

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: P243509

Luminaire Tested: **S124DR-H575D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243509
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-60)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DR-H575D930-X4F0-XX-UDD-A-W
Description: DEFINE 4 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1909.2 lumens
Efficiency: N/A
Efficacy: 111.0 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.22 / 1.45
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

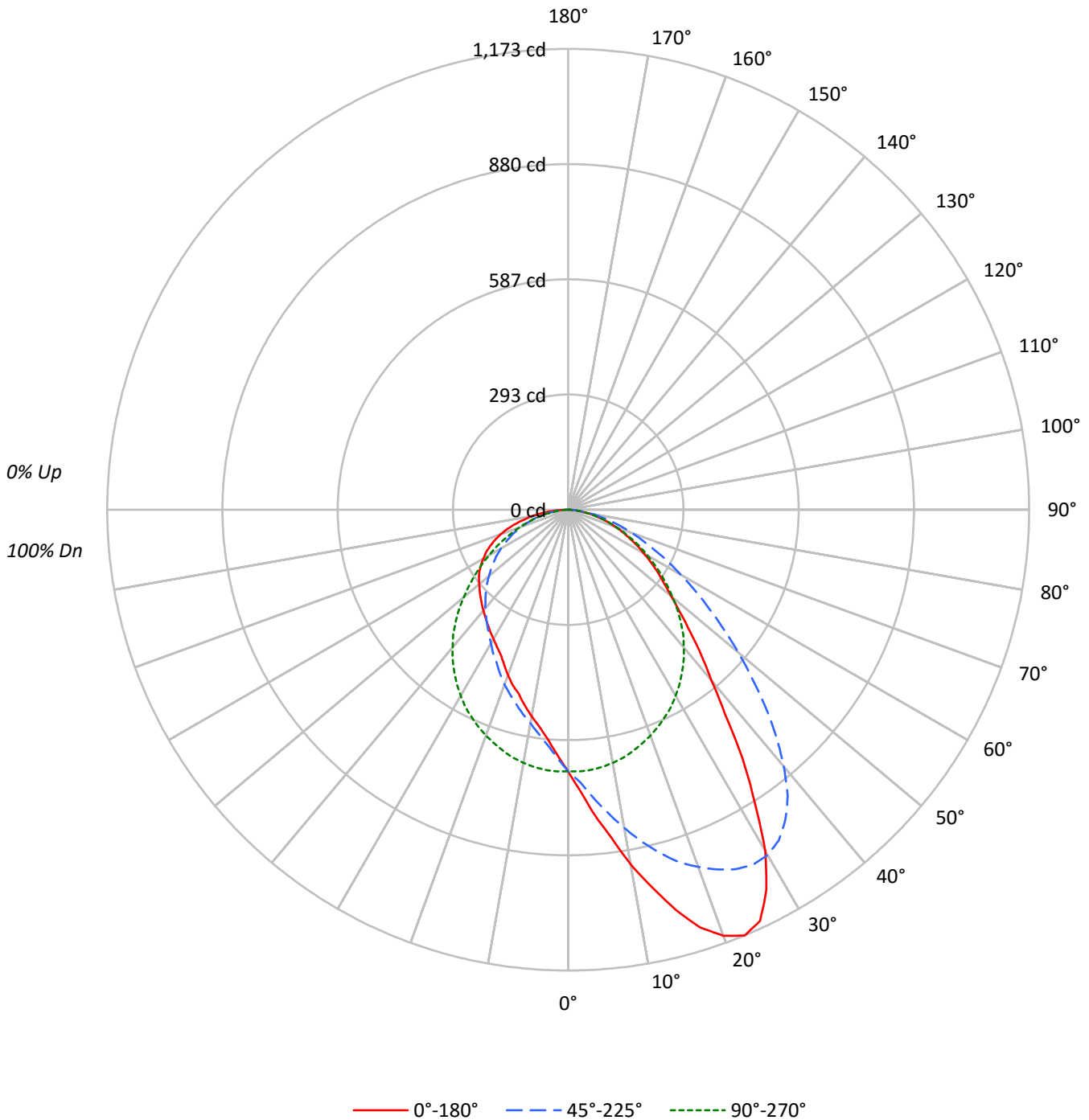
Input Watts (W): 17.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20				20			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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	
1	109	105	101	97	107	103	99	96	98	95	93	94	92	90	91	89	87	85	85	
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72	72	
3	92	81	74	67	89	80	73	67	77	71	66	74	69	64	72	67	63	61	61	
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53	53	
5	78	65	56	50	75	64	56	50	62	55	49	60	54	49	58	53	48	46	46	
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41	41	
7	67	53	45	39	65	53	45	39	51	44	38	50	43	38	48	42	38	36	36	
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	44	39	34	32	32	
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29	29	
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26	26	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	5918	5918	5918
5°	6964	5934	5238
10°	8277	5907	4823
15°	9694	5855	4467
20°	10915	5787	4237
25°	11328	5709	3988
30°	10288	5612	3899
35°	8394	5480	3875
40°	6572	5308	3892
45°	5501	5094	3964
50°	4720	4796	4081
55°	4313	4473	4279
60°	3952	4140	4436
65°	3624	3790	4606
70°	3334	3418	4746
75°	2967	3005	4743
80°	2478	2462	4730
85°	1887	1856	4437



