

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: NEO-RAY

Report Number: P243170

Luminaire Tested: **S122DR-H485D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243170  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-H485D935-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

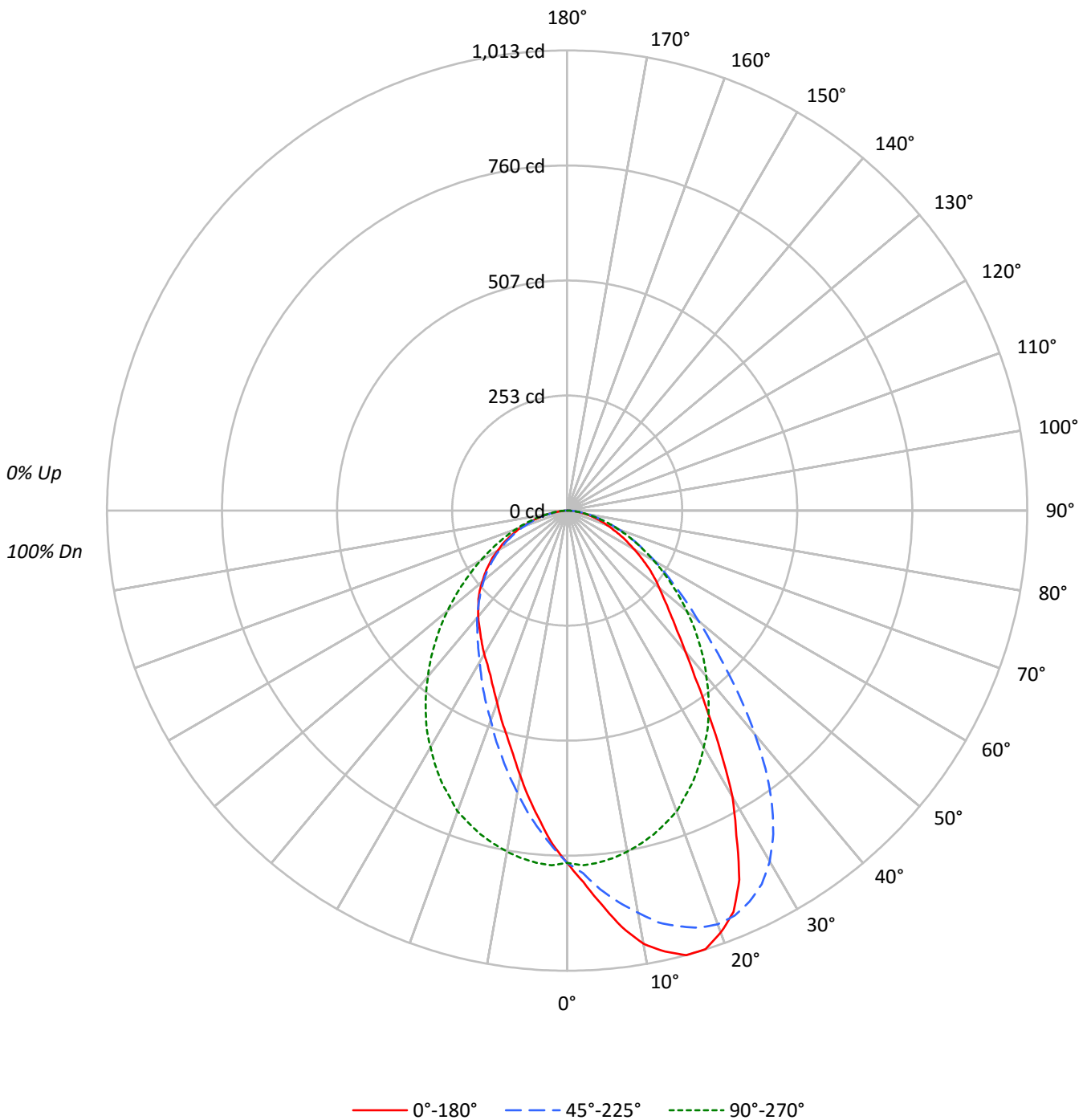
Lumens per Lamp: N/A  
Luminaire Lumens: 1721.0 lumens  
Efficiency: N/A  
Efficacy: 100.1 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 17.2  
Input Voltage (V): 120  
Input Current (Ain): 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



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88				86	
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76				74	
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66				63	
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57				55	
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51				49	
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45				43	
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40				39	
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37				35	
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33				32	
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31				29	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	14773	14773	14773
5°	16641	14880	13107
10°	18732	14746	11470
15°	19982	14547	10110
20°	20039	14284	9124
25°	18846	13808	8409
30°	15999	13232	8030
35°	12508	12615	7729
40°	10050	11856	7579
45°	8644	11071	7437
50°	7844	10191	7230
55°	7226	9285	7034
60°	6495	8366	6712
65°	5846	7518	6391
70°	5213	6683	5981
75°	4688	5748	5240
80°	4091	4629	4091
85°	3519	3453	2251



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.9	4.3
10°-20°	212.4	12.3
20°-30°	308.9	17.9
30°-40°	331.3	19.3
40°-50°	296.9	17.3
50°-60°	236.7	13.8
60°-70°	160.1	9.3
70°-80°	81.7	4.7
80°-90°	19.1	1.1
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°-30°	595.1	34.6
0°-40°	926.4	53.8
0°-60°	1460.1	84.8
0°-90°	1721.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1721.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	776	776	776	776	776	
5°	870	837	778	705	686	86
15°	1013	948	738	558	513	284
25°	897	950	657	436	400	403
