

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: P159810

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P159810
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
Description: VENTUS LED SITE/ROADWAY LUMINAIRE
(9) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT
Light Source: (189) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 26787.2 lumens
Efficiency: N/A
Efficacy: 118.7 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



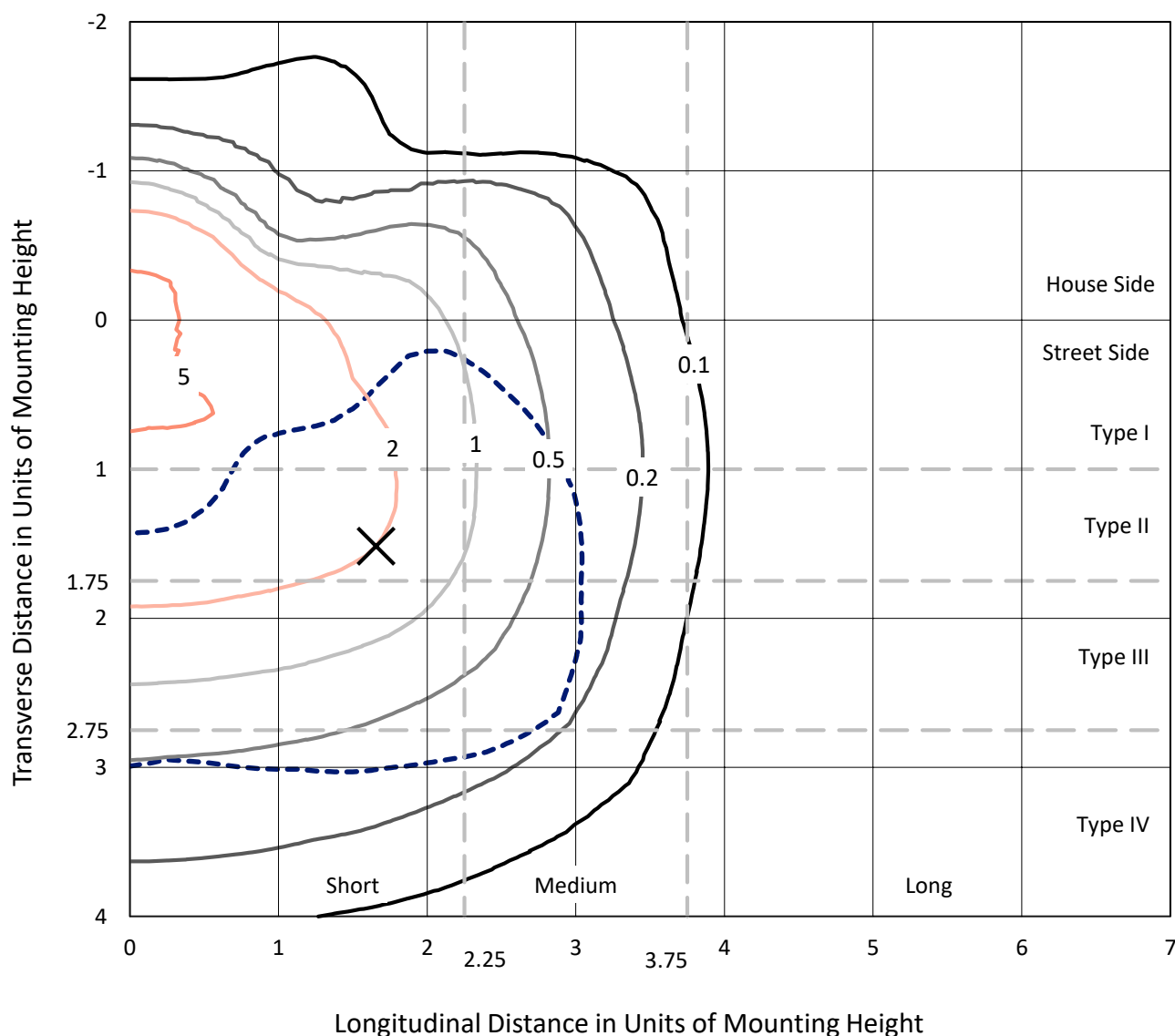
REPORT NUMBER: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

