

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: STREETWORKS

Report Number: P159808

Luminaire Tested: **VST-E09-LED-E-U-T4-8030**

Issue Date: 3/3/2020

### Test Information

Test Method: LM-79-08  
Report Number: P159808  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33707)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: VST-E09-LED-E-U-T4-8030  
Description: VENTUS LED SITE/ROADWAY LUMINAIRE  
(9) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (189) 3000K CCT, 80 CRI LEDs  
Ballast/Driver: -

### Summary

Lumens per Lamp: N/A  
Luminaire Lumens: 22608.2 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Luminous Opening: Rectangular (W 1.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G4

Input Watts (W): 225.7  
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: 28.75 FT

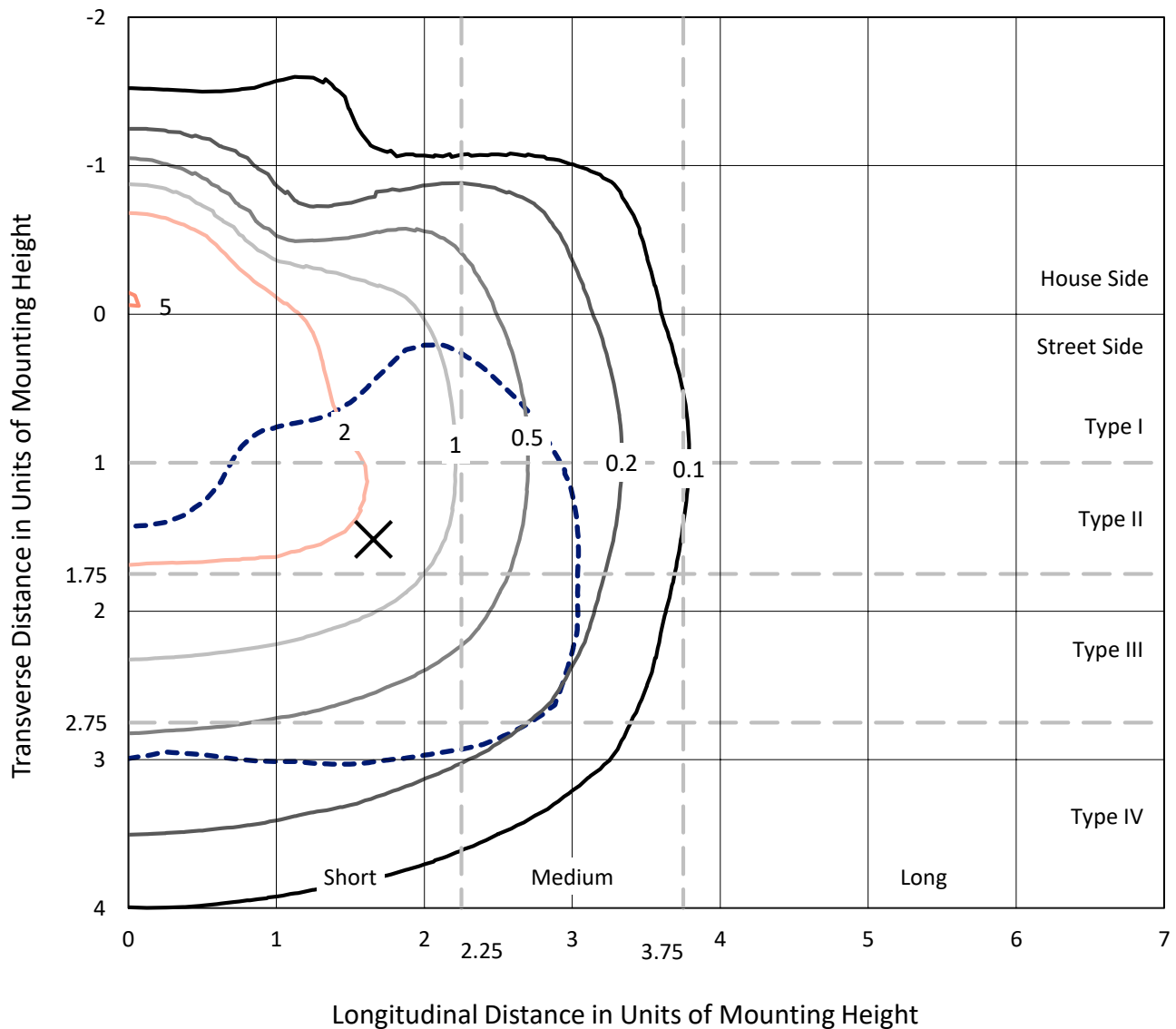


