

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: P158204

Luminaire Tested: **VST-F02-LED-E-U-SL2-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P158204
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33712)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: VST-F02-LED-E-U-SL2-7030
Description: VENTUS LED SITE/ROADWAY LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 2 W/ SPILL LIGHT CONTROL
Light Source: (14) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4537.2 lumens
Efficiency: N/A
Efficacy: 82.5 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 1' x H: 0')
IES Classification: Type II - Short - Non-Cutoff
BUG Rating: B1 - U0 - G1

Input Watts (W): 55
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

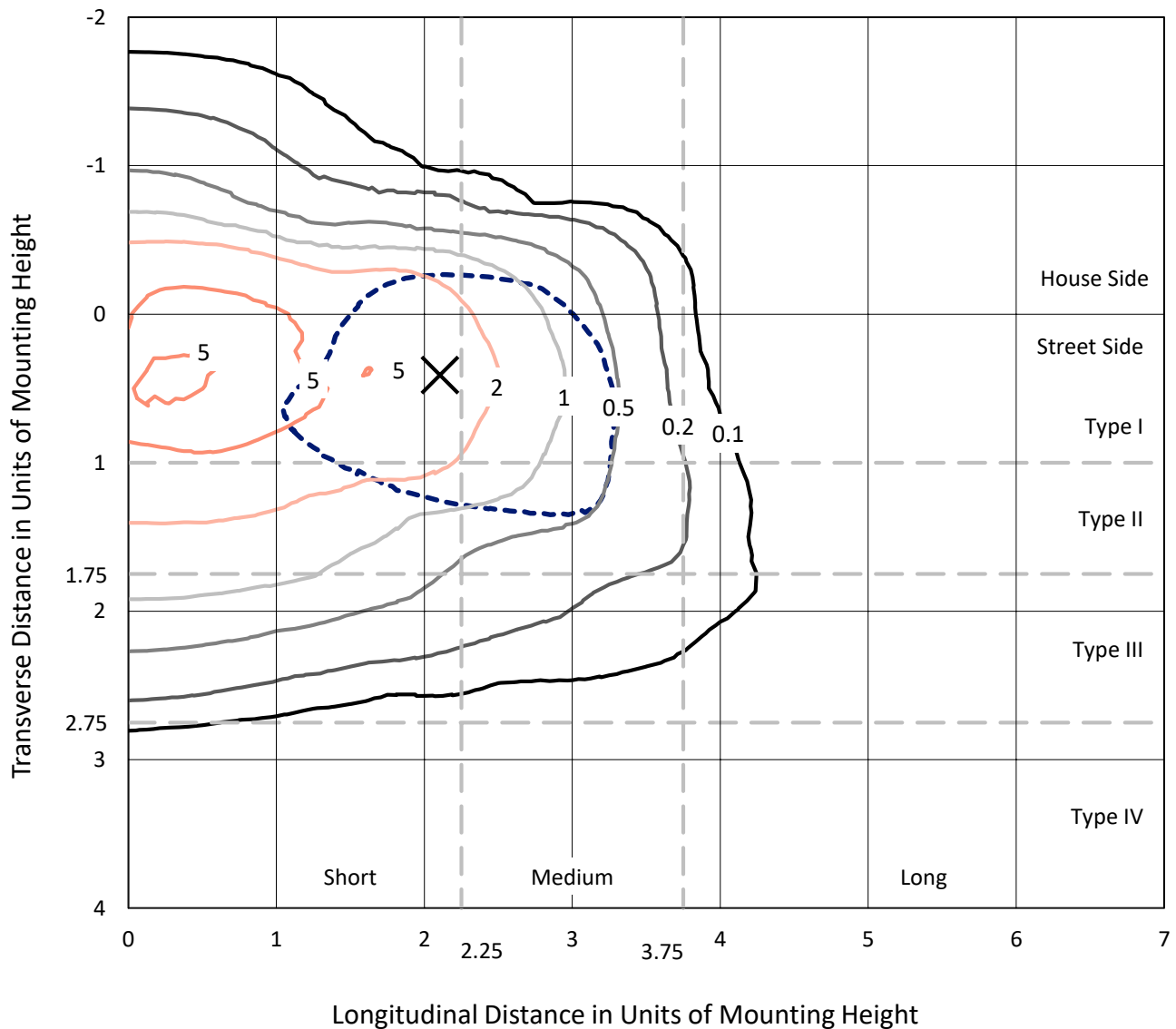


REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

Iso-Footcandle Lines of Horizontal Illumination

× Max cd
- - - 1/2 Max cd

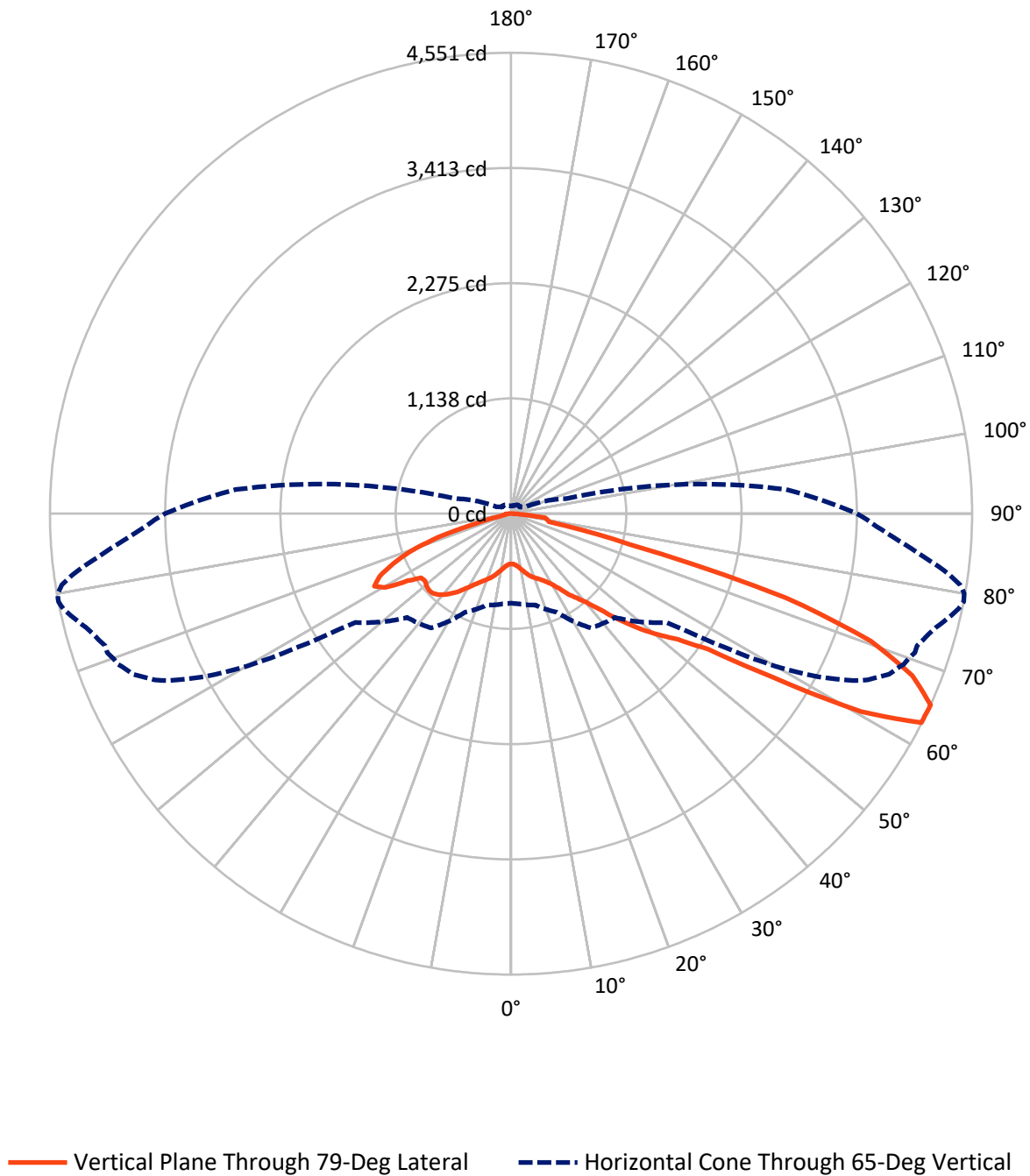


Based on 10 foot mounting height. Maximum calculated value = 6.4 fc
Type II - Short - Non-Cutoff

REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

Luminous Intensity Polar Plot



REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

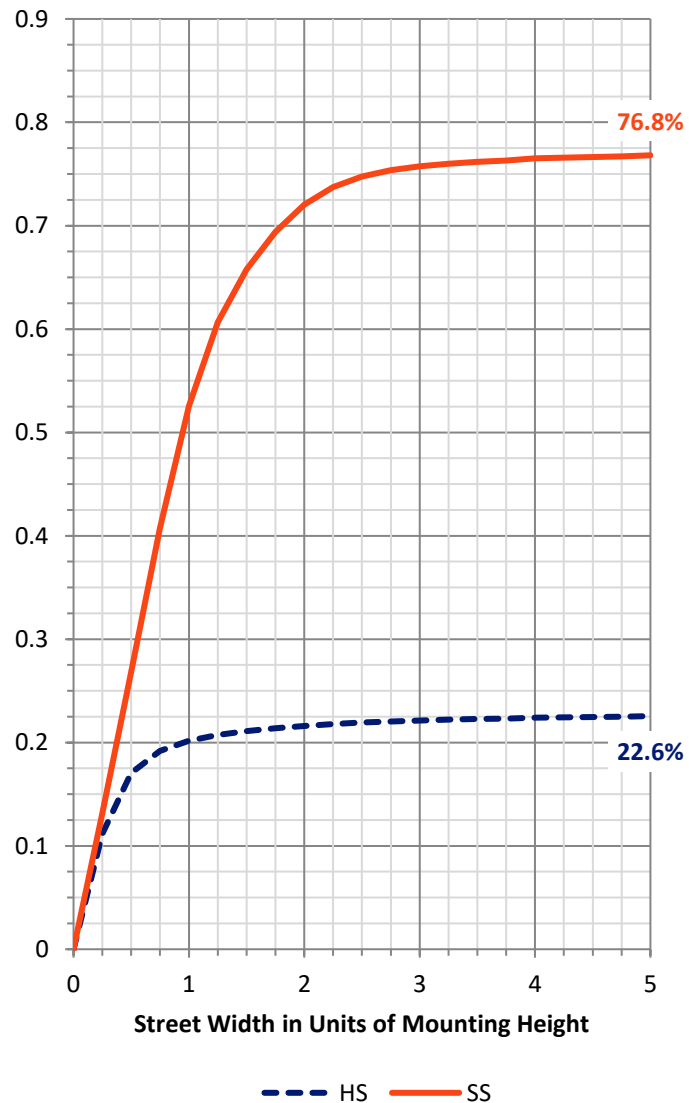
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1042.6	0.0	1042.6
	% Fixture	23.0	0.0	23.0
Street Side	Lumens	3494.6	0.0	3494.6
	% Fixture	77.0	0.0	77.0
Total	Lumens	4537.2	0.0	4537.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.1	1.1
10°-20°	159.5	3.5
20°-30°	275.0	6.1
30°-40°	450.4	9.9
40°-50°	754.3	16.6
50°-60°	1020.3	22.5
60°-70°	1256.5	27.7
70°-80°	486.4	10.7
80°-90°	85.5	1.9
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°	4537.2	100.0
0°-180°	4537.2	100.0

Coefficient of Utilization



REPORT NUMBER: P158204

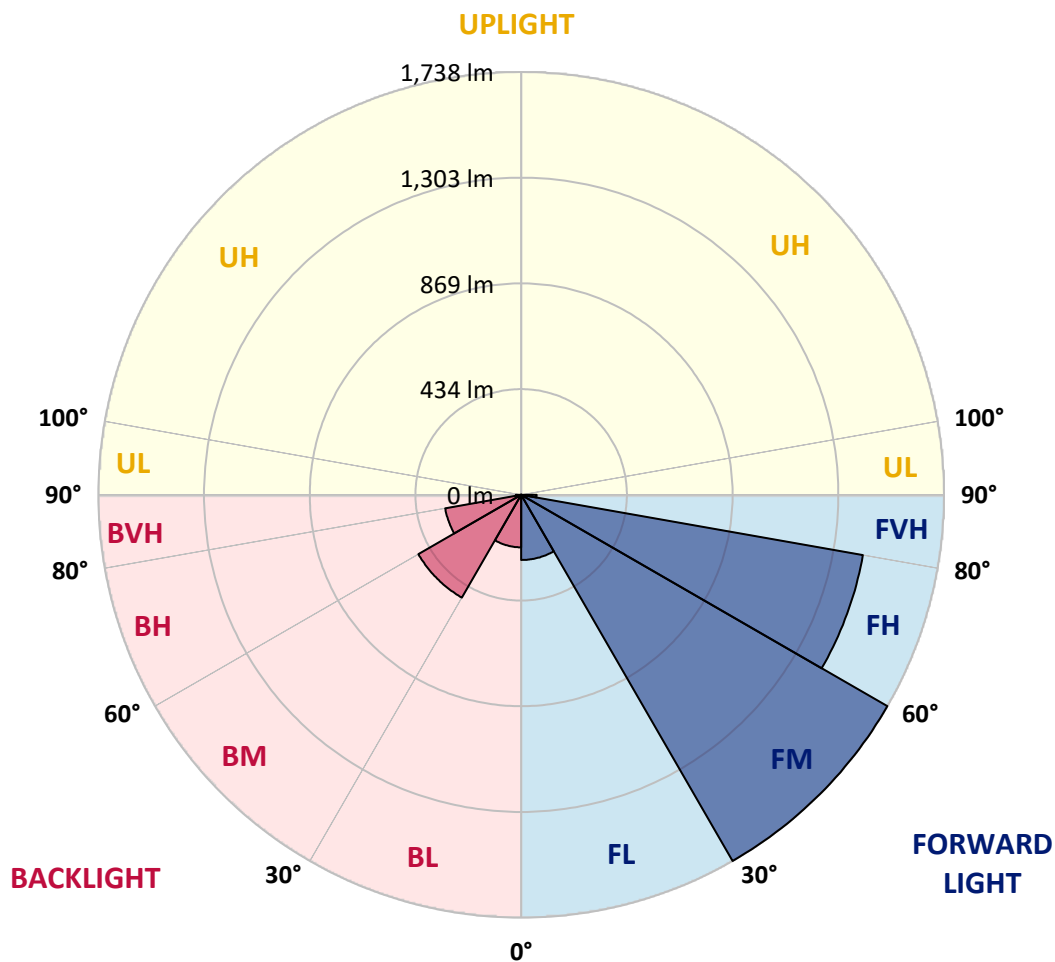
CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	267.9	5.9			
FM	(30°-60°)	1737.5	38.3			
FH	(60°-80°)	1425.7	31.4			G1/1800
FVH	(80°-90°)	63.5	1.4			G1/100
BL	(0°-30°)	215.8	4.8	B1/500		
BM	(30°-60°)	487.6	10.7	B1/1000		
BH	(60°-80°)	317.2	7.0	B1/500		G1/500
BVH	(80°-90°)	22.1	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type II Short





REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4
2.5°	497.3	495.8	497.3	498.5	499.4	500.6	500.3	500.0	499.7	500.0	500.0
5°	501.5	501.2	502.7	503.9	506.1	507.6	509.4	509.4	509.4	509.1	509.7
7.5°	515.1	514.8	516.4	517.6	519.4	522.4	524.8	526.0	525.7	525.7	525.7
10°	537.4	536.2	536.2	536.2	538.7	540.8	546.2	546.8	548.0	547.4	547.7
12.5°	559.1	559.4	558.5	557.6	557.9	562.2	570.0	571.5	571.8	572.8	573.4
15°	578.8	578.5	576.4	574.3	577.0	584.2	594.4	597.2	597.2	599.0	600.2
17.5°	596.9	596.3	592.3	588.7	591.4	603.8	619.8	621.6	624.3	625.2	626.4
20°	618.3	617.0	612.5	602.9	602.9	619.8	640.9	642.7	645.1	645.7	647.8
22.5°	648.1	645.1	635.5	618.0	613.1	632.8	658.7	659.6	661.4	663.8	665.6
25°	681.9	682.5	666.8	636.4	625.8	646.3	675.9	677.4	680.7	682.5	684.6
27.5°	716.9	717.8	700.3	662.3	644.5	665.0	699.1	700.9	704.8	706.9	710.3
30°	756.7	757.9	741.0	702.7	675.6	692.5	733.5	738.3	741.6	744.4	749.8
32.5°	852.3	845.1	833.3	792.6	749.8	748.6	789.0	794.4	799.0	804.7	809.8
35°	972.7	977.2	983.2	955.7	918.1	890.6	893.9	890.9	895.1	903.6	908.7
37.5°	1067.9	1077.9	1104.1	1121.9	1120.4	1115.0	1064.3	1064.3	1067.0	1062.5	1061.9
40°	1142.8	1149.1	1202.8	1271.8	1330.0	1358.7	1318.6	1312.9	1315.9	1292.6	1293.5
42.5°	1181.3	1190.7	1267.9	1389.2	1504.7	1596.7	1584.3	1580.4	1571.3	1565.6	1562.0
45°	1201.0	1212.1	1304.1	1470.6	1638.9	1780.9	1844.9	1844.3	1836.1	1829.5	1826.5
47.5°	1191.0	1200.7	1298.7	1495.3	1709.5	1899.8	2041.2	2050.0	2047.6	2057.2	2061.1
50°	1125.8	1138.2	1236.5	1441.9	1679.9	1946.5	2177.2	2193.5	2215.6	2229.4	2247.8
52.5°	1067.0	1077.3	1166.0	1355.4	1582.8	1908.5	2259.2	2292.7	2322.9	2351.3	2373.2
55°	1005.5	1015.8	1093.6	1265.5	1484.8	1796.3	2296.7	2345.5	2392.6	2440.5	2484.5
57.5°	982.3	993.2	1051.1	1195.9	1404.5	1685.0	2315.0	2395.3	2471.9	2553.3	2637.8
60°	1042.6	1052.3	1096.3	1197.7	1343.3	1573.7	2278.0	2404.0	2535.8	2670.1	2799.7
62.5°	1024.2	1029.4	1084.3	1241.4	1421.4	1463.9	2117.2	2283.7	2475.2	2671.9	2870.6
65°	883.7	893.6	935.0	1073.1	1377.7	1449.2	1872.3	2039.7	2265.6	2498.2	2764.4
67.5°	634.0	620.1	652.1	773.0	1068.8	1446.8	1596.7	1720.6	1897.7	2075.9	2294.3
70°	288.0	281.4	306.4	402.0	644.8	1143.4	1349.9	1391.9	1457.6	1577.6	1725.1
72.5°	113.7	113.4	129.7	166.2	304.9	735.9	1135.2	1159.3	1182.5	1234.7	1298.4
75°	74.5	74.5	79.3	89.6	150.2	355.3	960.3	982.3	1017.9	1032.7	1059.8
77.5°	56.1	56.4	58.5	60.9	82.9	187.0	677.7	755.8	816.1	861.1	893.9
80°	39.8	41.6	45.5	47.0	54.0	106.4	383.0	439.4	507.6	580.3	671.6
82.5°	29.9	32.0	38.6	40.4	42.8	60.6	172.8	196.0	228.9	296.8	426.8
85°	13.9	15.4	26.5	29.0	31.1	35.0	87.8	98.0	111.3	121.9	142.1
87.5°	2.1	1.5	4.5	6.4	10.0	10.3	30.2	35.9	38.9	46.7	48.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