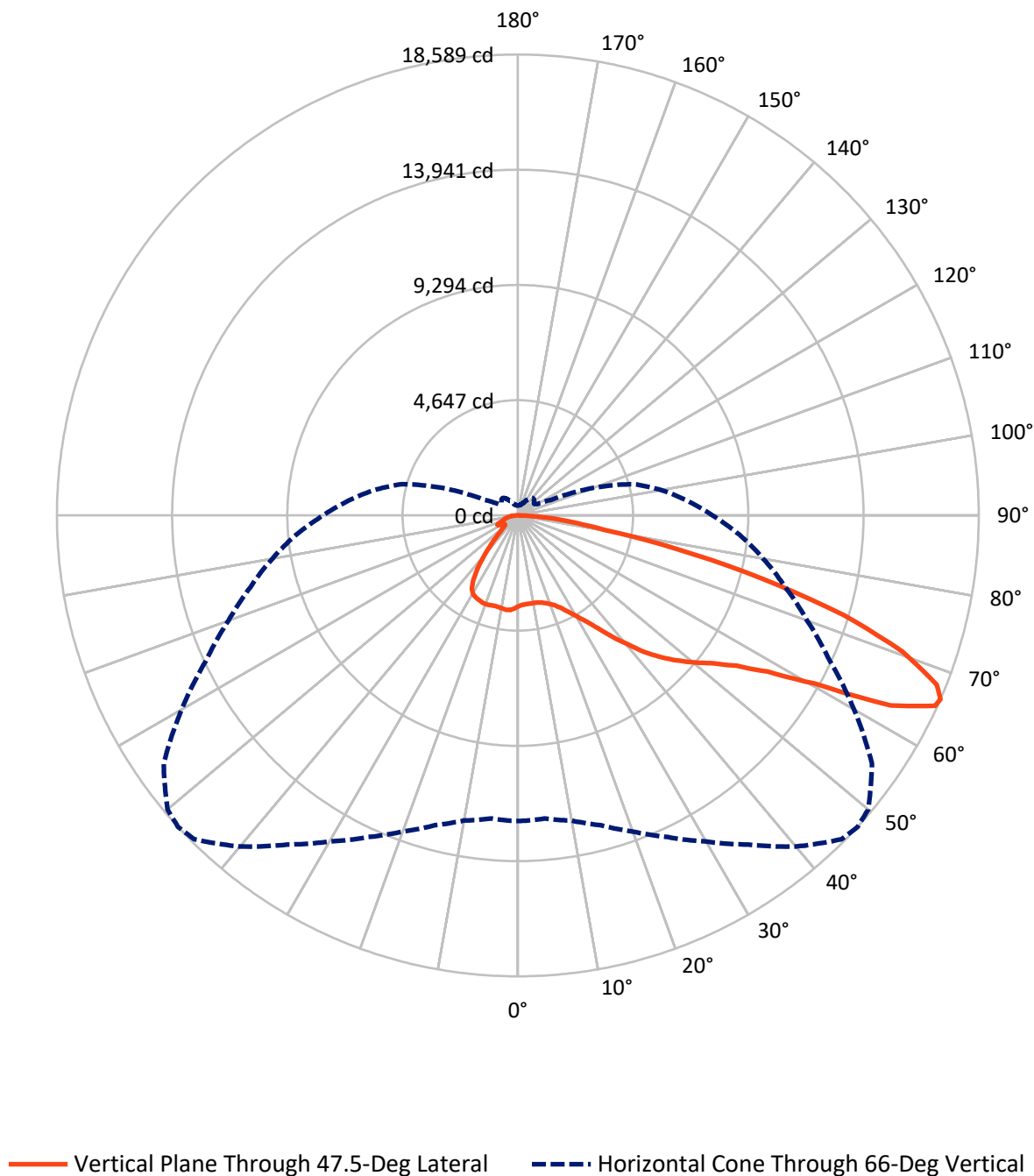


Based on 25 foot mounting height. Maximum calculated value = 6 fc
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