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 --- 1/2 Max cd

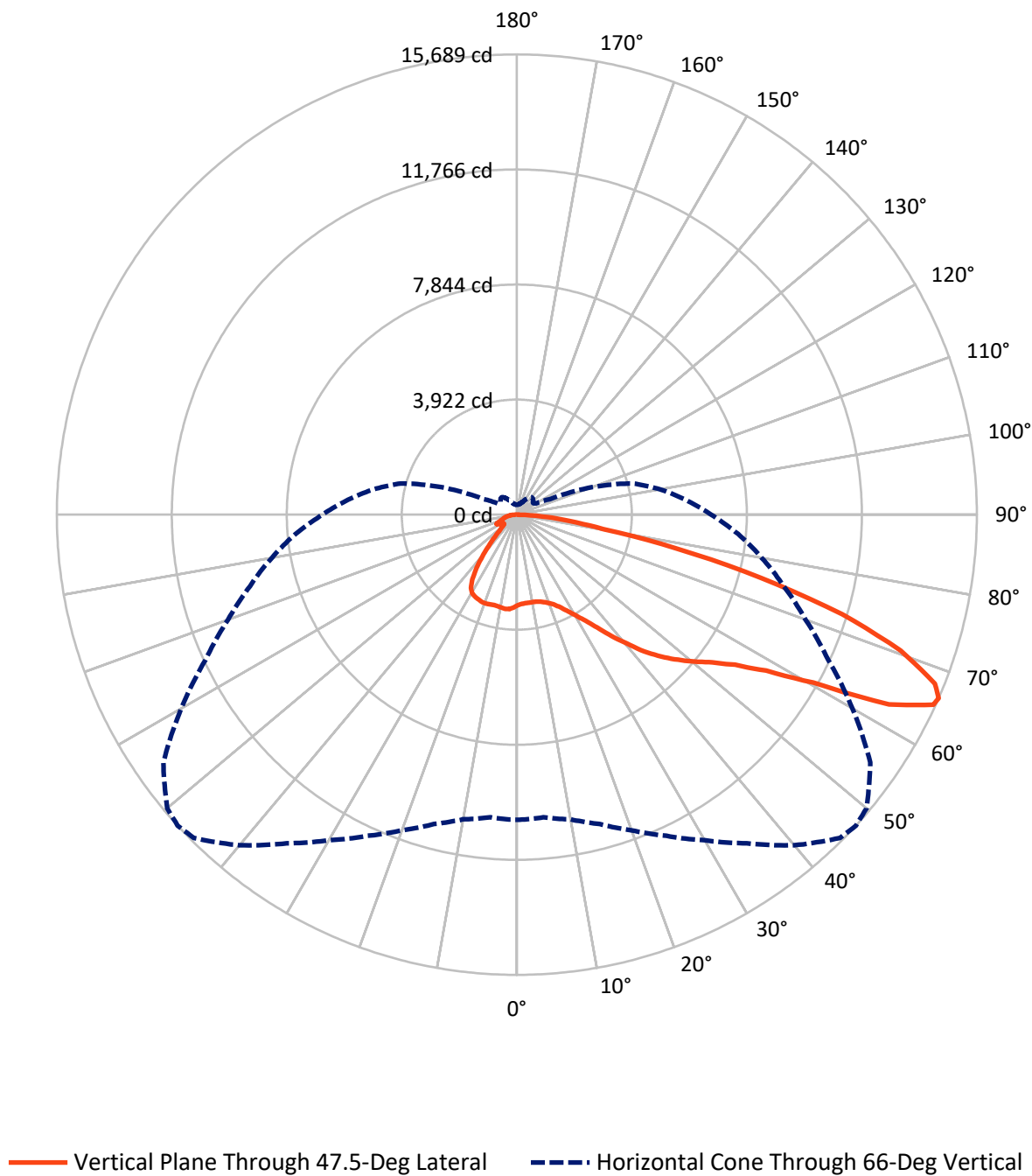


Based on 25 foot mounting height. Maximum calculated value = 5.1 fc  
 Type IV - Short - Semi-Cutoff

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## Luminous Intensity Polar Plot



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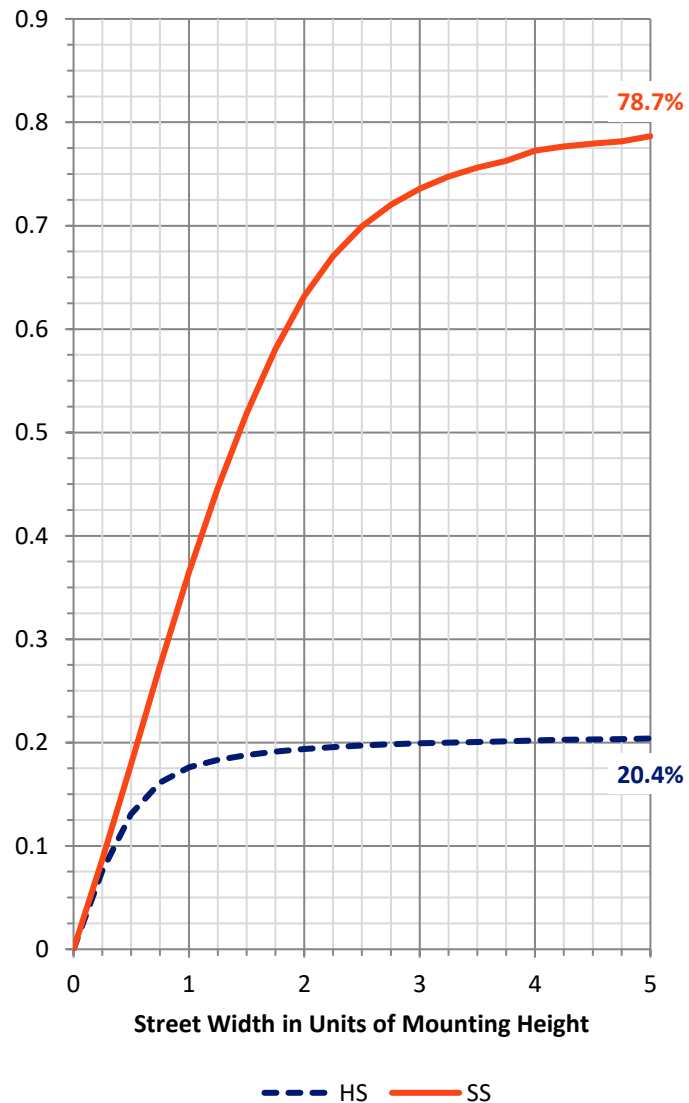
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total   |
|--------------------|-----------|----------|--------|---------|
| <b>House Side</b>  | Lumens    | 4680.9   | 0.0    | 4680.9  |
|                    | % Fixture | 20.7     | 0.0    | 20.7    |
| <b>Street Side</b> | Lumens    | 17927.3  | 0.0    | 17927.3 |
|                    | % Fixture | 79.3     | 0.0    | 79.3    |
| <b>Total</b>       | Lumens    | 22608.2  | 0.0    | 22608.2 |
|                    | % Fixture | 100.0    | 0.0    | 100.0   |

