453.5 |
| 36° | 4218.7 | 4394.9 | 4455.8 |
| 37° | 4203.9 | 4393.2 | 4459.6 |
| 38° | 4188.6 | 4391.9 | 4461.3 |
| 39° | 4178.6 | 4391.2 | 4463.7 |
| 40° | 4164.5 | 4386.2 | 4462.7 |
| 41° | 4151.3 | 4380.2 | 4464.1 |
| 42° | 4133.4 | 4377.4 | 4467.9 |
| 43° | 4116.6 | 4376.1 | 4472.5 |
| 44° | 4099.2 | 4375.8 | 4485.1 |



REPORT NUMBER: P1449885
 CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 330° | 345° | 360° |
|-----|--------|--------|--------|
| 45° | 4083.7 | 4385.0 | 4501.7 |
| 46° | 4065.3 | 4394.1 | 4514.2 |
| 47° | 4057.2 | 4401.2 | 4530.2 |
| 48° | 4053.6 | 4408.9 | 4540.1 |
| 49° | 4043.1 | 4414.7 | 4551.0 |
| 50° | 4031.2 | 4421.4 | 4554.7 |
| 51° | 4015.6 | 4422.1 | 4543.1 |
| 52° | 4001.3 | 4406.2 | 4514.1 |
| 53° | 3985.9 | 4370.1 | 4486.4 |
| 54° | 3963.1 | 4344.5 | 4484.6 |
| 55° | 3922.6 | 4342.5 | 4499.6 |
| 56° | 3878.3 | 4354.9 | 4510.9 |
| 57° | 3854.3 | 4360.2 | 4535.9 |
| 58° | 3850.6 | 4380.6 | 4603.8 |
| 59° | 3844.6 | 4447.0 | 4710.9 |
| 60° | 3840.4 | 4549.0 | 4830.2 |
| 61° | 3860.9 | 4667.4 | 4909.7 |
| 62° | 3931.2 | 4733.8 | 4898.7 |
| 63° | 4043.2 | 4703.6 | 4806.2 |
| 64° | 4153.3 | 4586.2 | 4619.4 |
| 65° | 4160.0 | 4375.2 | 4369.1 |
| 66° | 4054.9 | 4095.5 | 4105.1 |
| 67° | 3823.3 | 3816.1 | 3777.6 |
| 68° | 3501.5 | 3441.9 | 3409.9 |
| 69° | 3144.4 | 3111.6 | 3149.8 |
| 70° | 2785.2 | 2912.2 | 3018.3 |
| 71° | 2494.8 | 2806.0 | 2903.9 |
| 72° | 2336.7 | 2705.1 | 2792.1 |
| 73° | 2222.1 | 2587.0 | 2670.9 |
| 74° | 2109.4 | 2479.1 | 2546.3 |
| 75° | 1979.6 | 2351.2 | 2390.7 |
| 76° | 1849.5 | 2217.2 | 2223.5 |
| 77° | 1707.3 | 2071.3 | 2033.1 |
| 78° | 1572.3 | 1921.9 | 1815.0 |
| 79° | 1462.2 | 1735.5 | 1594.6 |
| 80° | 1354.9 | 1537.1 | 1362.5 |
| 81° | 1230.5 | 1316.8 | 1141.4 |
| 82° | 1081.8 | 1103.3 | 946.8 |
| 83° | 885.7 | 950.7 | 789.5 |
| 84° | 705.7 | 747.6 | 562.7 |
| 85° | 554.2 | 556.4 | 404.6 |
| 86° | 404.5 | 365.5 | 247.2 |
| 87° | 254.9 | 174.7 | 103.5 |
| 88° | 20.5 | 87.2 | 51.6 |
| 89° | 10.6 | 1.3 | 1.6 |