Luminous Intensity Polar Plot



REPORT NUMBER: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

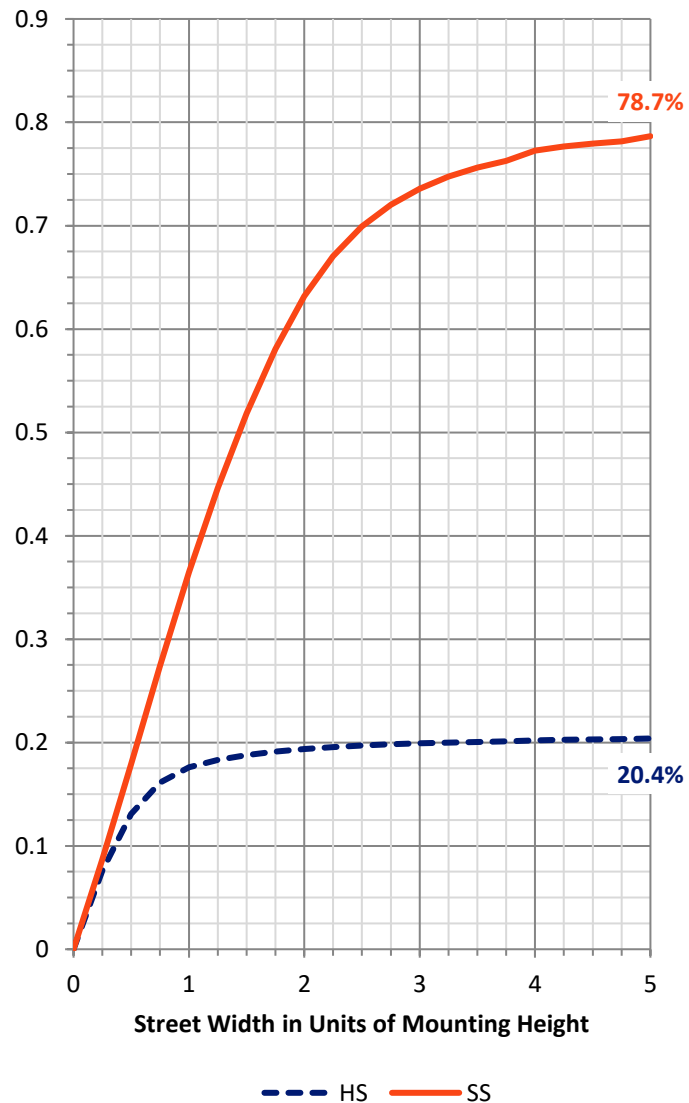
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5546.1	0.0	5546.1
	% Fixture	20.7	0.0	20.7
Street Side	Lumens	21241.1	0.0	21241.1
	% Fixture	79.3	0.0	79.3
Total	Lumens	26787.2	0.0	26787.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	353.2	1.3
10°-20°	1059.2	4.0
20°-30°	1807.3	6.7
30°-40°	2727.9	10.2
40°-50°	3545.6	13.2
50°-60°	4864.3	18.2
60°-70°	7482.8	27.9
70°-80°	4325.5	16.1
80°-90°	621.4	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°	26787.2	100.0
0°-180°	26787.2	100.0