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 298.1   | 1.3       |
| 10°-20°   | 894.0   | 4.0       |
| 20°-30°   | 1525.4  | 6.7       |
| 30°-40°   | 2302.3  | 10.2      |
| 40°-50°   | 2992.5  | 13.2      |
| 50°-60°   | 4105.4  | 18.2      |
| 60°-70°   | 6315.4  | 27.9      |
| 70°-80°   | 3650.7  | 16.1      |
| 80°-90°   | 524.4   | 2.3       |
| 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°    | 22608.2 | 100.0     |
| 0°-180°   | 22608.2 | 100.0     |

**Coefficient of Utilization**



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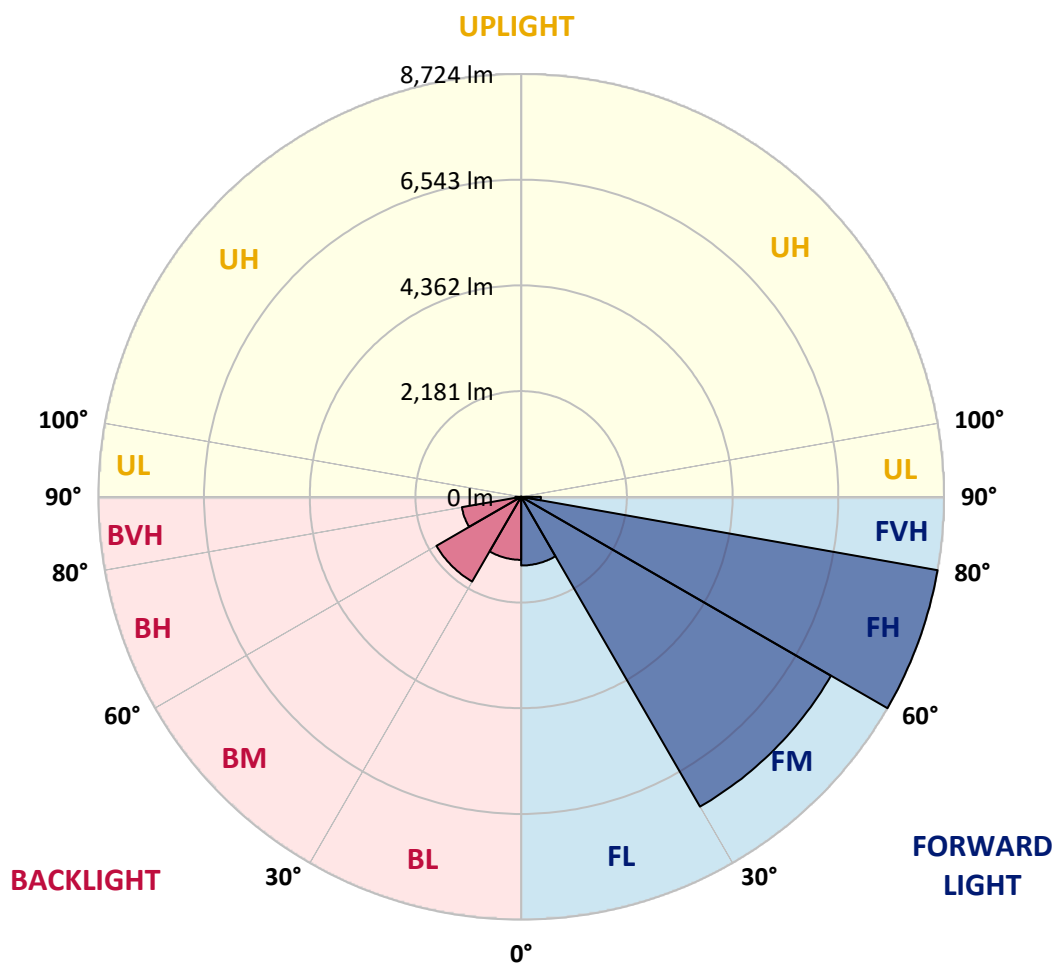
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |          |
|------|-------------|--------|-----------|-------------------------|------|----------|
|      |             |        |           | B                       | U    | G        |
| FL   | (0°-30°)    | 1417.1 | 6.3       |                         |      |          |
| FM   | (30°-60°)   | 7380.6 | 32.6      |                         |      |          |
| FH   | (60°-80°)   | 8723.7 | 38.6      |                         |      | G4/12000 |
| FVH  | (80°-90°)   | 405.9  | 1.8       |                         |      | G3/500   |
| BL   | (0°-30°)    | 1300.4 | 5.8       | B3/2500                 |      |          |
| BM   | (30°-60°)   | 2019.6 | 8.9       | B2/2500                 |      |          |
| BH   | (60°-80°)   | 1242.3 | 5.5       | B3/2500                 |      | G3/2500  |
| BVH  | (80°-90°)   | 118.6  | 0.5       |                         |      | G2/225   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |          |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |          |

