

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: INVUE

Report Number: P95394

Luminaire Tested: **VFS-K-B20-3-LED-E1-NSR-SG**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P95394
REPORT SCALED FROM IESNA LM79-08 TEST DATA (P22801)
Test Lab: INNOVATION CENTER
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: VFS-K-B20-3-LED-E1-NSR-SG
Description: ARCHITECTURAL FLOOD LUMINAIRE
NARROW SYMMETRIC ROUND WITH SOFTENING GLASS DISTRIBUTION
WITH 20 LED'S, 350mA DRIVE CURRENT
Light Source: -
Ballast/Driver: -

Summary

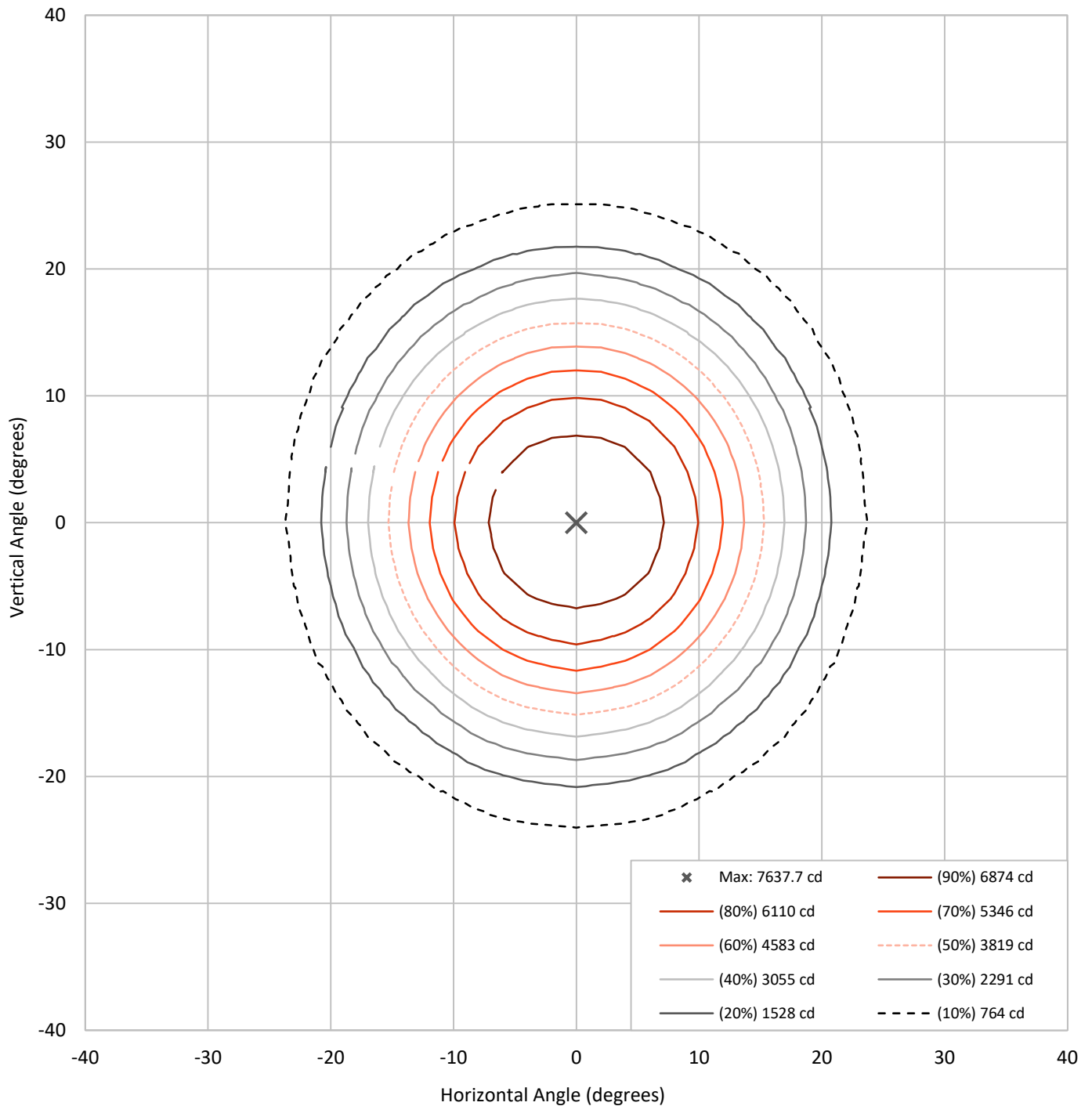
Lumens per Lamp:	N/A	NEMA Type:	4H x 4V
Luminaire Lumens:	2157.3 lumens	Max Intensity:	7637.7 candela
Efficiency:	N/A	Max Intensity Angle:	0°H x 0°V
Efficacy:	90.3 lumens/watt		
Luminous Opening:	(L: 0.83 ' x W: 0 ' x H: 0.5 ')		
Beam Angle (50%):	30.6°H x 30.9°V	Field Angle (10%):	47.2°H x 49°V
Beam Lumens:	1274.4 lumens	Field Lumens:	1910.8 lumens
Beam Efficiency:	59.1%	Field Efficiency:	88.6%

Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (A_{in}): 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



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Iso-Candela Plot





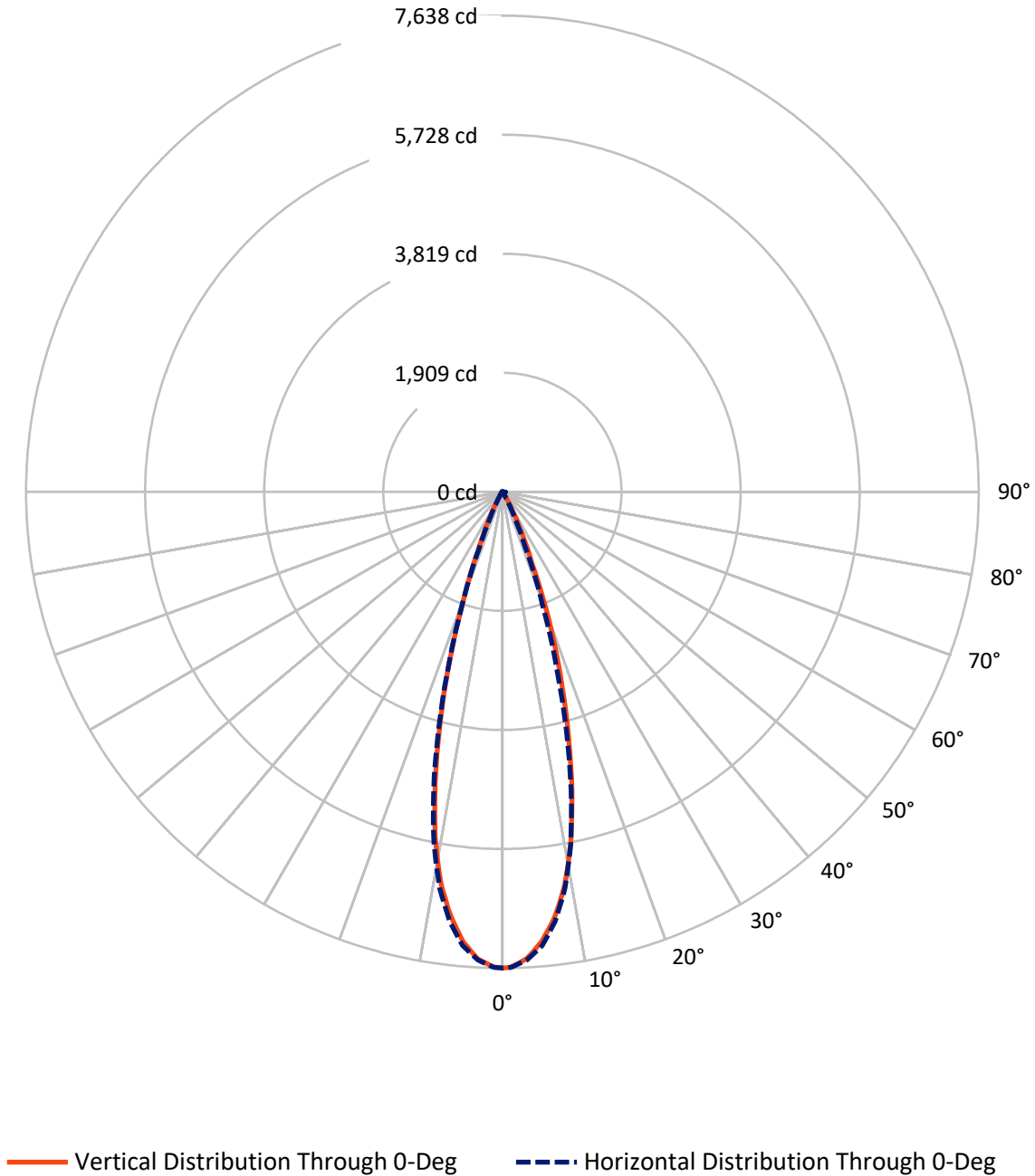
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Lumen Table