Coefficient of Utilization



REPORT NUMBER: P159810

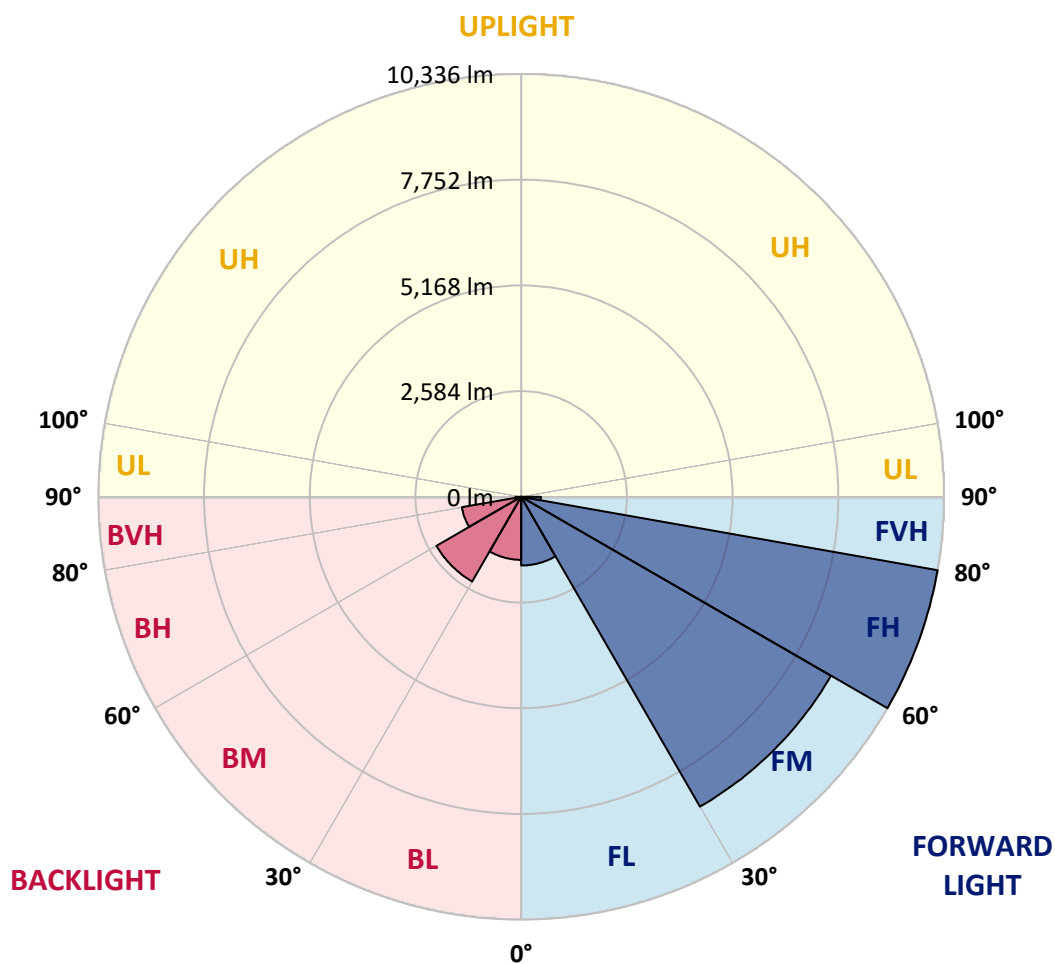
CATALOG NUMBER: VST-E09-LED-E-U-T4

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1679.0	6.3			
FM	(30°-60°)	8744.9	32.6			
FH	(60°-80°)	10336.3	38.6			G4/12000
FVH	(80°-90°)	480.9	1.8			G3/500
BL	(0°-30°)	1540.8	5.8	B3/2500		
BM	(30°-60°)	2392.9	8.9	B2/2500		
BH	(60°-80°)	1472.0	5.5	B3/2500		G3/2500
BVH	(80°-90°)	140.5	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