**BUG Rating: B3-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 5°      | 10°     | 15°     | 20°     | 25°     | 30°     | 35°     | 40°     | 45°     | 47.5°   |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0°    | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  |
| 2.5°  | 3014.1  | 3015.6  | 3017.1  | 3017.1  | 3021.7  | 3021.7  | 3029.3  | 3033.8  | 3035.3  | 3044.4  | 3050.5  |
| 5°    | 2957.9  | 2956.3  | 2957.9  | 2960.9  | 2968.5  | 2974.6  | 2989.8  | 3000.4  | 3009.5  | 3024.7  | 3032.3  |
| 7.5°  | 2933.5  | 2936.6  | 2939.6  | 2941.1  | 2947.2  | 2962.4  | 2976.1  | 2986.7  | 3004.9  | 3023.2  | 3030.8  |
| 10°   | 2965.4  | 2970.0  | 2965.4  | 2968.5  | 2968.5  | 2982.2  | 2988.2  | 2995.8  | 3009.5  | 3026.2  | 3030.8  |
| 12.5° | 3039.9  | 3049.0  | 3039.9  | 3032.3  | 3026.2  | 3038.4  | 3035.3  | 3029.3  | 3036.8  | 3041.4  | 3041.4  |
| 15°   | 3162.9  | 3162.9  | 3156.9  | 3146.2  | 3131.0  | 3132.6  | 3118.9  | 3105.2  | 3099.1  | 3088.5  | 3080.9  |
| 17.5° | 3283.0  | 3279.9  | 3266.2  | 3252.6  | 3241.9  | 3237.4  | 3217.6  | 3199.4  | 3178.1  | 3161.4  | 3143.2  |
| 20°   | 3399.9  | 3412.1  | 3395.4  | 3375.6  | 3358.9  | 3348.3  | 3333.1  | 3296.6  | 3270.8  | 3243.5  | 3225.2  |
| 22.5° | 3602.0  | 3591.4  | 3573.1  | 3544.3  | 3527.5  | 3509.3  | 3477.4  | 3437.9  | 3398.4  | 3365.0  | 3342.2  |
| 25°   | 3810.1  | 3799.5  | 3773.7  | 3752.4  | 3728.1  | 3712.9  | 3677.9  | 3629.3  | 3591.4  | 3539.7  | 3509.3  |
| 27.5° | 4033.4  | 4024.3  | 3993.9  | 3977.2  | 3960.5  | 3942.3  | 3911.9  | 3861.8  | 3826.8  | 3767.6  | 3735.7  |
| 30°   | 4285.6  | 4284.1  | 4243.1  | 4240.0  | 4215.7  | 4196.0  | 4174.7  | 4132.2  | 4097.2  | 4038.0  | 4000.0  |
| 32.5° | 4554.5  | 4548.4  | 4519.6  | 4510.5  | 4527.2  | 4513.5  | 4483.1  | 4439.1  | 4393.5  | 4358.5  | 4316.0  |
| 35°   | 4937.3  | 4926.7  | 4910.0  | 4917.6  | 4928.2  | 4966.2  | 4919.1  | 4881.1  | 4826.4  | 4780.9  | 4721.6  |
| 37.5° | 5216.9  | 5201.7  | 5221.4  | 5264.0  | 5324.7  | 5353.6  | 5394.6  | 5396.1  | 5370.3  | 5309.5  | 5257.9  |
| 40°   | 5473.6  | 5467.5  | 5513.1  | 5572.4  | 5684.8  | 5766.8  | 5844.3  | 5882.3  | 5891.4  | 5851.9  | 5774.4  |
| 42.5° | 5690.9  | 5709.1  | 5769.9  | 5861.0  | 6019.0  | 6143.6  | 6287.9  | 6377.5  | 6433.7  | 6412.5  | 6377.5  |