CANDELA DISTRIBUTION (continued):

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4
2.5°	500.0	500.3	500.6	500.0	500.3	500.3	499.7	499.4	499.4	499.4	499.7
5°	509.7	510.3	509.7	510.0	511.2	510.9	510.3	510.0	511.2	511.5	510.6
7.5°	526.9	527.2	526.0	527.5	528.1	528.4	528.4	529.0	529.0	529.9	529.0
10°	548.9	548.9	551.0	550.7	551.0	551.6	551.9	553.1	554.0	554.0	554.6
12.5°	574.3	574.6	576.7	577.0	578.2	578.5	580.3	579.1	582.1	582.1	583.0
15°	600.5	602.6	602.9	605.9	606.5	606.8	609.2	609.2	611.3	611.6	612.2
17.5°	626.4	628.2	629.5	631.9	634.0	634.9	635.8	637.6	639.1	639.7	641.2
20°	648.7	650.5	651.8	654.2	656.0	657.5	658.4	660.5	662.0	662.6	664.7
22.5°	667.4	668.6	670.7	674.1	674.7	676.5	679.2	680.7	681.3	683.1	685.6
25°	687.4	689.2	690.4	693.4	695.8	698.8	701.2	703.6	704.2	706.6	708.8
27.5°	713.9	715.7	716.0	722.0	724.4	728.6	731.4	735.0	736.8	738.9	743.2
30°	753.1	757.3	759.1	766.1	767.3	772.1	776.9	778.1	780.8	781.1	788.1
32.5°	813.1	819.1	821.6	828.8	830.6	835.1	837.8	844.2	844.5	847.5	849.0
35°	911.4	909.9	919.3	921.1	926.5	930.4	933.1	933.1	938.9	939.2	941.0
37.5°	1045.6	1042.6	1045.0	1034.2	1036.9	1032.1	1031.2	1032.4	1030.0	1030.6	1030.3
40°	1260.4	1246.8	1232.6	1199.2	1191.9	1178.0	1167.2	1158.4	1150.0	1141.0	1134.9
42.5°	1529.7	1510.1	1489.0	1435.3	1410.2	1383.4	1357.2	1342.1	1312.0	1293.5	1283.6
45°	1812.0	1789.1	1759.5	1714.9	1679.3	1650.7	1602.7	1580.0	1533.3	1510.1	1478.8
47.5°	2043.3	2043.6	2019.8	1974.5	1936.6	1917.5	1887.7	1844.0	1790.9	1761.0	1705.3
50°	2245.7	2245.4	2243.9	2216.8	2190.2	2169.4	2143.1	2103.7	2060.2	2026.4	1962.5
52.5°	2395.3	2415.2	2423.6	2423.3	2420.0	2410.4	2390.5	2356.4	2312.3	2293.3	2242.4
55°	2518.9	2562.4	2585.0	2634.5	2639.0	2654.9	2637.5	2637.8	2611.9	2613.7	2597.3
57.5°	2706.2	2785.6	2831.1	2940.6	2995.4	3061.8	3050.0	3105.5	3125.8	3151.4	3185.5
60°	2918.9	3067.0	3174.9	3392.6	3481.3	3588.7	3647.8	3710.9	3756.7	3803.8	3838.4
62.5°	3070.9	3265.4	3442.7	3753.1	3868.3	3981.4	4055.9	4132.2	4183.7	4217.5	4242.6
65°	3008.8	3223.8	3433.4	3758.8	3884.3	3966.3	4055.0	4099.0	4150.6	4178.6	4214.5
67.5°	2556.7	2772.3	2997.0	3380.9	3512.1	3625.5	3694.6	3751.6	3793.2	3828.8	3870.1
70°	1901.3	2137.1	2369.3	2790.4	2956.0	3119.7	3201.2	3271.7	3315.2	3351.1	3396.6
72.5°	1368.4	1516.1	1661.2	2132.6	2298.2	2509.9	2594.3	2672.8	2729.2	2727.4	2775.6
75°	1089.4	1149.4	1213.9	1457.3	1576.1	1754.7	1802.0	1846.1	1819.6	1768.6	1765.6
77.5°	906.9	931.6	953.3	1029.7	1047.1	1089.7	1066.1	1041.7	963.0	896.6	861.7
80°	736.2	785.0	817.0	871.3	893.6	906.3	909.6	901.2	872.2	832.1	768.2
82.5°	547.4	640.3	703.6	810.4	849.6	857.8	873.4	863.8	844.8	812.2	766.4
85°	160.4	181.6	208.1	282.3	330.8	372.2	414.4	435.2	448.2	430.1	382.7
87.5°	56.4	63.7	71.2	98.0	104.3	126.1	123.7	146.0	146.9	153.2	146.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