REPORT NUMBER: P1449885
CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 330° | 345° | 360° |
|------|------|------|------|
| 90° | 0.0 | 0.0 | 0.0 |
| 91° | 0.0 | 0.0 | 0.0 |
| 92° | 0.0 | 0.0 | 0.0 |
| 93° | 0.0 | 0.0 | 0.0 |
| 94° | 0.0 | 0.0 | 0.0 |
| 95° | 0.0 | 0.0 | 0.0 |
| 96° | 0.0 | 0.0 | 0.0 |
| 97° | 0.0 | 0.0 | 0.0 |
| 98° | 0.0 | 0.0 | 0.0 |
| 99° | 0.0 | 0.0 | 0.0 |
| 100° | 0.0 | 0.0 | 0.0 |
| 101° | 0.0 | 0.0 | 0.0 |
| 102° | 0.0 | 0.0 | 0.0 |
| 103° | 0.0 | 0.0 | 0.0 |
| 104° | 0.0 | 0.0 | 0.0 |
| 105° | 0.0 | 0.0 | 0.0 |
| 106° | 0.0 | 0.0 | 0.0 |
| 107° | 0.0 | 0.0 | 0.0 |
| 108° | 0.0 | 0.0 | 0.0 |
| 109° | 0.0 | 0.0 | 0.0 |
| 110° | 0.0 | 0.0 | 0.0 |
| 111° | 0.0 | 0.0 | 0.0 |
| 112° | 0.0 | 0.0 | 0.0 |
| 113° | 0.0 | 0.0 | 0.0 |
| 114° | 0.0 | 0.0 | 0.0 |
| 115° | 0.0 | 0.0 | 0.0 |
| 116° | 0.0 | 0.0 | 0.0 |
| 117° | 0.0 | 0.0 | 0.0 |
| 118° | 0.0 | 0.0 | 0.0 |
| 119° | 0.0 | 0.0 | 0.0 |
| 120° | 0.0 | 0.0 | 0.0 |
| 121° | 0.0 | 0.0 | 0.0 |
| 122° | 0.0 | 0.0 | 0.0 |
| 123° | 0.0 | 0.0 | 0.0 |
| 124° | 0.0 | 0.0 | 0.0 |
| 125° | 0.0 | 0.0 | 0.0 |
| 126° | 0.0 | 0.0 | 0.0 |
| 127° | 0.0 | 0.0 | 0.0 |
| 128° | 0.0 | 0.0 | 0.0 |
| 129° | 0.0 | 0.0 | 0.0 |
| 130° | 0.0 | 0.0 | 0.0 |
| 131° | 0.0 | 0.0 | 0.0 |
| 132° | 0.0 | 0.0 | 0.0 |
| 133° | 0.0 | 0.0 | 0.0 |
| 134° | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | 330° | 345° | 360° |
|------|------|------|------|
| 135° | 0.0 | 0.0 | 0.0 |
| 136° | 0.0 | 0.0 | 0.0 |
| 137° | 0.0 | 0.0 | 0.0 |
| 138° | 0.0 | 0.0 | 0.0 |
| 139° | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 |
| 141° | 0.0 | 0.0 | 0.0 |
| 142° | 0.0 | 0.0 | 0.0 |
| 143° | 0.0 | 0.0 | 0.0 |
| 144° | 0.0 | 0.0 | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 |
| 146° | 0.0 | 0.0 | 0.0 |
| 147° | 0.0 | 0.0 | 0.0 |
| 148° | 0.0 | 0.0 | 0.0 |
| 149° | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 0.0 | 0.0 |
| 151° | 0.0 | 0.0 | 0.0 |
| 152° | 0.0 | 0.0 | 0.0 |
| 153° | 0.0 | 0.0 | 0.0 |
| 154° | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 |
| 156° | 0.0 | 0.0 | 0.0 |
| 157° | 0.0 | 0.0 | 0.0 |
| 158° | 0.0 | 0.0 | 0.0 |
| 159° | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 |
| 161° | 0.0 | 0.0 | 0.0 |
| 162° | 0.0 | 0.0 | 0.0 |
| 163° | 0.0 | 0.0 | 0.0 |
| 164° | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 |
| 166° | 0.0 | 0.0 | 0.0 |
| 167° | 0.0 | 0.0 | 0.0 |
| 168° | 0.0 | 0.0 | 0.0 |
| 169° | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 |
| 171° | 0.0 | 0.0 | 0.0 |
| 172° | 0.0 | 0.0 | 0.0 |
| 173° | 0.0 | 0.0 | 0.0 |
| 174° | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 |
| 176° | 0.0 | 0.0 | 0.0 |
| 177° | 0.0 | 0.0 | 0.0 |
| 178° | 0.0 | 0.0 | 0.0 |
| 179° | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P1449885
CATALOG NUMBER: TWC150_T4_90W_4000K

CANDELA DISTRIBUTION (continued):

| | | | |
|------|------|------|------|
| | 330° | 345° | 360° |
| 180° | 0.0 | 0.0 | 0.0 |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Lumark

Report Number: SP1-2601-659-2

Test Date: 02/12/2026

Luminaire Tested: MWP2460W34VDDKYYAD-T4-24W-4000K

Data in this report applies to families of products including ;MWP2460W34VDDKYYAD

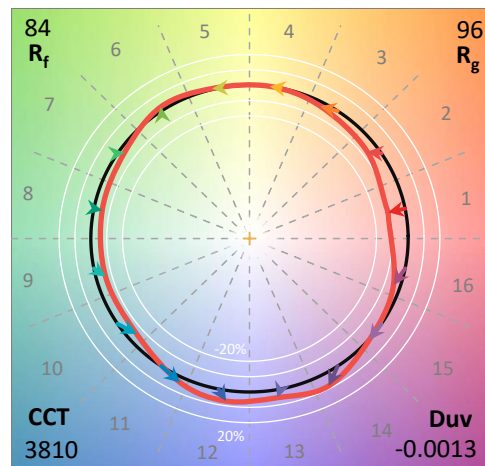
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2601-659-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 02/16/2026
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Lumark
 Catalog Number: **MWP2460W34VDDKYYAD-T4-24W-4000K**
 Description: Mester Wedge, at T4 beam setting, 24W output, 4000K

Spectral Parameters

CCT (K): 3810
 CIE u': 0.2295
 CIE v': 0.5035
 Duv: -0.0013
 CIE x: 0.3881
 CIE y: 0.3785
 CIE z: 0.2334
 Peak Wavelength (nm): 453
 Dominant Wavelength (nm): 580
 Purity: 30.07368
 Rf: 84.4
 Rg: 96.5

| | | | |
|-----------|------|------|------|
| CRI (Ra): | 84.5 | | |
| R1: | 83.7 | R9: | 15.9 |
| R2: | 90.7 | R10: | 77.2 |
| R3: | 95.1 | R11: | 83.0 |
| R4: | 83.6 | R12: | 62.4 |
| R5: | 83.4 | R13: | 85.6 |
| R6: | 86.7 | R14: | 97.4 |
| R7: | 86.3 | R15: | 77.9 |
| R8: | 66.5 | | |