| 45°   | 5949.1  | 5958.2  | 6032.7  | 6148.1  | 6298.5  | 6505.1  | 6695.0  | 6847.0  | 6945.7  | 6944.2  | 6904.7  |
| 47.5° | 6272.7  | 6274.2  | 6338.0  | 6473.2  | 6634.3  | 6843.9  | 7084.0  | 7286.0  | 7416.7  | 7422.7  | 7392.3  |
| 50°   | 6657.1  | 6654.0  | 6723.9  | 6851.5  | 7023.2  | 7225.2  | 7480.5  | 7732.6  | 7914.9  | 7914.9  | 7870.9  |
| 52.5° | 7152.3  | 7146.2  | 7184.2  | 7296.6  | 7462.2  | 7674.9  | 7928.6  | 8220.3  | 8417.8  | 8460.3  | 8364.6  |
| 55°   | 7813.2  | 7822.3  | 7831.4  | 7930.1  | 8071.4  | 8240.1  | 8531.7  | 8800.6  | 9065.0  | 9089.3  | 9033.1  |
| 57.5° | 8577.3  | 8546.9  | 8612.3  | 8773.3  | 8934.3  | 9145.5  | 9352.1  | 9669.6  | 9982.6  | 10035.7 | 10028.1 |
| 60°   | 9771.4  | 9731.9  | 9798.7  | 10003.8 | 10181.6 | 10514.3 | 10868.2 | 11278.4 | 11649.1 | 11758.5 | 11626.3 |
| 62.5° | 10869.8 | 10918.4 | 11009.5 | 11248.0 | 11506.3 | 11949.9 | 12481.6 | 13185.0 | 13888.4 | 14271.2 | 14243.9 |
| 65°   | 10771.0 | 10725.4 | 10900.1 | 11225.2 | 11693.2 | 12258.3 | 12919.1 | 13766.8 | 14780.1 | 15548.8 | 15617.2 |
| 66°   | 10404.9 | 10357.8 | 10546.2 | 10918.4 | 11453.1 | 12082.1 | 12815.8 | 13678.7 | 14714.8 | 15583.8 | 15688.6 |
| 67.5° | 9800.3  | 9753.2  | 9965.8  | 10304.6 | 10856.1 | 11647.6 | 12440.6 | 13384.0 | 14461.1 | 15293.6 | 15378.7 |
| 70°   | 8633.5  | 8569.7  | 8735.3  | 9118.1  | 9564.8  | 10330.4 | 11085.5 | 12085.1 | 13191.1 | 13856.5 | 13888.4 |
| 72.5° | 7313.4  | 7164.5  | 7340.7  | 7635.4  | 7954.4  | 8587.9  | 9245.8  | 9929.4  | 10810.5 | 11425.8 | 11602.0 |
| 75°   | 5306.5  | 5384.0  | 5435.6  | 5630.1  | 5841.3  | 6365.4  | 6751.3  | 7324.0  | 8006.1  | 8451.2  | 8592.5  |
| 77.5° | 2815.0  | 2932.0  | 3004.9  | 3199.4  | 3548.8  | 3948.4  | 4366.1  | 4720.1  | 5168.3  | 5417.4  | 5590.6  |
| 80°   | 1580.0  | 1662.0  | 1780.5  | 1933.9  | 2104.1  | 2410.9  | 2658.6  | 2840.9  | 2904.7  | 2948.7  | 2988.2  |
| 82.5° | 869.0   | 1077.1  | 1253.3  | 1359.7  | 1459.9  | 1583.0  | 1730.4  | 1882.3  | 1930.9  | 1858.0  | 1820.0  |
| 85°   | 135.2   | 199.0   | 606.2   | 739.8   | 805.2   | 899.4   | 1005.7  | 1118.1  | 1119.6  | 963.2   | 1051.3  |
| 87.5° | 38.0    | 42.5    | 86.6    | 130.6   | 127.6   | 103.3   | 127.6   | 232.4   | 136.7   | 68.4    | 79.0    |
| 90°   | 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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**CANDELA DISTRIBUTION (continued):**