REPORT NUMBER: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	47.5°
0°	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8
2.5°	3571.2	3573.0	3574.8	3574.8	3580.2	3580.2	3589.2	3594.6	3596.4	3607.2	3614.4
5°	3504.6	3502.8	3504.6	3508.2	3517.2	3524.4	3542.4	3555.0	3565.8	3583.8	3592.8
7.5°	3475.8	3479.4	3483.0	3484.8	3492.0	3510.0	3526.2	3538.8	3560.4	3582.0	3591.0
10°	3513.6	3519.0	3513.6	3517.2	3517.2	3533.4	3540.6	3549.6	3565.8	3585.6	3591.0
12.5°	3601.8	3612.6	3601.8	3592.8	3585.6	3600.0	3596.4	3589.2	3598.2	3603.6	3603.6
15°	3747.6	3747.6	3740.4	3727.8	3709.8	3711.6	3695.4	3679.2	3672.0	3659.4	3650.4
17.5°	3889.8	3886.2	3870.0	3853.8	3841.2	3835.8	3812.4	3790.8	3765.6	3745.8	3724.2
20°	4028.4	4042.8	4023.0	3999.6	3979.8	3967.2	3949.2	3906.0	3875.4	3843.0	3821.4
22.5°	4267.8	4255.2	4233.6	4199.4	4179.6	4158.0	4120.2	4073.4	4026.6	3987.0	3960.0
25°	4514.4	4501.8	4471.2	4446.0	4417.2	4399.2	4357.8	4300.2	4255.2	4194.0	4158.0
27.5°	4779.0	4768.2	4732.2	4712.4	4692.6	4671.0	4635.0	4575.6	4534.2	4464.0	4426.2
30°	5077.8	5076.0	5027.4	5023.8	4995.0	4971.6	4946.4	4896.0	4854.6	4784.4	4739.4
32.5°	5396.4	5389.2	5355.0	5344.2	5364.0	5347.8	5311.8	5259.6	5205.6	5164.2	5113.8
35°	5850.0	5837.4	5817.6	5826.6	5839.2	5884.2	5828.4	5783.4	5718.6	5664.6	5594.4
37.5°	6181.2	6163.2	6186.6	6237.0	6309.0	6343.2	6391.8	6393.6	6363.0	6291.0	6229.8
40°	6485.4	6478.2	6532.2	6602.4	6735.6	6832.8	6924.6	6969.6	6980.4	6933.6	6841.8
42.5°	6742.8	6764.4	6836.4	6944.4	7131.6	7279.2	7450.2	7556.4	7623.0	7597.8	7556.4
45°	7048.8	7059.6	7147.8	7284.6	7462.8	7707.6	7932.6	8112.6	8229.6	8227.8	8181.0
47.5°	7432.2	7434.0	7509.6	7669.8	7860.6	8109.0	8393.4	8632.8	8787.6	8794.8	8758.8
50°	7887.6	7884.0	7966.8	8118.0	8321.4	8560.8	8863.2	9162.0	9378.0	9378.0	9325.8
52.5°	8474.4	8467.2	8512.2	8645.4	8841.6	9093.6	9394.2	9739.8	9973.8	10024.2	9910.8
55°	9257.4	9268.2	9279.0	9396.0	9563.4	9763.2	10108.8	10427.4	10740.6	10769.4	10702.8
57.5°	10162.8	10126.8	10204.2	10395.0	10585.8	10836.0	11080.8	11457.0	11827.8	11890.8	11881.8
60°	11577.6	11530.8	11610.0	11853.0	12063.6	12457.8	12877.2	13363.2	13802.4	13932.0	13775.4
62.5°	12879.0	12936.6	13044.6	13327.2	13633.2	14158.8	14788.8	15622.2	16455.6	16909.2	16876.8
65°	12762.0	12708.0	12915.0	13300.2	13854.6	14524.2	15307.2	16311.6	17512.2	18423.0	18504.0
66°	12328.2	12272.4	12495.6	12936.6	13570.2	14315.4	15184.8	16207.2	17434.8	18464.4	18588.6
67.5°	11611.8	11556.0	11808.0	12209.4	12862.8	13800.6	14740.2	15858.0	17134.2	18120.6	18221.4
70°	10229.4	10153.8	10350.0	10803.6	11332.8	12240.0	13134.6	14319.0	15629.4	16417.8	16455.6
72.5°	8665.2	8488.8	8697.6	9046.8	9424.8	10175.4	10954.8	11764.8	12808.8	13537.8	13746.6
75°	6287.4	6379.2	6440.4	6670.8	6921.0	7542.0	7999.2	8677.8	9486.0	10013.4	10180.8
77.5°	3335.4	3474.0	3560.4	3790.8	4204.8	4678.2	5173.2	5592.6	6123.6	6418.8	6624.0
80°	1872.0	1969.2	2109.6	2291.4	2493.0	2856.6	3150.0	3366.0	3441.6	3493.8	3540.6
82.5°	1029.6	1276.2	1485.0	1611.0	1729.8	1875.6	2050.2	2230.2	2287.8	2201.4	2156.4
85°	160.2	235.8	718.2	876.6	954.0	1065.6	1191.6	1324.8	1326.6	1141.2	1245.6
87.5°	45.0	50.4	102.6	154.8	151.2	122.4	151.2	275.4	162.0	81.0	93.6