Test Conditions

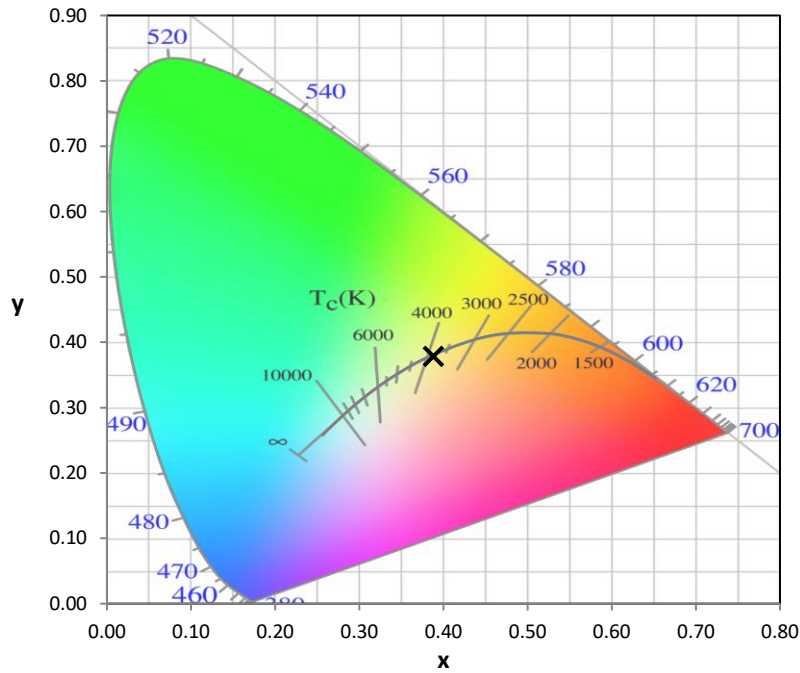
Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.8

REPORT NUMBER: SP1-2601-659-2

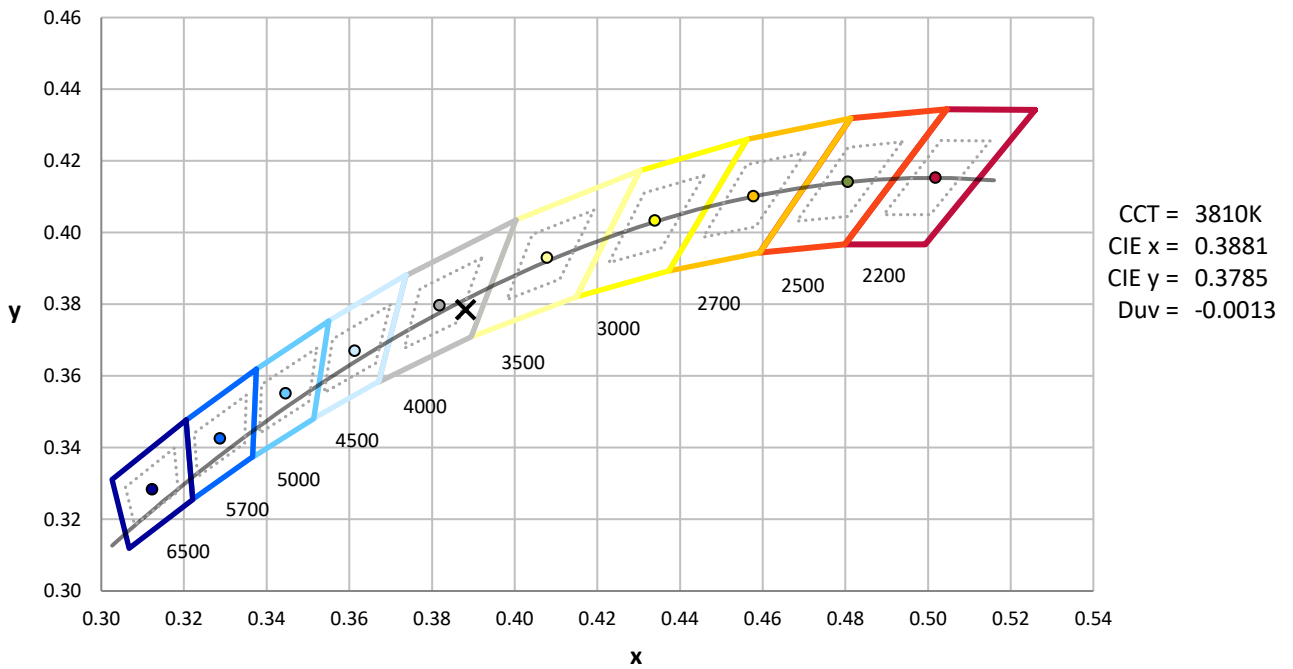
| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 12/16/2025 | 6/16/2026 |
| Power Meter | XITRON INXT2011004 | 10/21/2025 | 10/21/2026 |
| AC Power Source | CHROMA 61603 IN0063 | 10/21/2025 | 10/21/2026 |
| DC Power Source | AGILENT E3634A IN0208 | 10/21/2025 | 10/21/2026 |
| Sphere Thermometer | ONSET IN0085 | 10/21/2025 | 10/21/2026 |
| Room Thermometer | ONSET IN0046 | 10/21/2025 | 10/21/2026 |