|       | 50°     | 55°     | 60°     | 65°     | 70°     | 75°    | 80°    | 85°    | 90°    | 95°    | 100°   |
|-------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|
| 0°    | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1  | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 |
| 2.5°  | 3053.6  | 3056.6  | 3064.2  | 3071.8  | 3079.4  | 3087.0 | 3091.5 | 3099.1 | 3105.2 | 3114.3 | 3125.0 |
| 5°    | 3041.4  | 3049.0  | 3062.7  | 3079.4  | 3094.6  | 3108.2 | 3118.9 | 3134.1 | 3147.7 | 3159.9 | 3178.1 |
| 7.5°  | 3041.4  | 3056.6  | 3079.4  | 3097.6  | 3111.3  | 3128.0 | 3144.7 | 3159.9 | 3175.1 | 3187.2 | 3199.4 |
| 10°   | 3042.9  | 3058.1  | 3080.9  | 3102.2  | 3117.4  | 3135.6 | 3149.3 | 3162.9 | 3179.7 | 3187.2 | 3202.4 |
| 12.5° | 3049.0  | 3055.1  | 3071.8  | 3093.1  | 3111.3  | 3129.5 | 3143.2 | 3156.9 | 3175.1 | 3178.1 | 3188.8 |
| 15°   | 3079.4  | 3070.3  | 3074.8  | 3090.0  | 3109.8  | 3125.0 | 3140.2 | 3150.8 | 3162.9 | 3159.9 | 3169.0 |
| 17.5° | 3135.6  | 3112.8  | 3103.7  | 3105.2  | 3114.3  | 3125.0 | 3131.0 | 3132.6 | 3134.1 | 3120.4 | 3121.9 |
| 20°   | 3211.6  | 3179.7  | 3158.4  | 3147.7  | 3135.6  | 3125.0 | 3108.2 | 3088.5 | 3070.3 | 3042.9 | 3039.9 |
| 22.5° | 3325.5  | 3278.4  | 3255.6  | 3226.7  | 3190.3  | 3144.7 | 3103.7 | 3055.1 | 3015.6 | 2974.6 | 2959.4 |
| 25°   | 3491.1  | 3442.5  | 3418.2  | 3372.6  | 3307.3  | 3241.9 | 3182.7 | 3117.4 | 3059.6 | 3011.0 | 2988.2 |
| 27.5° | 3712.9  | 3664.3  | 3638.4  | 3591.4  | 3510.8  | 3445.5 | 3363.5 | 3293.6 | 3223.7 | 3152.3 | 3123.4 |
| 30°   | 3981.8  | 3939.2  | 3910.4  | 3872.4  | 3802.5  | 3731.1 | 3635.4 | 3527.5 | 3416.6 | 3302.7 | 3246.5 |
| 32.5° | 4299.3  | 4252.2  | 4230.9  | 4186.9  | 4113.9  | 4039.5 | 3933.2 | 3794.9 | 3609.6 | 3430.3 | 3317.9 |
| 35°   | 4695.8  | 4642.6  | 4618.3  | 4560.6  | 4475.5  | 4366.1 | 4252.2 | 4066.9 | 3816.2 | 3567.0 | 3383.2 |
| 37.5° | 5226.0  | 5107.5  | 5027.0  | 4894.8  | 4758.1  | 4604.6 | 4442.1 | 4252.2 | 3956.0 | 3647.6 | 3392.3 |
| 40°   | 5695.4  | 5575.4  | 5420.4  | 5230.5  | 5017.9  | 4806.7 | 4621.4 | 4405.6 | 4083.6 | 3705.3 | 3363.5 |
| 42.5° | 6278.8  | 6066.1  | 5818.5  | 5561.7  | 5279.2  | 5019.4 | 4799.1 | 4545.4 | 4170.2 | 3720.5 | 3283.0 |
| 45°   | 6812.0  | 6558.3  | 6227.1  | 5885.3  | 5534.4  | 5207.8 | 4960.1 | 4677.6 | 4244.6 | 3720.5 | 3185.7 |
| 47.5° | 7298.2  | 6994.3  | 6597.8  | 6172.4  | 5763.8  | 5406.8 | 5125.7 | 4812.8 | 4349.4 | 3767.6 | 3156.9 |
| 50°   | 7747.8  | 7398.4  | 6947.2  | 6453.5  | 5994.7  | 5613.4 | 5311.1 | 4986.0 | 4508.9 | 3889.1 | 3226.7 |
| 52.5° | 8221.8  | 7851.1  | 7301.2  | 6777.1  | 6271.2  | 5862.5 | 5540.5 | 5200.2 | 4715.5 | 4080.5 | 3349.8 |
| 55°   | 8843.2  | 8408.7  | 7784.3  | 7207.0  | 6651.0  | 6199.8 | 5833.7 | 5456.9 | 4941.9 | 4296.3 | 3500.2 |
| 57.5° | 9823.0  | 9192.6  | 8568.2  | 7817.7  | 7293.6  | 6699.6 | 6298.5 | 5865.6 | 5309.5 | 4577.3 | 3726.6 |
| 60°   | 11538.2 | 10763.4 | 10012.9 | 9150.0  | 8502.9  | 7881.5 | 7275.4 | 6710.2 | 6040.3 | 5212.3 | 4223.3 |
| 62.5° | 13987.1 | 13200.2 | 12021.3 | 10965.5 | 9988.6  | 9165.2 | 8375.3 | 7656.7 | 6796.8 | 5891.4 | 4835.6 |
| 65°   | 15450.1 | 14549.2 | 13144.0 | 11725.1 | 10538.6 | 9517.7 | 8613.8 | 7734.2 | 6805.9 | 5923.3 | 5020.9 |
| 66°   | 15567.1 | 14714.8 | 13213.9 | 11714.4 | 10482.4 | 9423.5 | 8483.1 | 7573.1 | 6622.1 | 5777.5 | 4960.1 |
| 67.5° | 15349.8 | 14616.1 | 13071.1 | 11507.8 | 10248.4 | 9104.5 | 8138.3 | 7184.2 | 6228.7 | 5446.3 | 4758.1 |
| 70°   | 13817.0 | 13286.8 | 11962.1 | 10497.6 | 9241.2  | 8232.5 | 7213.1 | 6295.5 | 5390.1 | 4732.3 | 4221.8 |
| 72.5° | 11327.0 | 10655.6 | 9728.9  | 8744.4  | 7755.4  | 6860.6 | 5933.9 | 5153.1 | 4393.5 | 3914.9 | 3553.4 |
| 75°   | 8320.6  | 7715.9  | 6695.0  | 6081.3  | 5428.0  | 4865.9 | 4241.6 | 3501.7 | 2962.4 | 2722.4 | 2634.3 |
| 77.5° | 5274.6  | 4618.3  | 3756.9  | 3079.4  | 2647.9  | 2275.7 | 1794.2 | 1426.5 | 1142.4 | 1189.5 | 1317.1 |
| 80°   | 2664.6  | 2295.5  | 1718.2  | 1356.6  | 1172.8  | 975.3  | 771.7  | 584.9  | 426.9  | 487.7  | 551.5  |
| 82.5° | 1710.6  | 1428.0  | 1137.9  | 896.3   | 756.6   | 666.9  | 533.2  | 387.4  | 288.6  | 325.1  | 398.0  |
| 85°   | 1030.0  | 870.5   | 694.3   | 568.2   | 493.7   | 411.7  | 302.3  | 214.2  | 212.7  | 227.9  | 281.0  |
| 87.5° | 156.5   | 223.3   | 129.1   | 138.2   | 145.8   | 156.5  | 138.2  | 117.0  | 101.8  | 132.2  | 167.1  |
| 90°   | 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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**CANDELA DISTRIBUTION (continued):**