35°	538	786	542	344	332	341
45°	321	497	411	273	276	251
55°	218	289	280	206	212	194
65°	130	168	167	135	142	129
75°	64	80	78	67	71	68
85°	16	18	16	12	10	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6
2.5°	818.7	821.2	818.9	818.1	816.4	815.8	811.2	807.5	805.2	798.8	799.4
5°	870.3	876.1	872.9	872.6	866.3	862.3	858.3	852.5	843.9	837.0	831.6
7.5°	924.9	922.0	921.1	918.0	913.4	907.6	898.7	890.4	879.5	869.5	862.0
10°	968.5	967.6	969.1	961.0	958.2	949.3	941.5	928.6	914.5	898.7	889.0
12.5°	994.3	996.9	998.9	995.8	988.9	986.3	973.4	955.3	950.4	928.9	917.1
15°	1013.3	1014.4	1014.7	1011.3	1007.8	1001.2	993.5	982.0	966.2	947.5	938.6
17.5°	1012.1	1011.8	1013.6	1011.5	1009.5	1007.5	1001.5	992.6	980.3	962.7	947.8
20°	988.6	993.7	997.8	998.6	998.3	999.5	996.6	990.9	982.0	969.3	952.4
22.5°	956.4	954.4	963.0	962.5	966.2	974.8	978.5	976.2	972.8	964.8	951.3
25°	896.7	898.7	904.8	911.1	925.7	930.9	942.1	950.7	951.8	949.8	941.5
27.5°	807.2	821.5	824.7	833.0	853.4	870.3	893.0	906.5	925.7	927.4	923.7
30°	727.4	726.8	731.7	746.6	765.3	790.8	820.1	854.8	876.9	892.1	897.6
32.5°	629.2	631.5	644.1	662.5	681.4	707.0	740.9	783.3	812.9	844.5	862.3
35°	537.9	545.1	557.2	569.8	590.5	625.5	663.1	698.4	743.7	785.9	814.6
37.5°	462.7	472.5	481.7	493.7	513.8	540.8	574.7	621.5	666.5	717.3	759.5
40°	404.2	407.9	414.2	426.0	439.5	466.4	500.6	535.6	584.4	642.7	698.1
42.5°	358.2	357.4	364.3	371.7	384.1	404.2	434.0	469.0	517.5	569.2	625.2
45°	320.9	321.2	324.1	331.8	341.6	353.1	376.0	409.0	445.8	497.2	556.6
47.5°	290.5	291.4	295.7	301.1	306.9	317.5	332.7	354.2	388.7	431.7	487.4
50°	264.7	266.1	269.0	273.0	277.3	284.7	296.2	313.2	340.4	376.9	427.4
52.5°	241.7	242.3	243.1	246.9	250.3	257.2	265.8	279.0	300.5	331.0	370.3
55°	217.6	217.0	219.0	222.2	225.3	230.2	239.1	249.7	264.9	289.1	321.5
57.5°	192.9	193.8	195.2	196.9	202.7	207.8	214.4	224.2	236.2	255.2	282.2
60°	170.5	170.5	172.2	174.5	178.3	181.7	188.0	196.9	207.5	222.2	244.8
62.5°	148.7	149.8	151.6	152.7	156.2	160.5	165.3	172.2	182.0	193.8	210.7
65°	129.7	129.2	130.9	133.2	135.8	138.6	144.1	149.8	157.3	167.9	182.0
67.5°	110.2	111.9	112.5	113.7	115.7	119.4	122.0	128.0	134.0	143.5	155.3
70°	93.6	94.7	95.6	97.0	98.7	100.5	103.0	107.9	114.0	120.6	128.9