REPORT NUMBER: SP1-2601-659-2

CIE 1931 Chromaticity Diagram



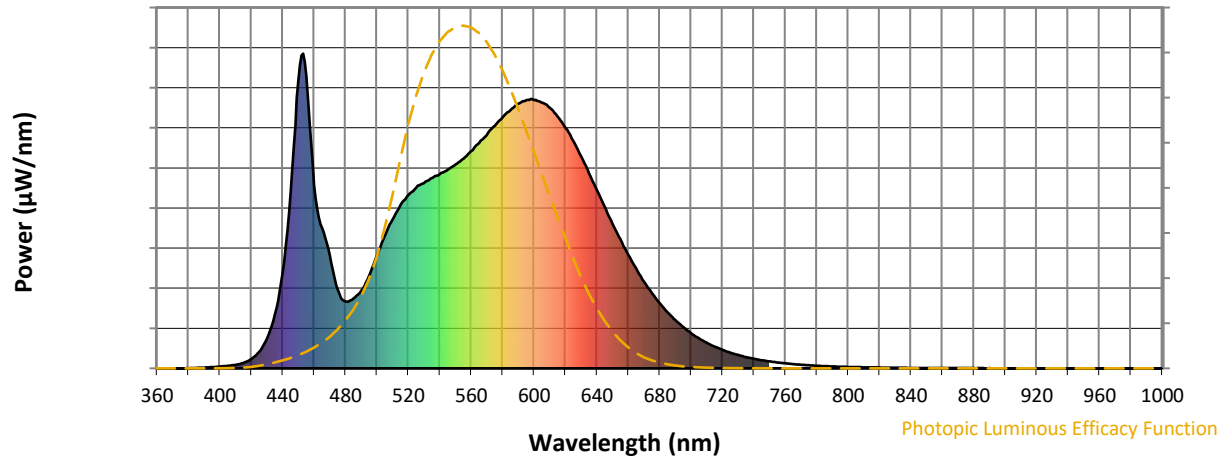
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2601-659-2

Photopic Flux vs. Wavelength

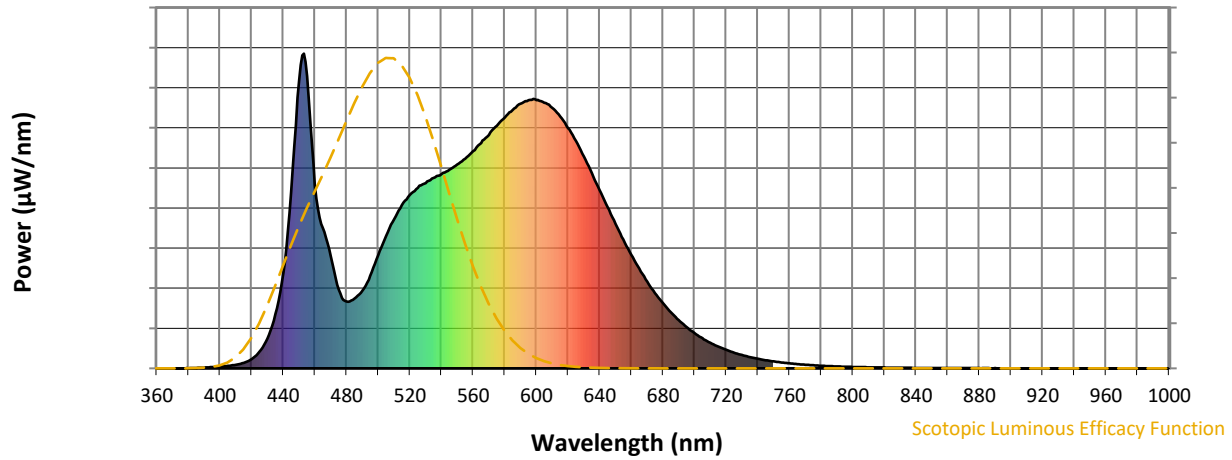


Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360 | 0 | NR | 490 | 247 | NR | 620 | 764 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 294 | NR | 625 | 723 | NR | 755 | 19 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 359 | NR | 630 | 674 | NR | 760 | 16 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 421 | NR | 635 | 620 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 474 | NR | 640 | 566 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 518 | NR | 645 | 512 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 552 | NR | 650 | 459 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 574 | NR | 655 | 410 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 589 | NR | 660 | 361 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 605 | NR | 665 | 317 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 11 | NR | 540 | 617 | NR | 670 | 276 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 632 | NR | 675 | 239 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 30 | NR | 550 | 648 | NR | 680 | 207 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 53 | NR | 555 | 666 | NR | 685 | 178 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 95 | NR | 560 | 690 | NR | 690 | 153 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 173 | NR | 565 | 716 | NR | 695 | 131 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 304 | NR | 570 | 742 | NR | 700 | 112 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 559 | NR | 575 | 771 | NR | 705 | 95 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 915 | NR | 580 | 798 | NR | 710 | 81 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 929 | NR | 585 | 820 | NR | 715 | 69 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 582 | NR | 590 | 841 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 446 | NR | 595 | 852 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 356 | NR | 600 | 852 | NR | 730 | 42 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 250 | NR | 605 | 845 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 212 | NR | 610 | 827 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 221 | NR | 615 | 801 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2601-659-2