|       | 105°   | 110°   | 115°   | 120°   | 125°   | 130°   | 135°   | 140°   | 145°   | 150°   | 155°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 |
| 2.5°  | 3135.6 | 3138.6 | 3144.7 | 3152.3 | 3150.8 | 3161.4 | 3167.5 | 3161.4 | 3175.1 | 3175.1 | 3182.7 |
| 5°    | 3193.3 | 3197.9 | 3208.5 | 3216.1 | 3219.2 | 3228.3 | 3231.3 | 3229.8 | 3232.8 | 3234.3 | 3237.4 |
| 7.5°  | 3210.0 | 3222.2 | 3226.7 | 3231.3 | 3232.8 | 3235.9 | 3235.9 | 3232.8 | 3232.8 | 3231.3 | 3234.3 |
| 10°   | 3205.5 | 3210.0 | 3213.1 | 3211.6 | 3211.6 | 3208.5 | 3207.0 | 3205.5 | 3205.5 | 3202.4 | 3207.0 |
| 12.5° | 3190.3 | 3190.3 | 3190.3 | 3187.2 | 3187.2 | 3185.7 | 3185.7 | 3185.7 | 3188.8 | 3190.3 | 3197.9 |
| 15°   | 3159.9 | 3159.9 | 3162.9 | 3161.4 | 3166.0 | 3173.6 | 3182.7 | 3188.8 | 3196.4 | 3197.9 | 3202.4 |
| 17.5° | 3112.8 | 3114.3 | 3123.4 | 3143.2 | 3162.9 | 3185.7 | 3202.4 | 3207.0 | 3200.9 | 3185.7 | 3175.1 |
| 20°   | 3030.8 | 3050.5 | 3087.0 | 3134.1 | 3178.1 | 3207.0 | 3214.6 | 3196.4 | 3167.5 | 3128.0 | 3106.7 |
| 22.5° | 2957.9 | 2997.3 | 3062.7 | 3140.2 | 3194.8 | 3214.6 | 3191.8 | 3149.3 | 3097.6 | 3052.0 | 3020.1 |
| 25°   | 2986.7 | 3032.3 | 3100.7 | 3167.5 | 3202.4 | 3191.8 | 3146.2 | 3085.5 | 3030.8 | 2977.6 | 2925.9 |
| 27.5° | 3108.2 | 3153.8 | 3202.4 | 3222.2 | 3210.0 | 3170.5 | 3106.7 | 3041.4 | 2968.5 | 2892.5 | 2828.7 |
| 30°   | 3223.7 | 3249.5 | 3252.6 | 3232.8 | 3188.8 | 3125.0 | 3050.5 | 2974.6 | 2881.9 | 2790.7 | 2710.2 |
| 32.5° | 3260.2 | 3229.8 | 3175.1 | 3118.9 | 3058.1 | 2992.8 | 2906.2 | 2805.9 | 2707.2 | 2603.9 | 2514.2 |
| 35°   | 3249.5 | 3126.5 | 2991.3 | 2871.3 | 2798.3 | 2723.9 | 2644.9 | 2511.2 | 2400.3 | 2312.2 | 2254.5 |
| 37.5° | 3153.8 | 2929.0 | 2720.9 | 2546.2 | 2432.2 | 2344.1 | 2227.1 | 2116.2 | 2020.5 | 1981.0 | 1933.9 |
| 40°   | 3020.1 | 2676.8 | 2388.2 | 2143.6 | 2025.1 | 1912.7 | 1782.0 | 1696.9 | 1669.6 | 1633.1 | 1634.6 |
| 42.5° | 2828.7 | 2382.1 | 2009.9 | 1728.8 | 1599.7 | 1476.6 | 1384.0 | 1333.8 | 1335.4 | 1305.0 | 1311.1 |
| 45°   | 2626.7 | 2085.8 | 1617.9 | 1338.4 | 1210.8 | 1106.0 | 1054.3 | 1039.1 | 1040.6 | 1042.2 | 1033.0 |
| 47.5° | 2503.6 | 1854.9 | 1297.4 | 1014.8 | 902.4  | 843.1  | 815.8  | 808.2  | 809.7  | 811.2  | 800.6  |
| 50°   | 2485.4 | 1734.9 | 1083.2 | 776.3  | 703.4  | 670.0  | 656.3  | 648.7  | 648.7  | 642.6  | 633.5  |
| 52.5° | 2537.0 | 1704.5 | 978.4  | 673.0  | 603.1  | 572.7  | 562.1  | 556.0  | 546.9  | 534.8  | 518.0  |
| 55°   | 2619.1 | 1731.9 | 946.5  | 638.1  | 569.7  | 539.3  | 525.6  | 522.6  | 507.4  | 484.6  | 457.3  |
| 57.5° | 2771.0 | 1830.6 | 967.7  | 647.2  | 575.8  | 548.4  | 539.3  | 536.3  | 515.0  | 480.1  | 445.1  |
| 60°   | 3207.0 | 2117.7 | 1074.1 | 698.8  | 619.8  | 597.0  | 597.0  | 592.5  | 563.6  | 513.5  | 463.4  |
| 62.5° | 3808.6 | 2538.6 | 1218.4 | 770.2  | 680.6  | 677.6  | 703.4  | 704.9  | 653.2  | 572.7  | 493.7  |
| 65°   | 4098.8 | 2736.0 | 1268.5 | 785.4  | 697.3  | 732.2  | 783.9  | 783.9  | 711.0  | 600.1  | 498.3  |
| 66°   | 4100.3 | 2731.5 | 1253.3 | 767.2  | 679.1  | 724.7  | 777.8  | 777.8  | 701.9  | 592.5  | 490.7  |
| 67.5° | 3995.5 | 2646.4 | 1203.2 | 733.8  | 638.1  | 680.6  | 727.7  | 726.2  | 657.8  | 562.1  | 469.4  |