72.5°	78.7	79.5	78.7	80.1	80.9	82.7	86.1	88.4	93.0	98.7	106.2
75°	63.7	64.3	64.0	65.4	65.7	67.5	69.2	71.2	76.4	79.5	84.7
77.5°	49.9	50.5	50.8	51.4	52.0	52.8	53.7	55.7	58.6	61.4	65.4
80°	37.3	37.3	38.2	38.5	38.8	39.3	40.8	41.3	43.3	44.2	47.4
82.5°	25.8	26.1	26.4	26.4	26.7	27.3	27.6	28.7	29.3	30.7	32.1
85°	16.1	16.4	16.4	16.4	17.2	16.9	16.9	17.5	18.4	18.4	18.9
87.5°	8.0	8.3	8.3	8.3	8.6	8.6	8.6	8.6	8.6	9.2	8.9
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6
2.5°	799.1	798.8	797.7	792.5	788.5	783.3	782.5	781.6	774.4	766.7	764.4
5°	827.3	822.1	814.9	806.3	797.7	788.2	782.8	778.2	767.3	755.2	748.3
7.5°	854.8	844.8	833.6	820.1	805.7	790.5	780.8	771.6	756.6	740.9	731.4
10°	878.4	864.9	849.4	831.6	811.8	791.1	776.7	762.4	743.4	724.2	711.6
12.5°	897.9	880.7	860.3	836.2	818.1	789.7	769.6	750.6	729.7	704.7	690.9
15°	912.8	895.9	868.3	843.9	820.1	782.2	757.8	737.7	709.6	685.2	663.4
17.5°	930.9	906.8	879.5	844.5	818.1	774.7	747.2	721.1	690.6	661.9	637.8
20°	938.9	913.7	884.4	845.3	811.8	766.7	730.0	704.7	668.0	634.9	607.7
22.5°	940.1	916.0	884.1	842.8	800.9	754.9	712.7	679.7	643.0	608.0	577.2
25°	935.2	912.2	879.2	838.2	788.8	742.3	695.2	657.0	614.6	578.4	547.1
27.5°	922.0	903.3	872.0	828.1	776.5	722.8	671.4	629.8	587.9	546.8	517.0
30°	900.7	888.4	861.4	814.9	760.7	701.5	650.2	601.6	556.3	517.8	485.7
32.5°	873.5	867.4	845.1	799.1	744.6	678.3	624.6	574.7	525.3	488.8	455.8
35°	838.7	841.9	823.0	781.3	724.2	654.7	594.8	542.5	494.3	455.5	425.1
37.5°	793.7	809.2	797.1	758.1	698.1	630.9	563.5	510.9	460.4	423.1	396.4
40°	743.2	770.4	764.7	732.0	670.0	603.1	533.3	476.8	427.4	392.1	366.6
42.5°	683.7	723.4	729.7	700.1	642.1	568.3	499.5	444.9	397.3	362.5	338.1
45°	617.1	666.2	687.5	664.2	609.7	534.8	464.7	411.0	364.0	334.4	314.0
47.5°	550.3	609.4	638.1	626.9	571.8	498.9	430.3	377.8	333.3	307.4	288.2
50°	484.2	547.7	589.6	582.1	534.5	464.7	395.5	343.9	303.1	279.3	262.9
52.5°	426.3	486.3	531.9	535.6	492.9	425.7	358.8	310.9	276.1	254.6	240.8
55°	369.1	424.8	474.8	484.0	449.2	384.6	324.9	279.6	248.0	230.2	219.0
57.5°	318.0	368.6	418.2	434.3	406.2	347.9	288.5	248.6	221.3	207.5	197.8
60°	274.7	320.3	363.1	379.5	360.2	307.1	255.2	219.6	196.9	184.6	176.8