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: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8
2.5°	3618.0	3621.6	3630.6	3639.6	3648.6	3657.6	3663.0	3672.0	3679.2	3690.0	3702.6
5°	3603.6	3612.6	3628.8	3648.6	3666.6	3682.8	3695.4	3713.4	3729.6	3744.0	3765.6
7.5°	3603.6	3621.6	3648.6	3670.2	3686.4	3706.2	3726.0	3744.0	3762.0	3776.4	3790.8
10°	3605.4	3623.4	3650.4	3675.6	3693.6	3715.2	3731.4	3747.6	3767.4	3776.4	3794.4
12.5°	3612.6	3619.8	3639.6	3664.8	3686.4	3708.0	3724.2	3740.4	3762.0	3765.6	3778.2
15°	3648.6	3637.8	3643.2	3661.2	3684.6	3702.6	3720.6	3733.2	3747.6	3744.0	3754.8
17.5°	3715.2	3688.2	3677.4	3679.2	3690.0	3702.6	3709.8	3711.6	3713.4	3697.2	3699.0
20°	3805.2	3767.4	3742.2	3729.6	3715.2	3702.6	3682.8	3659.4	3637.8	3605.4	3601.8
22.5°	3940.2	3884.4	3857.4	3823.2	3780.0	3726.0	3677.4	3619.8	3573.0	3524.4	3506.4
25°	4136.4	4078.8	4050.0	3996.0	3918.6	3841.2	3771.0	3693.6	3625.2	3567.6	3540.6
27.5°	4399.2	4341.6	4311.0	4255.2	4159.8	4082.4	3985.2	3902.4	3819.6	3735.0	3700.8
30°	4717.8	4667.4	4633.2	4588.2	4505.4	4420.8	4307.4	4179.6	4048.2	3913.2	3846.6
32.5°	5094.0	5038.2	5013.0	4960.8	4874.4	4786.2	4660.2	4496.4	4276.8	4064.4	3931.2
35°	5563.8	5500.8	5472.0	5403.6	5302.8	5173.2	5038.2	4818.6	4521.6	4226.4	4008.6
37.5°	6192.0	6051.6	5956.2	5799.6	5637.6	5455.8	5263.2	5038.2	4687.2	4321.8	4019.4
40°	6748.2	6606.0	6422.4	6197.4	5945.4	5695.2	5475.6	5220.0	4838.4	4390.2	3985.2
42.5°	7439.4	7187.4	6894.0	6589.8	6255.0	5947.2	5686.2	5385.6	4941.0	4408.2	3889.8
45°	8071.2	7770.6	7378.2	6973.2	6557.4	6170.4	5877.0	5542.2	5029.2	4408.2	3774.6
47.5°	8647.2	8287.2	7817.4	7313.4	6829.2	6406.2	6073.2	5702.4	5153.4	4464.0	3740.4
50°	9180.0	8766.0	8231.4	7646.4	7102.8	6651.0	6292.8	5907.6	5342.4	4608.0	3823.2
52.5°	9741.6	9302.4	8650.8	8029.8	7430.4	6946.2	6564.6	6161.4	5587.2	4834.8	3969.0
55°	10477.8	9963.0	9223.2	8539.2	7880.4	7345.8	6912.0	6465.6	5855.4	5090.4	4147.2
57.5°	11638.8	10891.8	10152.0	9262.8	8641.8	7938.0	7462.8	6949.8	6291.0	5423.4	4415.4
60°	13671.0	12753.0	11863.8	10841.4	10074.6	9338.4	8620.2	7950.6	7156.8	6175.8	5004.0
62.5°	16572.6	15640.2	14243.4	12992.4	11835.0	10859.4	9923.4	9072.0	8053.2	6980.4	5729.4
65°	18306.0	17238.6	15573.6	13892.4	12486.6	11277.0	10206.0	9163.8	8064.0	7018.2	5949.0
66°	18444.6	17434.8	15656.4	13879.8	12420.0	11165.4	10051.2	8973.0	7846.2	6845.4	5877.0
67.5°	18187.2	17317.8	15487.2	13635.0	12142.8	10787.4	9642.6	8512.2	7380.0	6453.0	5637.6
70°	16371.0	15742.8	14173.2	12438.0	10949.4	9754.2	8546.4	7459.2	6386.4	5607.0	5002.2
72.5°	13420.8	12625.2	11527.2	10360.8	9189.0	8128.8	7030.8	6105.6	5205.6	4638.6	4210.2
75°	9858.6	9142.2	7932.6	7205.4	6431.4	5765.4	5025.6	4149.0	3510.0	3225.6	3121.2
77.5°	6249.6	5472.0	4451.4	3648.6	3137.4	2696.4	2125.8	1690.2	1353.6	1409.4	1560.6
80°	3157.2	2719.8	2035.8	1607.4	1389.6	1155.6	914.4	693.0	505.8	577.8	653.4
82.5°	2026.8	1692.0	1348.2	1062.0	896.4	790.2	631.8	459.0	342.0	385.2	471.6
85°	1220.4	1031.4	822.6	673.2	585.0	487.8	358.2	253.8	252.0	270.0	333.0
87.5°	185.4	264.6	153.0	163.8	172.8	185.4	163.8	138.6	120.6	156.6	198.0
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: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