| 70°   | 3583.8 | 2341.1 | 1060.4 | 679.1  | 589.4  | 591.0  | 607.7  | 597.0  | 551.5  | 486.1  | 426.9  |
| 72.5° | 3090.0 | 1958.2 | 919.1  | 644.1  | 551.5  | 522.6  | 508.9  | 499.8  | 470.9  | 431.4  | 395.0  |
| 75°   | 2369.9 | 1520.7 | 800.6  | 612.2  | 518.0  | 467.9  | 449.7  | 442.1  | 422.3  | 399.5  | 370.7  |
| 77.5° | 1452.3 | 1042.2 | 679.1  | 560.6  | 480.1  | 434.5  | 414.7  | 399.5  | 379.8  | 358.5  | 338.8  |
| 80°   | 625.9  | 628.9  | 543.9  | 475.5  | 417.8  | 364.6  | 338.8  | 320.5  | 309.9  | 302.3  | 291.7  |
| 82.5° | 437.5  | 451.2  | 414.7  | 369.2  | 319.0  | 281.0  | 258.3  | 253.7  | 255.2  | 255.2  | 252.2  |
| 85°   | 328.1  | 322.1  | 290.2  | 264.3  | 241.6  | 217.2  | 199.0  | 197.5  | 203.6  | 203.6  | 199.0  |
| 87.5° | 189.9  | 191.4  | 164.1  | 153.4  | 159.5  | 136.7  | 124.6  | 126.1  | 141.3  | 139.8  | 136.7  |
| 90°   | 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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|       | 160°   | 165°   | 170°   | 175°   | 180°   |
|-------|--------|--------|--------|--------|--------|
| 0°    | 3093.1 | 3093.1 | 3093.1 | 3093.1 | 3093.1 |
| 2.5°  | 3182.7 | 3187.2 | 3185.7 | 3190.3 | 3185.7 |
| 5°    | 3241.9 | 3240.4 | 3238.9 | 3245.0 | 3237.4 |
| 7.5°  | 3232.8 | 3234.3 | 3234.3 | 3234.3 | 3232.8 |
| 10°   | 3210.0 | 3216.1 | 3219.2 | 3225.2 | 3223.7 |
| 12.5° | 3202.4 | 3211.6 | 3220.7 | 3229.8 | 3231.3 |
| 15°   | 3204.0 | 3210.0 | 3214.6 | 3219.2 | 3220.7 |
| 17.5° | 3164.5 | 3162.9 | 3158.4 | 3155.3 | 3152.3 |
| 20°   | 3083.9 | 3076.3 | 3068.8 | 3056.6 | 3062.7 |
| 22.5° | 2983.7 | 2962.4 | 2938.1 | 2918.4 | 2916.8 |
| 25°   | 2866.7 | 2827.2 | 2787.7 | 2761.9 | 2752.8 |
| 27.5° | 2763.4 | 2716.3 | 2675.3 | 2652.5 | 2646.4 |
| 30°   | 2640.3 | 2597.8 | 2561.3 | 2541.6 | 2529.4 |
| 32.5° | 2458.0 | 2424.6 | 2379.0 | 2363.8 | 2362.3 |
| 35°   | 2204.3 | 2178.5 | 2146.6 | 2140.5 | 2132.9 |
| 37.5° | 1917.2 | 1908.1 | 1892.9 | 1874.7 | 1871.6 |
| 40°   | 1610.3 | 1616.4 | 1611.9 | 1601.2 | 1584.5 |
| 42.5° | 1314.1 | 1324.7 | 1326.2 | 1333.8 | 1341.4 |
| 45°   | 1046.7 | 1055.8 | 1055.8 | 1063.4 | 1072.5 |
| 47.5° | 803.6  | 797.6  | 802.1  | 809.7  | 814.3  |
| 50°   | 607.7  | 603.1  | 595.5  | 589.4  | 583.4  |
| 52.5° | 489.2  | 480.1  | 458.8  | 452.7  | 446.6  |
| 55°   | 431.4  | 414.7  | 399.5  | 393.5  | 393.5  |
| 57.5° | 414.7  | 393.5  | 376.8  | 369.2  | 366.1  |
| 60°   | 417.8  | 387.4  | 366.1  | 354.0  | 349.4  |
| 62.5° | 431.4  | 388.9  | 360.0  | 346.4  | 341.8  |
| 65°   | 429.9  | 385.9  | 358.5  | 343.3  | 338.8  |
| 66°   | 422.3  | 381.3  | 355.5  | 341.8  | 338.8  |
| 67.5° | 410.2  | 375.2  | 352.5  | 340.3  | 335.7  |
| 70°   | 385.9  | 363.1  | 346.4  | 335.7  | 331.2  |
| 72.5° | 366.1  | 350.9  | 335.7  | 323.6  | 320.5  |
| 75°   | 347.9  | 332.7  | 319.0  | 313.0  | 308.4  |
| 77.5° | 320.5  | 306.9  | 299.3  | 293.2  | 290.2  |
| 80°   | 284.1  | 275.0  | 265.9  | 259.8  | 255.2  |
| 82.5° | 247.6  | 235.5  | 226.4  | 221.8  | 218.8  |
| 85°   | 202.1  | 194.5  | 180.8  | 171.7  | 170.1  |
| 87.5° | 135.2  | 127.6  | 123.1  | 115.5  | 107.9  |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)