CANDELA DISTRIBUTION (continued):

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4
2.5°	499.4	499.4	499.4	499.7	499.7	499.7	499.1	498.8	499.1	499.7	499.7
5°	511.2	511.5	512.1	510.9	511.2	512.1	511.5	511.2	511.5	512.1	511.5
7.5°	530.2	530.5	529.9	531.1	531.1	531.7	532.6	531.7	532.0	532.3	532.6
10°	554.9	555.2	555.8	556.7	557.0	557.6	558.2	559.1	559.1	558.5	560.0
12.5°	584.5	584.2	584.8	586.0	586.6	587.5	589.3	589.3	590.5	590.2	591.7
15°	613.4	614.9	615.2	617.3	618.3	619.8	621.9	623.1	623.1	624.9	625.5
17.5°	642.4	643.6	644.8	646.6	647.8	648.7	651.1	652.7	652.4	655.7	655.7
20°	664.7	667.1	668.6	669.8	671.9	673.4	675.3	677.1	678.3	680.4	681.0
22.5°	686.5	688.0	690.1	691.6	694.0	695.8	697.9	699.4	701.5	704.2	705.1
25°	710.6	713.0	715.4	717.5	719.3	721.4	725.0	728.3	731.4	733.8	734.7
27.5°	744.1	746.8	750.4	751.9	754.6	756.4	761.8	766.1	767.6	771.8	773.0
30°	789.3	792.3	795.9	797.7	802.6	805.0	810.7	815.2	816.7	821.9	822.8
32.5°	854.7	856.6	863.8	863.5	870.1	877.0	880.4	884.0	890.6	893.3	894.2
35°	945.5	949.7	954.8	954.5	963.0	966.9	973.6	977.5	982.3	982.0	987.1
37.5°	1033.3	1034.8	1036.6	1040.5	1046.5	1052.0	1054.4	1058.3	1061.9	1067.3	1074.0
40°	1128.9	1132.5	1132.8	1134.9	1137.9	1144.9	1149.4	1153.6	1166.0	1173.8	1177.7
42.5°	1272.1	1271.2	1265.2	1269.1	1270.9	1281.5	1284.8	1297.8	1311.7	1328.2	1332.8
45°	1456.4	1444.3	1440.7	1439.2	1448.9	1454.3	1467.9	1492.0	1506.5	1522.1	1529.7
47.5°	1683.2	1645.5	1627.7	1623.8	1633.7	1657.0	1661.5	1685.3	1704.3	1715.8	1723.3
50°	1910.3	1880.8	1843.4	1830.7	1828.0	1849.4	1854.5	1874.4	1893.7	1897.0	1893.1
52.5°	2195.6	2147.4	2085.5	2063.2	2045.5	2047.0	2051.2	2059.6	2072.0	2066.8	2056.3
55°	2560.6	2505.7	2475.2	2433.0	2406.1	2401.3	2382.9	2357.6	2356.7	2360.0	2328.4
57.5°	3168.3	3145.4	3158.3	3153.8	3127.3	3143.2	3060.3	3036.8	3018.1	2985.5	2956.3
60°	3869.2	3892.7	3919.6	3981.4	3978.7	4040.8	3983.2	3968.7	3951.2	3850.8	3801.7
62.5°	4286.3	4295.6	4335.2	4392.8	4449.5	4508.9	4535.7	4545.1	4508.6	4426.6	4324.0
65°	4213.6	4255.0	4293.2	4343.0	4401.2	4460.6	4517.3	4550.5	4542.1	4487.8	4375.0
67.5°	3883.4	3926.8	3982.9	4035.1	4097.8	4149.4	4211.5	4272.4	4274.2	4247.1	4168.7
70°	3401.4	3451.8	3509.7	3538.9	3606.8	3653.6	3705.1	3765.4	3785.0	3788.3	3697.0
72.5°	2765.3	2786.5	2814.8	2799.4	2813.0	2842.9	2829.0	2833.8	2759.3	2773.2	2660.4
75°	1684.1	1664.8	1579.1	1501.1	1405.7	1332.5	1349.9	1210.0	1072.2	1065.2	965.7
77.5°	854.1	823.4	770.3	715.1	634.3	541.7	464.5	381.2	310.9	270.8	232.6
80°	727.4	705.7	676.5	636.4	577.6	509.1	428.6	365.2	306.4	245.2	196.3
82.5°	696.1	629.8	587.2	553.7	490.1	426.8	382.7	339.3	297.7	260.0	206.0
85°	345.3	305.5	258.5	229.2	176.5	138.1	129.4	106.4	99.2	76.6	64.6
87.5°	116.1	95.0	70.9	59.7	47.6	38.9	38.3	34.1	33.8	30.8	28.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