90	0.9	2.5		2.8		1.9		0.9		1.9		2.8		2.5		0.9			
80	0.9	2.5		2.8		1.9		0.9		1.9		2.8		2.5		0.9			
70	1.0	0.5	0.5	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.5	0.5	1.0			
60		0.4	0.3	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.2	0.3	0.4				
50	0.8	0.3	0.2	0.2	0.4	0.5	0.7	0.7	0.7	0.7	0.5	0.4	0.2	0.2	0.3	0.8			
40		0.2	0.2	0.3	0.5	0.8	1.5	2.5	2.5	1.5	0.8	0.5	0.3	0.2	0.2				
30	0.7	0.2	0.2	0.3	0.6	1.9	9.5	23.8	23.8	9.5	1.9	0.6	0.3	0.2	0.2	0.7			
20		0.1	0.1	0.3	0.9	7.0	49.6	112.1	112.1	49.6	7.0	0.9	0.3	0.1	0.1				
10	0.6	0.1	0.1	0.3	1.2	15.7	104.4	200.8	200.8	104.4	15.7	1.2	0.3	0.1	0.1	0.6			
0		0.1	0.1	0.3	1.1	14.8	101.6	199.1	199.1	101.6	14.8	1.1	0.3	0.1	0.1				
-10	0.7	0.1	0.1	0.3	0.8	5.8	43.4	103.5	103.5	43.4	5.8	0.8	0.3	0.1	0.1	0.7			
-20		0.2	0.1	0.3	0.6	1.6	7.2	18.5	18.5	7.2	1.6	0.6	0.3	0.1	0.2				
-30	0.8	0.2	0.2	0.3	0.5	0.8	1.2	1.8	1.8	1.2	0.8	0.5	0.3	0.2	0.2	0.8			
-40		0.3	0.2	0.2	0.4	0.5	0.7	0.7	0.7	0.7	0.5	0.4	0.2	0.2	0.3				
-50	1.0	0.4	0.3	0.2	0.3	0.4	0.5	0.4	0.4	0.5	0.4	0.3	0.2	0.3	0.4	1.0			
-60		0.5	0.5	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.5				
-70	0.9	2.5		2.8		1.9		0.9		1.9		2.8		2.5		0.9			
-80		2.5		2.8		1.9		0.9		1.9		2.8		2.5					
-90	0.9	2.5		2.8		1.9		0.9		1.9		2.8		2.5		0.9			
	-90	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90