CANDELA DISTRIBUTION (continued):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8	3664.8
2.5°	3715.2	3718.8	3726.0	3735.0	3733.2	3745.8	3753.0	3745.8	3762.0	3762.0	3771.0
5°	3783.6	3789.0	3801.6	3810.6	3814.2	3825.0	3828.6	3826.8	3830.4	3832.2	3835.8
7.5°	3803.4	3817.8	3823.2	3828.6	3830.4	3834.0	3834.0	3830.4	3830.4	3828.6	3832.2
10°	3798.0	3803.4	3807.0	3805.2	3805.2	3801.6	3799.8	3798.0	3798.0	3794.4	3799.8
12.5°	3780.0	3780.0	3780.0	3776.4	3776.4	3774.6	3774.6	3774.6	3778.2	3780.0	3789.0
15°	3744.0	3744.0	3747.6	3745.8	3751.2	3760.2	3771.0	3778.2	3787.2	3789.0	3794.4
17.5°	3688.2	3690.0	3700.8	3724.2	3747.6	3774.6	3794.4	3799.8	3792.6	3774.6	3762.0
20°	3591.0	3614.4	3657.6	3713.4	3765.6	3799.8	3808.8	3787.2	3753.0	3706.2	3681.0
22.5°	3504.6	3551.4	3628.8	3720.6	3785.4	3808.8	3781.8	3731.4	3670.2	3616.2	3578.4
25°	3538.8	3592.8	3673.8	3753.0	3794.4	3781.8	3727.8	3655.8	3591.0	3528.0	3466.8
27.5°	3682.8	3736.8	3794.4	3817.8	3803.4	3756.6	3681.0	3603.6	3517.2	3427.2	3351.6
30°	3819.6	3850.2	3853.8	3830.4	3778.2	3702.6	3614.4	3524.4	3414.6	3306.6	3211.2
32.5°	3862.8	3826.8	3762.0	3695.4	3623.4	3546.0	3443.4	3324.6	3207.6	3085.2	2979.0
35°	3850.2	3704.4	3544.2	3402.0	3315.6	3227.4	3133.8	2975.4	2844.0	2739.6	2671.2
37.5°	3736.8	3470.4	3223.8	3016.8	2881.8	2777.4	2638.8	2507.4	2394.0	2347.2	2291.4
40°	3578.4	3171.6	2829.6	2539.8	2399.4	2266.2	2111.4	2010.6	1978.2	1935.0	1936.8
42.5°	3351.6	2822.4	2381.4	2048.4	1895.4	1749.6	1639.8	1580.4	1582.2	1546.2	1553.4
45°	3112.2	2471.4	1917.0	1585.8	1434.6	1310.4	1249.2	1231.2	1233.0	1234.8	1224.0
47.5°	2966.4	2197.8	1537.2	1202.4	1069.2	999.0	966.6	957.6	959.4	961.2	948.6
50°	2944.8	2055.6	1283.4	919.8	833.4	793.8	777.6	768.6	768.6	761.4	750.6
52.5°	3006.0	2019.6	1159.2	797.4	714.6	678.6	666.0	658.8	648.0	633.6	613.8
55°	3103.2	2052.0	1121.4	756.0	675.0	639.0	622.8	619.2	601.2	574.2	541.8
57.5°	3283.2	2169.0	1146.6	766.8	682.2	649.8	639.0	635.4	610.2	568.8	527.4
60°	3799.8	2509.2	1272.6	828.0	734.4	707.4	707.4	702.0	667.8	608.4	549.0
62.5°	4512.6	3007.8	1443.6	912.6	806.4	802.8	833.4	835.2	774.0	678.6	585.0
65°	4856.4	3241.8	1503.0	930.6	826.2	867.6	928.8	928.8	842.4	711.0	590.4
66°	4858.2	3236.4	1485.0	909.0	804.6	858.6	921.6	921.6	831.6	702.0	581.4
67.5°	4734.0	3135.6	1425.6	869.4	756.0	806.4	862.2	860.4	779.4	666.0	556.2
70°	4246.2	2773.8	1256.4	804.6	698.4	700.2	720.0	707.4	653.4	576.0	505.8
72.5°	3661.2	2320.2	1089.0	763.2	653.4	619.2	603.0	592.2	558.0	511.2	468.0
75°	2808.0	1801.8	948.6	725.4	613.8	554.4	532.8	523.8	500.4	473.4	439.2
77.5°	1720.8	1234.8	804.6	664.2	568.8	514.8	491.4	473.4	450.0	424.8	401.4
80°	741.6	745.2	644.4	563.4	495.0	432.0	401.4	379.8	367.2	358.2	345.6
82.5°	518.4	534.6	491.4	437.4	378.0	333.0	306.0	300.6	302.4	302.4	298.8
85°	388.8	381.6	343.8	313.2	286.2	257.4	235.8	234.0	241.2	241.2	235.8
87.5°	225.0	226.8	194.4	181.8	189.0	162.0	147.6	149.4	167.4	165.6	162.0
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: P159810