Scotopic Flux vs. Wavelength



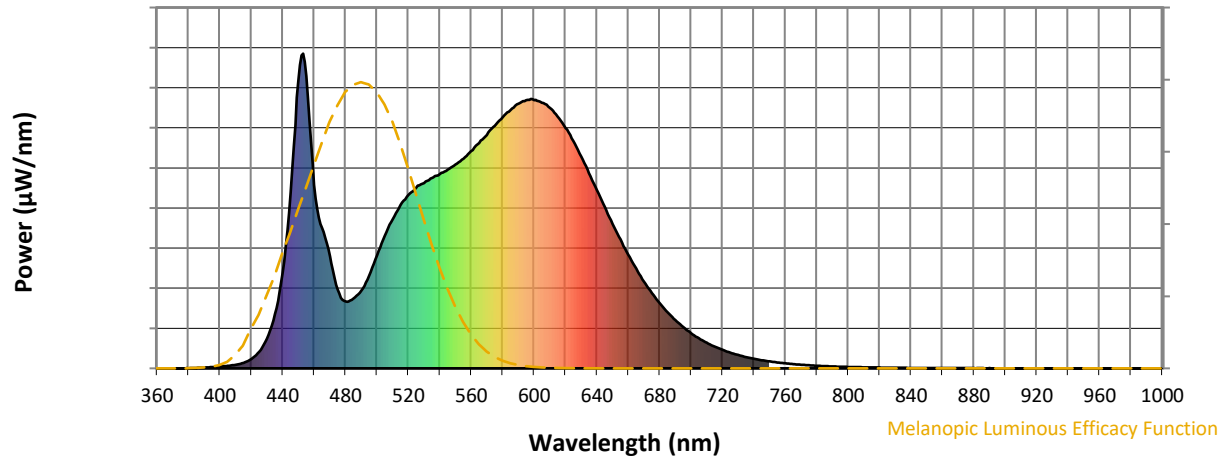
Scotopic Lumens: NR

S/P: 1.64

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|----------------|--------------------------|----------------------|
| 360 | 0 | NR | 490 | 247 | NR | 620 | 764 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 294 | NR | 625 | 723 | NR | 755 | 19 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 359 | NR | 630 | 674 | NR | 760 | 16 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 421 | NR | 635 | 620 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 474 | NR | 640 | 566 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 518 | NR | 645 | 512 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 552 | NR | 650 | 459 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 574 | NR | 655 | 410 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 589 | NR | 660 | 361 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 605 | NR | 665 | 317 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 11 | NR | 540 | 617 | NR | 670 | 276 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 632 | NR | 675 | 239 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 30 | NR | 550 | 648 | NR | 680 | 207 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 53 | NR | 555 | 666 | NR | 685 | 178 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 95 | NR | 560 | 690 | NR | 690 | 153 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 173 | NR | 565 | 716 | NR | 695 | 131 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 304 | NR | 570 | 742 | NR | 700 | 112 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 559 | NR | 575 | 771 | NR | 705 | 95 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 915 | NR | 580 | 798 | NR | 710 | 81 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 929 | NR | 585 | 820 | NR | 715 | 69 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 582 | NR | 590 | 841 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 446 | NR | 595 | 852 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 356 | NR | 600 | 852 | NR | 730 | 42 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 250 | NR | 605 | 845 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 212 | NR | 610 | 827 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 221 | NR | 615 | 801 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2601-659-2