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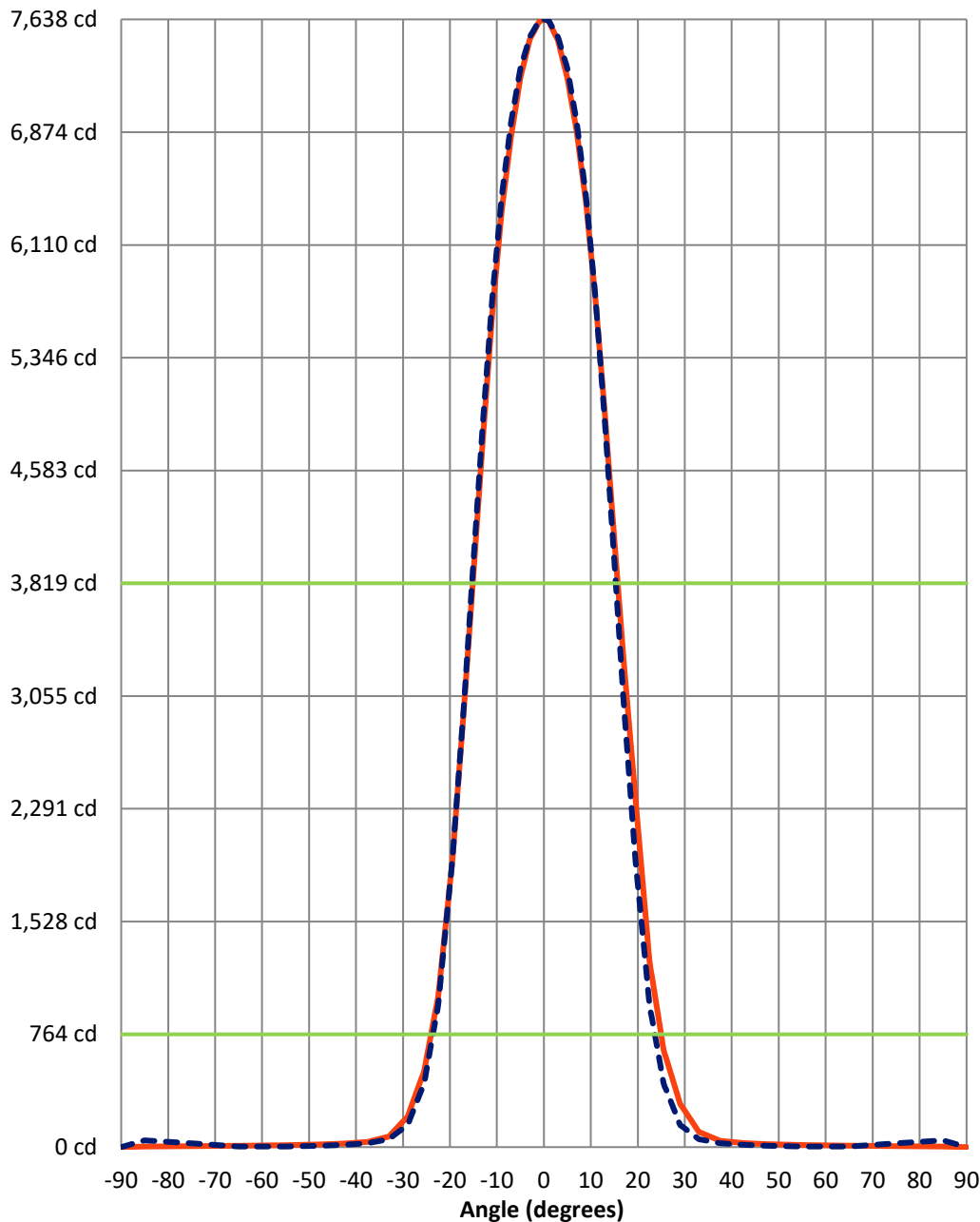
Luminous Intensity Polar Plot



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Luminous Intensity Plot



Beam:
H Angle: 30.6°
V Angle: 30.9°
Lumens: 1274.4
Efficiency: 59.1%

Field:
H Angle: 47.2°
V Angle: 49°
Lumens: 1910.8
Efficiency: 88.6%

Spill:
Lumens: 246.5
Efficiency: 11.4%

— Vertical Distribution through 0-Deg
- - Horizontal Distribution through 0-Deg



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FIELD
BEAM

CANDELA DISTRIBUTION:

	0°	1°	3°	5°	7°	9°	11°	13°	15°	17°	19.5°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	3.8	5.4	8.1	6.4	5.9	7.0	10.2	16.1	22.6	28.5	33.8
75°	6.4	6.4	8.1	9.7	10.7	10.7	9.7	9.1	8.6	8.6	8.1
65°	9.7	9.7	10.2	11.3	12.4	13.4	14.0	13.4	13.4	12.9	11.8
55°	14.0	13.4	14.0	14.5	15.6	16.1	16.6	17.2	17.2	17.2	16.1
47.5°	19.9	19.9	19.9	20.4	20.9	21.5	21.5	22.0	21.5	21.5	20.4
42.5°	27.4	26.9	26.9	26.9	27.4	27.4	27.4	26.9	26.3	25.8	24.7
37.5°	43.0	42.4	41.9	41.4	40.8	39.7	38.1	36.0	34.4	32.8	30.1
33°	103.1	99.9	97.2	91.3	84.3	74.1	67.7	59.6	53.2	46.7	40.3
29°	294.3	291.1	280.9	262.1	235.8	174.5	129.4	121.4	104.7	82.7	63.4
25.5°	657.9	668.6	646.1	592.4	528.4	450.0	377.5	300.7	229.3	160.0	105.3
22.5°	1257.2	1282.4	1227.7	1140.1	1004.3	865.7	728.2	577.9	435.5	317.4	187.4
19.5°	2359.7	2295.3	2208.3	2056.8	1812.0	1560.6	1291.0	1019.3	761.5	552.1	349.1
17°	3289.9	3323.7	3216.3	3025.1	2708.3	2359.7	1969.8	1568.7	1172.3	842.1	523.1
15°	4116.9	4153.4	4036.9	3819.4	3485.4	3067.0	2589.1	2085.8	1574.6	1133.7	701.4
13°	4959.5	4994.4	4852.7	4615.8	4253.9	3777.5	3230.3	2642.2	2027.3	1469.3	907.1
11°	5738.8	5767.2	5626.5	5372.5	4956.3	4471.9	3866.7	3205.0	2492.9	1830.8	1134.2
9°	6387.0	6404.7	6282.2	6041.1	5633.0	5099.2	4443.4	3720.6	2938.1	2181.4	1361.9
7°	6875.1	6892.3	6784.4	6567.4	6178.1	5631.4	4947.2	4171.2	3333.9	2491.3	1575.1
5°	7239.2	7256.4	7156.5	6951.9	6580.3	6042.2	5348.9	4534.7	3644.3	2753.9	1752.9
3°	7494.3	7498.6	7397.7	7186.6	6805.9	6301.6	5612.6	4778.0	3859.7	2918.3	1877.5
1°	7626.4	7618.4	7503.5	7288.1	6924.5	6418.7	5734.5	4895.6	3964.9	3003.6	1939.8
0°	7637.7	7629.7	7518.0	7304.8	6938.5	6429.4	5746.8	4902.1	3967.6	3006.3	1941.9
-1°	7622.2	7610.3	7500.8	7288.7	6918.6	6410.6	5727.0	4876.3	3937.0	2981.1	1921.0
-3°	7501.3	7484.7	7388.5	7165.7	6791.9	6259.7	5568.5	4718.4	3796.8	2857.6	1825.9
-5°	7242.5	7222.1	7128.1	6919.7	6532.0	5965.9	5261.3	4413.4	3532.6	2651.3	1679.3
-7°	6841.3	6811.8	6712.4	6499.2	6106.6	5540.1	4812.9	4000.4	3186.8	2365.1	1479.5
-9°	6334.3	6288.2	6164.6	5890.7	5477.8	4954.7	4249.6	3494.0	2766.3	1994.6	1248.1
-11°	5642.6	5587.9	5452.5	5211.4	4792.0	4263.5	3604.0	2920.9	2291.0	1646.6	1010.2
-13°	4792.5	4729.1	4605.1	4390.3	4011.7	3521.9	2922.0	2334.5	1807.1	1285.1	783.0
-15°	3881.2	3819.9	3712.0	3523.5	3180.9	2753.9	2251.3	1774.4	1359.2	960.2	586.4
-17°	2980.5	2918.8	2824.3	2674.4	2392.5	2039.7	1638.5	1279.2	977.4	692.8	428.0
-19.5°	1935.5	1887.7	1819.5	1714.8	1523.0	1280.3	1019.3	797.0	610.6	436.1	274.4
-22.5°	1021.4	993.5	966.7	909.2	807.7	681.5	554.2	444.1	335.1	201.4	121.4
-25.5°	515.0	500.5	486.6	457.6	401.7	333.0	272.8	220.2	155.2	112.8	85.9
-29°	207.8	201.9	197.6	133.7	126.2	119.2	113.3	97.2	77.3	63.4	51.0
-33°	72.0	70.4	69.8	67.1	61.8	55.9	52.6	48.9	44.6	40.3	36.0
-37.5°	35.4	35.4	35.4	35.4	34.9	34.4	33.8	32.8	31.7	30.1	28.5
-42.5°	24.2	24.7	24.7	24.7	25.2	25.2	25.2	25.2	25.2	24.7	23.6
-47.5°	18.3	18.3	18.8	19.3	19.3	20.4	20.4	20.9	20.9	20.4	19.9
-55°	12.9	12.9	13.4	14.0	15.0	15.6	16.1	16.6	16.6	16.6	16.1
-65°	9.1	9.1	9.7	10.7	11.8	12.9	13.4	13.4	12.9	12.4	11.8
-75°	6.4	6.4	8.1	9.7	10.7	10.2	9.7	9.1	8.6	8.6	8.1
-85°	3.8	5.9	8.1	6.4	5.9	7.0	10.2	16.1	22.6	28.5	33.8
-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):