CATALOG NUMBER: VST-E09-LED-E-U-T4

CANDELA DISTRIBUTION (continued):

	160°	165°	170°	175°	180°
0°	3664.8	3664.8	3664.8	3664.8	3664.8
2.5°	3771.0	3776.4	3774.6	3780.0	3774.6
5°	3841.2	3839.4	3837.6	3844.8	3835.8
7.5°	3830.4	3832.2	3832.2	3832.2	3830.4
10°	3803.4	3810.6	3814.2	3821.4	3819.6
12.5°	3794.4	3805.2	3816.0	3826.8	3828.6
15°	3796.2	3803.4	3808.8	3814.2	3816.0
17.5°	3749.4	3747.6	3742.2	3738.6	3735.0
20°	3654.0	3645.0	3636.0	3621.6	3628.8
22.5°	3535.2	3510.0	3481.2	3457.8	3456.0
25°	3396.6	3349.8	3303.0	3272.4	3261.6
27.5°	3274.2	3218.4	3169.8	3142.8	3135.6
30°	3128.4	3078.0	3034.8	3011.4	2997.0
32.5°	2912.4	2872.8	2818.8	2800.8	2799.0
35°	2611.8	2581.2	2543.4	2536.2	2527.2
37.5°	2271.6	2260.8	2242.8	2221.2	2217.6
40°	1908.0	1915.2	1909.8	1897.2	1877.4
42.5°	1557.0	1569.6	1571.4	1580.4	1589.4
45°	1240.2	1251.0	1251.0	1260.0	1270.8
47.5°	952.2	945.0	950.4	959.4	964.8
50°	720.0	714.6	705.6	698.4	691.2
52.5°	579.6	568.8	543.6	536.4	529.2
55°	511.2	491.4	473.4	466.2	466.2
57.5°	491.4	466.2	446.4	437.4	433.8
60°	495.0	459.0	433.8	419.4	414.0
62.5°	511.2	460.8	426.6	410.4	405.0
65°	509.4	457.2	424.8	406.8	401.4
66°	500.4	451.8	421.2	405.0	401.4
67.5°	486.0	444.6	417.6	403.2	397.8
70°	457.2	430.2	410.4	397.8	392.4
72.5°	433.8	415.8	397.8	383.4	379.8
75°	412.2	394.2	378.0	370.8	365.4
77.5°	379.8	363.6	354.6	347.4	343.8
80°	336.6	325.8	315.0	307.8	302.4
82.5°	293.4	279.0	268.2	262.8	259.2
85°	239.4	230.4	214.2	203.4	201.6
87.5°	160.2	151.2	145.8	136.8	127.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)