62.5°	236.8	272.1	310.0	328.1	315.2	269.0	223.6	192.0	173.7	163.0	157.0
65°	202.7	229.9	259.8	280.7	266.4	231.9	194.0	166.8	151.3	141.5	137.2
67.5°	171.1	193.8	217.6	234.2	227.1	195.8	163.9	142.7	129.7	122.3	118.3
70°	142.4	159.3	178.5	191.5	186.3	162.2	136.9	120.0	109.1	103.9	100.5
72.5°	116.8	127.7	142.4	153.0	147.5	130.6	112.5	99.0	91.0	85.0	82.4
75°	92.7	102.2	112.5	119.7	115.4	102.8	88.4	78.1	72.6	68.9	67.2
77.5°	70.3	77.8	85.0	88.4	86.4	77.2	67.5	59.4	54.8	52.5	50.5
80°	50.5	54.8	59.7	62.9	61.7	55.4	48.5	42.2	40.2	37.3	36.7
82.5°	33.9	37.3	38.5	39.9	39.0	36.2	31.3	27.6	25.8	24.4	24.1
85°	20.1	21.0	22.4	22.4	21.5	19.5	16.9	15.8	14.1	13.8	12.9
87.5°	8.9	8.9	8.9	8.9	8.9	8.3	7.2	6.6	6.0	5.7	5.5
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6	775.6
2.5°	762.4	759.5	755.5	750.9	746.9	740.6	738.6	738.6	740.0	738.3	736.8
5°	742.6	736.8	731.1	722.2	714.7	704.7	701.8	699.0	698.7	695.8	692.1
7.5°	721.3	712.7	701.0	688.3	680.3	669.4	663.4	661.6	656.2	651.0	645.0
10°	696.7	683.5	669.4	657.3	644.7	630.6	623.5	618.6	613.1	606.8	602.5
12.5°	666.8	651.9	639.0	624.9	614.3	594.5	592.2	585.9	575.0	565.5	562.0
15°	648.4	622.3	607.7	594.8	578.7	558.3	550.8	543.9	533.6	527.6	522.7
17.5°	616.0	592.5	574.1	556.9	541.4	525.6	514.4	508.6	500.3	495.2	490.3
20°	586.4	560.9	541.7	521.6	505.5	491.1	481.7	474.5	470.2	465.0	460.1
22.5°	556.6	529.9	511.5	491.1	472.2	463.6	452.4	446.4	440.6	436.6	431.4
25°	521.8	500.6	477.6	461.9	445.2	436.3	425.7	419.9	415.4	410.8	408.2
27.5°	490.8	469.3	448.1	432.3	418.2	409.6	403.0	397.6	391.8	388.4	386.4
30°	458.7	438.9	420.2	405.0	394.1	384.6	380.6	375.5	371.1	369.7	366.6
32.5°	430.0	407.9	393.0	379.2	370.0	363.4	360.5	355.1	354.2	352.8	351.1
35°	401.3	382.3	368.0	356.2	348.5	343.6	339.9	338.4	337.0	335.6	334.1
37.5°	372.9	357.9	344.5	335.0	328.7	324.9	324.1	321.2	320.9	318.9	318.9
40°	347.3	332.1	322.6	315.2	310.0	308.3	306.0	305.4	304.6	304.0	305.1
42.5°	321.8	311.4	303.4	295.7	291.6	290.2	289.6	288.8	288.2	289.9	290.5
45°	298.0	289.1	282.2	276.7	274.4	272.7	272.7	273.6	273.3	274.1	274.1
47.5°	275.8	267.8	262.1	260.1	257.2	256.6	256.9	256.6	258.1	259.2	260.3
50°	254.9	247.7	243.1	241.1	240.5	239.7	240.8	241.4	242.3	243.4	244.0