	22.5°	25.5°	29°	33°	37.5°	42.5°	47.5°	55°	65°	75°	85°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	38.7	42.4	44.6	46.7	48.3	49.4	50.5	50.5	51.0	51.6	51.6
75°	8.1	9.1	10.2	15.6	22.0	29.5	35.4	43.0	47.8	50.5	51.6
65°	11.3	10.7	10.2	9.7	9.7	11.3	17.2	27.9	40.8	48.3	51.0
55°	15.6	14.5	12.9	11.8	10.7	9.7	10.2	16.1	31.7	45.1	51.0
47.5°	19.3	17.7	16.1	14.0	12.4	10.7	9.7	11.3	25.2	43.0	50.5
42.5°	22.6	20.9	18.8	16.1	14.0	11.8	10.2	10.2	20.9	40.8	50.5
37.5°	27.4	24.7	21.5	18.3	15.6	12.9	10.7	9.7	17.7	38.7	50.5
33°	34.4	29.5	25.2	20.9	17.2	13.4	11.3	8.6	16.1	36.5	49.9
29°	46.7	36.5	29.5	23.6	18.8	14.5	11.3	8.6	14.0	34.9	49.4
25.5°	73.0	49.4	35.4	26.3	19.9	15.0	11.3	8.1	12.4	33.3	48.9
22.5°	105.8	68.7	43.0	29.5	21.5	15.6	11.3	7.5	11.3	32.2	48.3
19.5°	174.5	94.5	53.2	32.8	22.6	15.6	10.7	7.0	9.7	30.6	47.8
17°	234.1	113.3	65.0	36.0	23.1	15.6	10.7	6.4	8.6	29.5	47.8
15°	364.1	124.6	76.8	38.7	23.6	16.1	10.7	5.9	8.1	28.5	47.3
13°	464.5	129.4	89.7	41.9	24.7	16.1	10.2	5.9	7.0	27.9	47.3
11°	574.1	234.7	99.4	44.6	25.2	16.1	10.2	5.4	6.4	27.4	46.7
9°	686.9	264.8	105.8	47.3	25.2	15.6	9.7	4.8	5.4	26.9	46.7
7°	791.1	291.6	110.6	49.4	25.8	15.6	9.7	4.3	4.8	26.3	46.2
5°	877.5	313.6	115.5	51.6	26.3	15.6	9.7	3.8	4.3	25.8	46.2
3°	937.1	327.6	118.1	52.6	26.3	15.6	9.1	3.8	4.3	25.8	45.6
1°	965.1	332.4	118.7	53.2	26.3	15.6	9.1	3.8	3.8	25.8	45.6
0°	962.9	431.2	150.9	53.7	26.3	15.6	9.1	3.8	3.8	25.8	45.6
-1°	948.4	327.1	118.1	53.2	25.8	15.6	9.1	3.8	3.8	25.8	45.6
-3°	897.4	312.6	116.0	51.6	25.8	15.0	9.1	3.8	3.8	25.8	45.6
-5°	821.7	290.5	113.3	49.4	25.2	15.0	9.1	3.8	4.3	25.8	45.6
-7°	719.6	265.3	107.9	46.7	24.7	15.0	9.1	4.3	4.3	26.3	46.2