Melanopic Flux vs. Wavelength



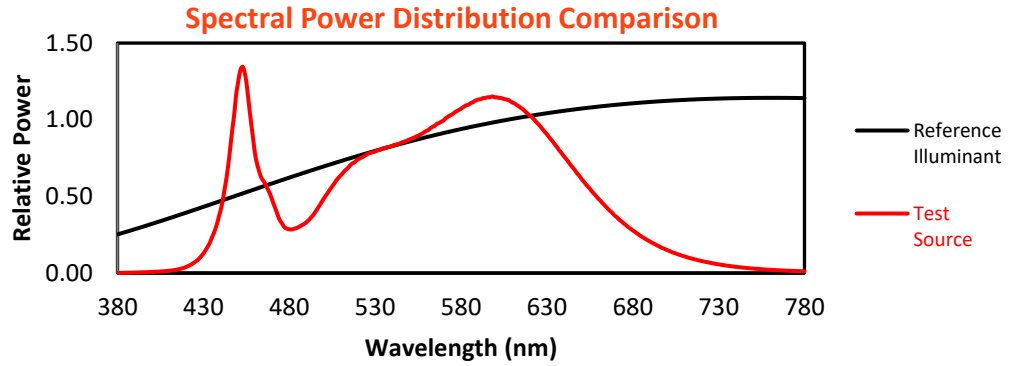
Melanopic Lumens: NR

M/P: 3.35

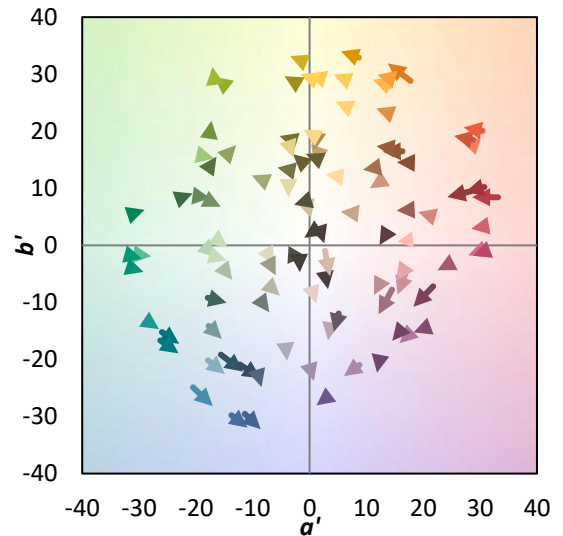
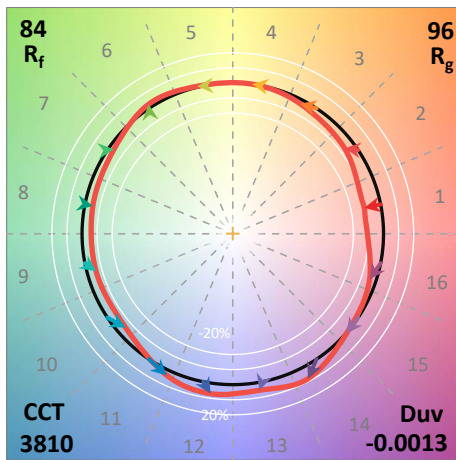
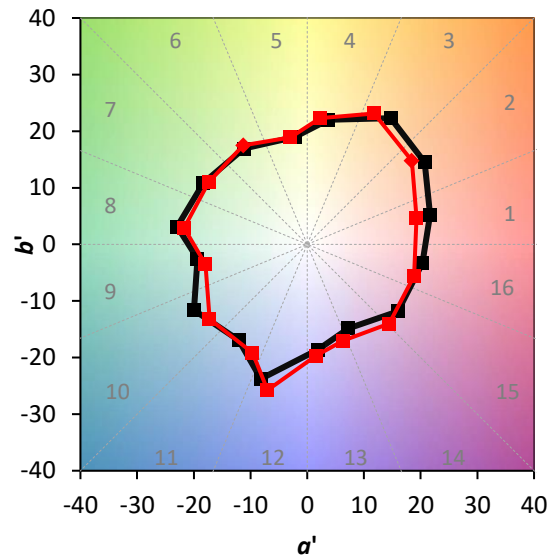
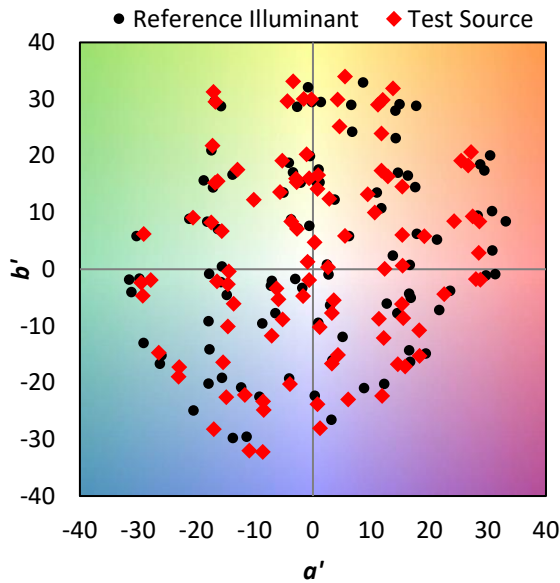
| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 247 | NR | 620 | 764 | NR | 750 | 22 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 294 | NR | 625 | 723 | NR | 755 | 19 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 359 | NR | 630 | 674 | NR | 760 | 16 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 421 | NR | 635 | 620 | NR | 765 | 14 | NR | 895 | 0 | NR |
| 380 | 1 | NR | 510 | 474 | NR | 640 | 566 | NR | 770 | 12 | NR | 900 | 0 | NR |
| 385 | 1 | NR | 515 | 518 | NR | 645 | 512 | NR | 775 | 10 | NR | 905 | 0 | NR |
| 390 | 3 | NR | 520 | 552 | NR | 650 | 459 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 4 | NR | 525 | 574 | NR | 655 | 410 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 6 | NR | 530 | 589 | NR | 660 | 361 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 8 | NR | 535 | 605 | NR | 665 | 317 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 11 | NR | 540 | 617 | NR | 670 | 276 | NR | 800 | 5 | NR | 930 | 0 | NR |
| 415 | 18 | NR | 545 | 632 | NR | 675 | 239 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 30 | NR | 550 | 648 | NR | 680 | 207 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 53 | NR | 555 | 666 | NR | 685 | 178 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 95 | NR | 560 | 690 | NR | 690 | 153 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 173 | NR | 565 | 716 | NR | 695 | 131 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 304 | NR | 570 | 742 | NR | 700 | 112 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 559 | NR | 575 | 771 | NR | 705 | 95 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 915 | NR | 580 | 798 | NR | 710 | 81 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 929 | NR | 585 | 820 | NR | 715 | 69 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 582 | NR | 590 | 841 | NR | 720 | 59 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 446 | NR | 595 | 852 | NR | 725 | 50 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 356 | NR | 600 | 852 | NR | 730 | 42 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 250 | NR | 605 | 845 | NR | 735 | 36 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 212 | NR | 610 | 827 | NR | 740 | 30 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 221 | NR | 615 | 801 | NR | 745 | 26 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 84.4$
 $R_g = 96.5$
 CIE $R_a = 84.5$
 $R_9 = 15.9$