52.5°	231.6	228.2	225.3	223.3	223.0	223.3	223.0	225.0	225.9	227.6	227.3
55°	211.8	209.3	207.2	204.9	204.7	205.5	206.1	207.8	209.0	210.4	210.1
57.5°	193.2	191.2	188.9	188.3	188.0	188.3	190.9	190.6	192.3	193.5	194.0
60°	172.8	171.4	169.4	169.4	170.2	170.8	171.7	173.1	174.8	174.5	176.5
62.5°	154.1	152.4	151.8	152.7	152.4	153.9	154.7	154.7	157.0	157.9	158.4
65°	135.5	134.9	134.0	134.0	134.9	135.2	136.6	137.5	138.4	140.1	141.5
67.5°	118.0	116.5	116.5	116.0	117.1	118.0	118.8	120.0	120.6	122.6	123.4
70°	99.6	99.0	98.7	99.3	99.3	100.2	101.6	103.0	104.2	104.5	106.2
72.5°	81.8	81.8	81.8	82.7	83.2	84.1	84.4	85.5	87.3	87.5	88.4
75°	65.7	66.0	65.7	66.0	66.3	67.2	67.7	68.9	70.0	70.3	70.9
77.5°	50.8	50.2	49.7	50.5	51.1	52.8	52.5	53.1	54.3	53.7	54.3
80°	35.6	36.5	35.3	37.0	37.0	36.7	37.3	38.2	37.9	38.5	37.9
82.5°	24.1	23.3	23.3	24.1	24.4	23.5	24.1	24.4	24.7	24.1	23.8
85°	13.2	12.9	13.5	12.6	12.9	12.3	12.3	11.8	12.3	11.8	11.2
87.5°	4.9	4.6	4.9	4.0	3.7	3.4	3.2	3.2	2.6	2.6	2.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P243170

CATALOG NUMBER: S122DR-H485D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	775.6	775.6	775.6	775.6
2.5°	738.9	735.7	734.3	735.4
5°	688.0	688.9	683.7	685.5
7.5°	644.1	640.4	641.5	639.5
10°	597.6	595.6	592.5	593.0
12.5°	566.3	552.8	552.0	549.4
15°	522.4	515.0	513.2	512.7
17.5°	487.4	481.1	483.4	481.7
20°	455.8	456.1	452.4	450.1
22.5°	428.0	427.4	426.0	423.7
25°	404.4	404.4	401.0	400.1
27.5°	382.9	383.5	380.6	380.6
30°	366.8	364.8	364.5	365.1
32.5°	350.8	348.5	348.8	348.5
35°	333.5	334.1	333.3	332.4
37.5°	318.9	318.9	318.9	318.0
40°	304.6	305.1	304.3	304.8
42.5°	290.2	290.5	290.5	289.3
45°	275.8	275.6	275.0	276.1
47.5°	260.9	260.9	260.6	261.2
50°	244.6	245.1	244.3	244.0
52.5°	227.9	228.2	227.9	228.5
55°	211.0	211.0	211.3	211.8
57.5°	193.5	195.5	194.0	195.2
60°	176.2	176.5	176.8	176.2
62.5°	159.9	159.6	159.9	160.7
65°	142.1	142.7	142.4	141.8
67.5°	124.6	124.0	124.9	124.0
70°	105.9	107.1	106.2	107.4
72.5°	89.0	88.7	89.3	87.8
75°	71.2	71.2	71.5	71.2
77.5°	54.5	54.0	53.7	52.8
80°	37.6	37.6	36.5	37.3
82.5°	23.0	23.3	23.5	21.8
85°	10.9	10.9	10.6	10.3
87.5°	2.3	2.3	2.6	2.9
90°	0.0	0.0	0.0	0.0

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