-9°	609.0	235.2	102.0	44.0	24.2	15.0	9.1	4.3	4.8	26.3	46.2
-11°	496.8	130.0	90.8	40.8	23.6	15.0	9.1	4.3	5.4	26.9	46.2
-13°	391.0	126.2	78.9	38.1	23.1	15.0	9.7	4.8	5.9	27.4	46.7
-15°	239.0	120.8	66.6	35.4	22.0	14.5	9.7	5.4	7.0	27.9	46.7
-17°	191.2	103.6	56.4	32.8	21.5	14.5	9.7	5.4	7.5	28.5	47.3
-19.5°	119.2	81.1	45.6	29.5	20.9	14.5	9.7	5.9	8.6	29.5	47.3
-22.5°	88.1	56.4	37.6	26.9	19.9	14.5	10.2	7.0	10.2	31.1	47.8
-25.5°	58.5	42.4	31.7	24.7	18.8	14.0	10.7	7.5	11.8	32.8	48.3
-29°	40.3	33.3	27.4	22.6	17.7	14.0	10.7	8.6	14.0	34.4	48.9
-33°	31.7	27.9	24.2	20.4	16.6	13.4	10.7	9.1	16.1	36.5	49.4
-37.5°	26.3	24.2	21.5	18.3	15.6	12.9	10.7	9.7	18.3	38.7	49.9
-42.5°	22.0	20.4	18.3	16.1	14.0	11.8	10.2	10.7	22.0	40.8	50.5
-47.5°	18.8	17.7	16.1	14.0	12.4	10.7	10.2	11.8	25.8	43.5	50.5
-55°	15.0	14.0	12.9	11.8	10.7	10.2	10.7	16.1	32.2	45.6	51.0
-65°	10.7	10.2	9.7	9.7	9.7	11.8	17.2	28.5	41.4	48.3	51.0
-75°	8.1	8.6	10.7	15.6	22.0	30.1	36.0	43.5	47.8	50.5	51.6
-85°	38.7	42.4	45.1	46.7	48.3	49.4	50.5	51.0	51.0	51.6	51.6
-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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CATALOG NUMBER: VFS-K-B20-3-LED-E1-NSR-SG

CANDELA DISTRIBUTION (continued):

	90°
90°	0.0
85°	0.0
75°	0.0
65°	0.0
55°	0.0
47.5°	0.0
42.5°	0.0
37.5°	0.0
33°	0.0
29°	0.0
25.5°	0.0
22.5°	0.0
19.5°	0.0
17°	0.0
15°	0.0
13°	0.0
11°	0.0
9°	0.0
7°	0.0
5°	0.0
3°	0.0
1°	0.0
0°	0.0
-1°	0.0
-3°	0.0
-5°	0.0
-7°	0.0
-9°	0.0
-11°	0.0
-13°	0.0
-15°	0.0
-17°	0.0
-19.5°	0.0
-22.5°	0.0
-25.5°	0.0
-29°	0.0
-33°	0.0
-37.5°	0.0
-42.5°	0.0
-47.5°	0.0
-55°	0.0
-65°	0.0
-75°	0.0
-85°	0.0
-90°	0.0

(END OF REPORT)