CANDELA DISTRIBUTION (continued):

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4	496.4
2.5°	499.4	500.0	500.0	499.4	499.7	499.1	499.4	499.7	498.8	498.5	497.6
5°	511.8	511.5	511.5	511.8	512.7	513.0	511.5	512.1	512.4	510.9	507.6
7.5°	532.3	532.3	533.2	532.9	534.7	534.1	533.8	533.8	533.8	530.8	525.4
10°	560.0	560.0	561.0	562.2	562.5	561.9	561.9	562.2	563.7	557.6	549.2
12.5°	591.1	592.6	592.3	592.3	596.0	595.1	593.8	595.1	596.6	588.1	576.1
15°	625.8	626.7	627.3	629.5	628.9	631.0	631.6	631.0	632.5	621.6	601.4
17.5°	657.2	659.0	659.6	662.0	662.0	662.3	664.7	663.8	664.1	651.8	622.8
20°	683.1	684.9	685.9	688.6	689.2	690.4	691.3	691.9	693.4	678.6	640.3
22.5°	709.1	710.6	712.1	713.9	716.3	717.8	719.0	719.6	722.3	705.1	656.9
25°	738.0	741.3	742.9	745.9	748.3	750.7	752.5	752.8	757.3	735.9	670.4
27.5°	776.6	781.1	783.5	788.4	790.8	793.2	792.6	796.2	802.6	771.2	681.0
30°	827.3	833.0	834.5	839.3	843.2	845.7	848.4	851.4	855.7	810.4	686.2
32.5°	897.8	906.6	908.7	911.4	917.2	921.4	923.2	928.0	929.2	847.5	684.6
35°	994.7	990.7	1001.0	1003.4	1011.5	1014.9	1017.0	1023.3	1018.5	887.9	674.7
37.5°	1082.2	1080.9	1090.9	1096.3	1106.9	1104.4	1109.6	1113.8	1096.6	916.6	656.3
40°	1188.9	1187.4	1201.3	1203.1	1219.4	1215.7	1217.9	1221.2	1182.8	936.5	622.8
42.5°	1337.9	1338.5	1353.2	1355.1	1357.2	1363.8	1352.9	1353.5	1274.6	941.9	567.6
45°	1534.2	1544.8	1535.8	1536.1	1535.5	1522.7	1509.2	1493.2	1369.9	923.2	496.4
47.5°	1724.5	1717.3	1705.9	1695.3	1686.5	1666.6	1646.7	1619.6	1452.2	878.9	417.1
50°	1887.4	1871.1	1860.8	1831.6	1810.8	1784.9	1757.1	1726.0	1519.7	814.9	342.9
52.5°	2038.8	2021.9	1983.6	1953.1	1923.3	1888.9	1856.6	1820.2	1579.4	741.9	286.2
55°	2290.3	2275.6	2237.2	2181.5	2144.6	2097.3	2054.8	2005.3	1700.4	682.8	248.8
57.5°	2875.7	2863.1	2782.6	2747.3	2698.7	2579.9	2562.4	2485.1	2024.6	675.9	226.8
60°	3700.0	3645.7	3578.8	3482.2	3368.5	3329.3	3241.9	3139.0	2546.4	694.9	209.0
62.5°	4206.1	4082.4	3984.1	3872.8	3768.2	3678.3	3582.7	3481.0	2813.3	669.8	187.0
65°	4244.1	4098.7	3968.7	3838.1	3720.5	3608.6	3515.7	3414.1	2726.5	575.8	158.3
67.5°	4034.8	3881.6	3739.8	3591.7	3472.9	3371.9	3253.6	3155.9	2481.5	448.2	131.8
70°	3603.2	3468.7	3346.5	3187.0	3088.4	2965.3	2890.2	2768.0	2163.1	305.5	108.9
72.5°	2595.2	2493.9	2454.1	2342.8	2213.7	2141.3	2106.7	1988.1	1598.5	189.7	89.0
75°	876.7	901.8	844.5	756.7	799.6	733.5	760.3	703.9	676.2	108.9	74.8
77.5°	194.5	182.8	168.9	156.8	155.9	146.6	155.3	146.9	157.1	69.4	66.1
80°	153.5	121.3	103.1	94.1	89.3	86.6	84.4	82.0	74.8	59.1	60.9
82.5°	165.9	125.2	91.7	73.3	62.8	58.8	57.9	55.5	54.9	57.3	61.5
85°	53.1	44.3	37.7	35.6	32.9	31.4	30.8	29.9	36.2	62.5	59.1
87.5°	27.7	24.4	21.7	20.8	18.1	16.9	16.6	16.9	25.3	62.5	42.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P158204