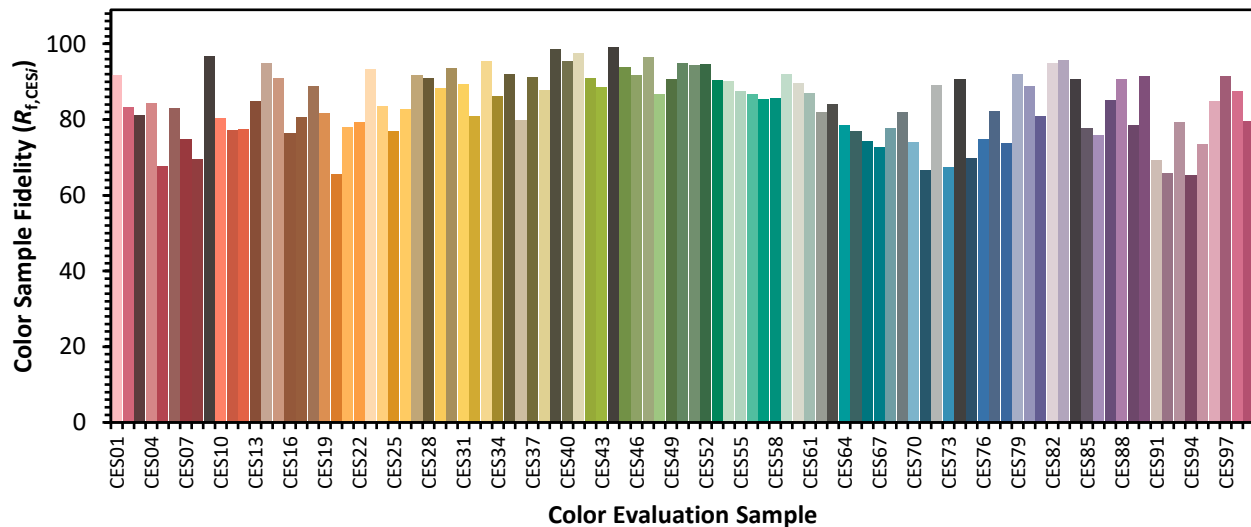


Color Vector Graphics

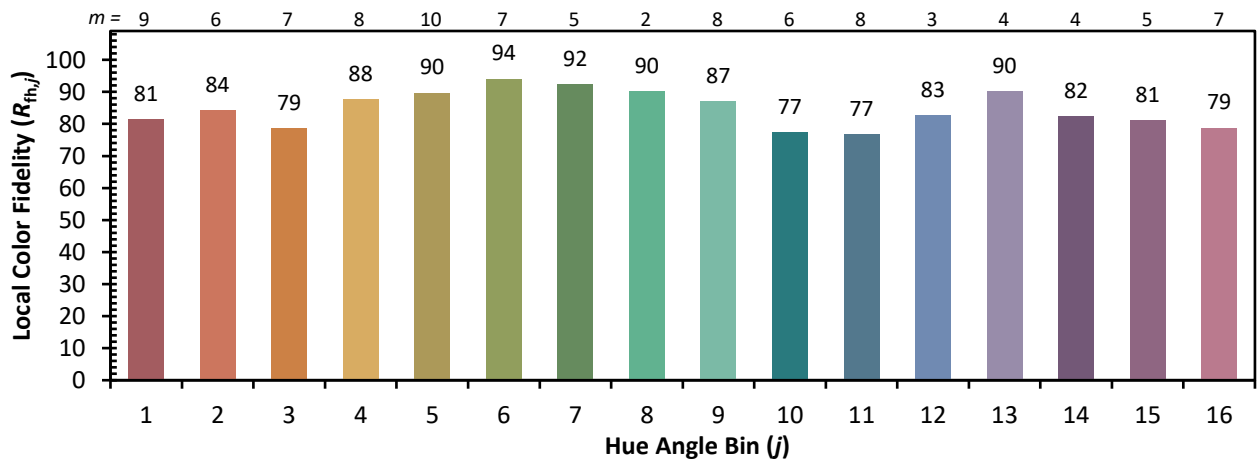
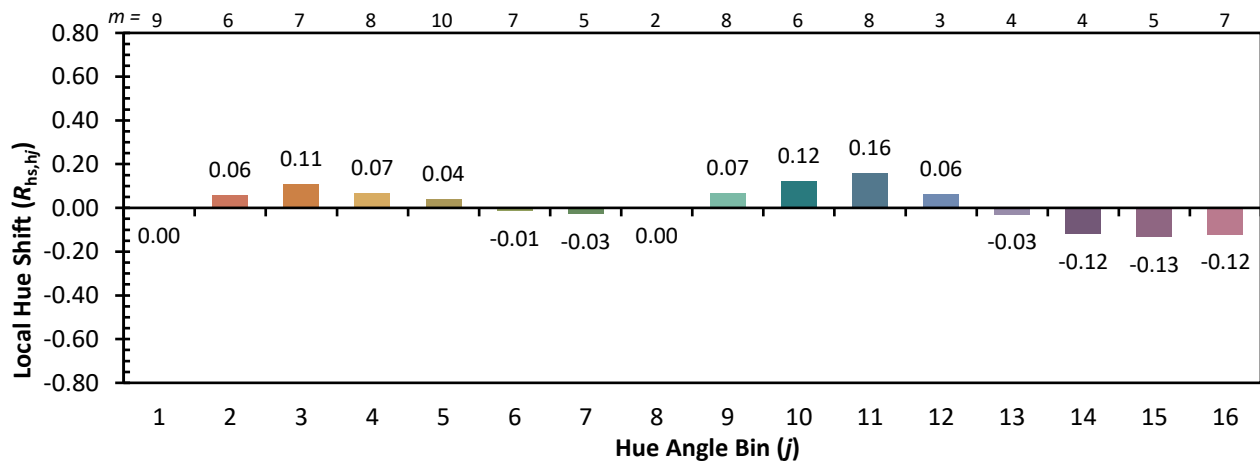
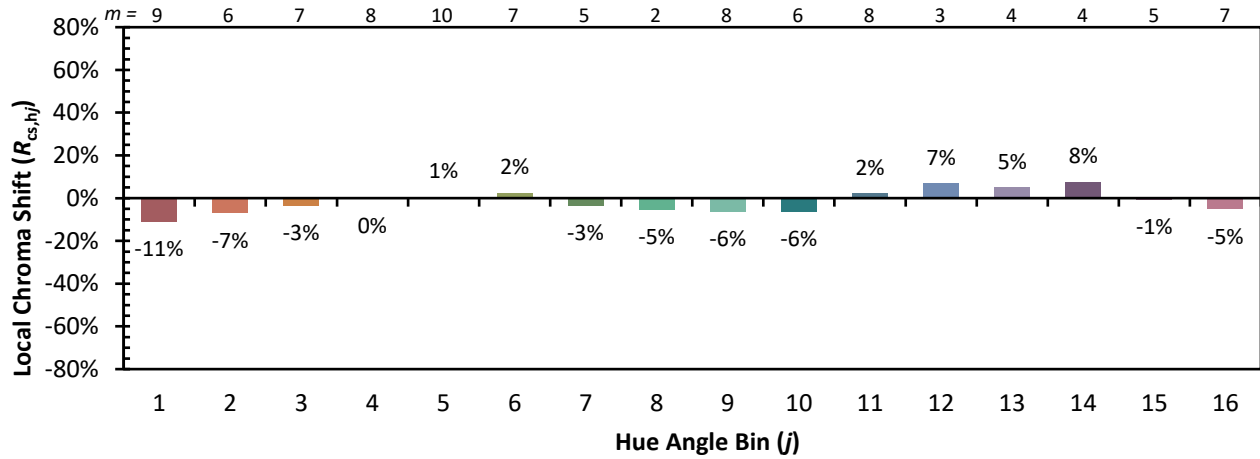