CATALOG NUMBER: VST-F02-LED-E-U-SL2-7030

CANDELA DISTRIBUTION (continued):

	125°	135°	145°	155°	165°	175°	180°
0°	496.4	496.4	496.4	496.4	496.4	496.4	496.4
2.5°	496.7	496.4	495.8	495.5	495.2	493.7	494.9
5°	506.1	503.0	500.3	497.0	495.2	493.7	493.7
7.5°	520.3	511.8	504.9	497.3	492.2	488.3	487.7
10°	538.0	521.8	505.8	492.2	482.6	475.3	474.4
12.5°	554.9	530.2	504.9	482.6	467.5	457.2	456.6
15°	570.6	534.7	497.9	465.1	442.4	428.9	427.4
17.5°	583.0	532.0	482.3	440.6	409.9	393.9	393.0
20°	585.7	521.2	460.0	410.5	377.9	361.0	357.1
22.5°	583.3	501.5	432.2	377.3	339.9	323.0	320.9
25°	576.1	477.7	397.8	338.7	304.0	286.8	282.6
27.5°	563.1	449.7	360.7	301.3	266.9	250.3	246.1
30°	543.8	415.9	321.2	266.3	230.7	217.4	213.2
32.5°	517.0	374.9	282.3	230.4	200.9	190.3	188.5
35°	479.8	327.8	241.6	200.9	179.2	172.8	171.9
37.5°	432.5	280.8	207.5	179.8	164.0	160.1	159.5
40°	370.7	232.6	183.4	164.7	153.2	149.9	149.3
42.5°	307.0	196.3	165.6	152.6	143.3	140.2	139.3
45°	251.2	171.9	152.3	142.7	133.9	130.6	130.3
47.5°	209.6	157.7	141.4	133.6	124.9	121.0	121.3
50°	179.2	144.8	132.4	125.8	115.8	112.2	112.5
52.5°	158.3	131.8	124.0	116.4	108.0	104.3	104.3
55°	142.1	121.3	115.8	107.7	101.0	97.7	97.4
57.5°	128.8	112.8	108.0	101.3	94.7	90.8	90.8
60°	120.7	106.7	102.8	96.8	89.0	84.7	84.4
62.5°	115.8	104.9	101.6	93.2	84.4	80.2	79.3
65°	112.2	109.2	104.9	91.1	80.8	76.3	75.4
67.5°	112.5	119.2	113.1	92.3	79.6	73.0	71.8
70°	114.3	127.0	118.8	95.0	84.7	71.5	68.8
72.5°	105.2	114.9	107.0	90.5	82.6	68.8	65.5
75°	87.8	83.8	76.9	73.6	74.2	62.5	61.2
77.5°	71.2	62.5	55.8	58.5	62.5	53.4	52.2
80°	61.8	50.6	47.3	51.9	56.7	45.5	42.5
82.5°	57.9	42.8	40.7	54.0	59.4	39.2	34.4
85°	50.9	35.0	32.0	63.7	59.4	29.6	27.4
87.5°	34.1	20.8	19.9	46.7	40.7	20.5	16.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)