Individual Sample Fidelity Index ($R_{f,i}$)

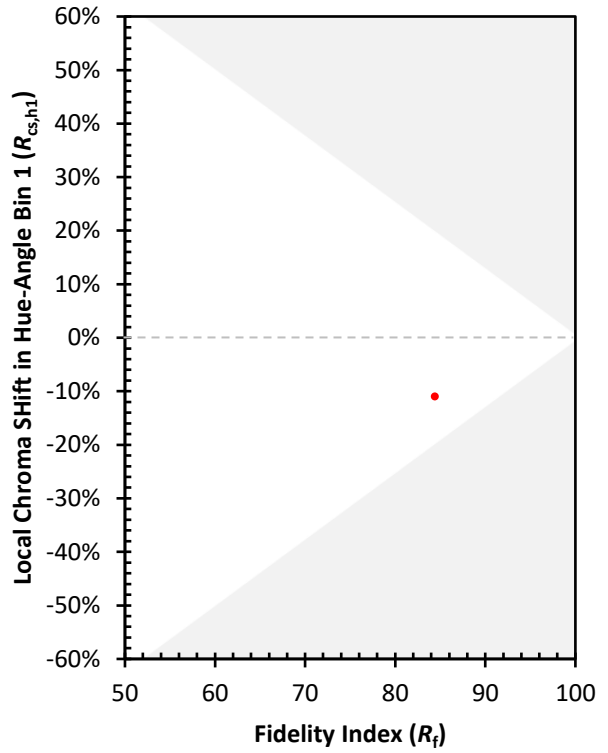
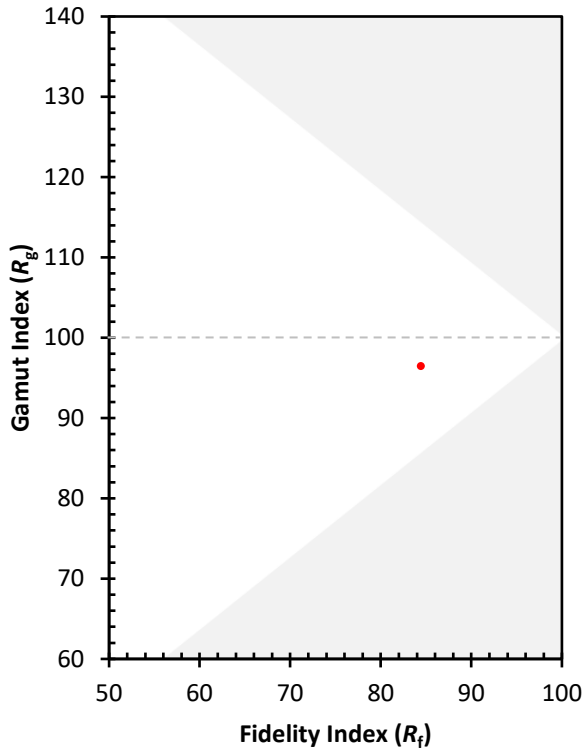
| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 83 | CES51 = 94 | CES76 = 75 |
| CES02 = 62 | CES27 = 92 | CES52 = 95 | CES77 = 82 |
| CES03 = 31 | CES28 = 91 | CES53 = 90 | CES78 = 74 |
| CES04 = 70 | CES29 = 88 | CES54 = 90 | CES79 = 92 |
| CES05 = 48 | CES30 = 94 | CES55 = 88 | CES80 = 89 |
| CES06 = 51 | CES31 = 89 | CES56 = 87 | CES81 = 81 |
| CES07 = 41 | CES32 = 81 | CES57 = 86 | CES82 = 95 |
| CES08 = 40 | CES33 = 95 | CES58 = 86 | CES83 = 96 |
| CES09 = 29 | CES34 = 86 | CES59 = 92 | CES84 = 91 |
| CES10 = 75 | CES35 = 92 | CES60 = 90 | CES85 = 78 |
| CES11 = 57 | CES36 = 80 | CES61 = 87 | CES86 = 76 |
| CES12 = 63 | CES37 = 91 | CES62 = 82 | CES87 = 85 |
| CES13 = 43 | CES38 = 88 | CES63 = 84 | CES88 = 91 |
| CES14 = 74 | CES39 = 98 | CES64 = 79 | CES89 = 78 |
| CES15 = 71 | CES40 = 96 | CES65 = 77 | CES90 = 92 |
| CES16 = 47 | CES41 = 98 | CES66 = 74 | CES91 = 69 |
| CES17 = 49 | CES42 = 91 | CES67 = 73 | CES92 = 66 |
| CES18 = 56 | CES43 = 89 | CES68 = 78 | CES93 = 79 |
| CES19 = 71 | CES44 = 99 | CES69 = 82 | CES94 = 65 |
| CES20 = 65 | CES45 = 94 | CES70 = 74 | CES95 = 74 |
| CES21 = 86 | CES46 = 92 | CES71 = 67 | CES96 = 85 |
| CES22 = 78 | CES47 = 97 | CES72 = 89 | CES97 = 91 |
| CES23 = 91 | CES48 = 87 | CES73 = 68 | CES98 = 87 |
| CES24 = 90 | CES49 = 91 | CES74 = 91 | CES99 = 80 |
| CES25 = 71 | CES50 = 95 | CES75 = 70 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)