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.8	3.4
10°-20°	200.7	10.5
20°-30°	322.5	16.9
30°-40°	368.6	19.3
40°-50°	339.3	17.8
50°-60°	277.6	14.5
60°-70°	197.8	10.4
70°-80°	108.7	5.7
80°-90°	29.2	1.5
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°	588.0	30.8
0°-40°	956.6	50.1
0°-60°	1573.5	82.4
0°-90°	1909.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1909.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	666	666	666	666	666	
5°	780	736	665	601	587	78
15°	1053	905	636	512	485	300
25°	1155	1010	582	430	407	518
35°	774	964	505	359	357	481
45°	438	710	405	296	315	342
55°	278	436	289	231	276	250
65°	172	242	180	162	219	172
75°	86	112	88	89	138	92
85°	18	23	18	25	44	22
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°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	716.9	714.8	713.7	712.3	712.0	710.7	708.0	704.2	699.3	694.1	694.1
5°	780.5	780.0	775.9	776.2	771.0	765.3	761.0	755.5	744.9	736.0	729.7
7.5°	841.4	847.1	845.8	841.4	833.8	825.6	816.9	809.3	789.8	778.9	769.9
10°	917.0	919.1	915.3	909.1	902.3	886.5	875.1	862.3	841.1	822.7	806.3
12.5°	983.3	988.4	981.6	975.7	959.6	947.9	936.5	911.0	888.7	865.3	841.7
15°	1053.4	1048.0	1051.5	1036.8	1025.4	1014.3	985.2	959.1	933.8	905.0	880.3
17.5°	1114.3	1114.3	1107.7	1098.2	1086.3	1065.3	1036.3	1007.5	979.5	941.7	906.6
20°	1153.9	1156.9	1149.3	1139.3	1124.9	1103.1	1080.0	1048.8	1011.5	967.5	927.8
22.5°	1173.0	1173.5	1170.8	1162.4	1150.7	1132.2	1108.6	1078.1	1038.7	991.4	949.8
25°	1155.0	1158.0	1157.2	1156.7	1150.7	1140.1	1121.1	1092.8	1056.9	1009.6	964.8
27.5°	1092.0	1099.3	1105.6	1108.3	1114.8	1115.4	1109.6	1092.5	1063.2	1018.6	968.6
30°	1002.3	998.5	1015.3	1023.8	1046.1	1059.4	1068.9	1067.8	1050.9	1014.8	967.2
32.5°	882.7	893.0	905.0	924.8	951.2	982.2	1005.6	1023.0	1021.3	997.7	958.0
35°	773.5	773.5	788.7	813.1	841.1	878.4	917.5	949.8	969.7	963.7	935.7
37.5°	655.0	662.3	679.7	698.7	733.0	768.8	820.5	863.4	905.0	917.5	903.1
40°	566.4	569.6	588.1	604.2	639.2	676.4	719.7	774.6	822.4	853.1	855.0
42.5°	500.6	500.3	507.9	522.3	550.6	583.8	630.5	684.3	740.3	783.8	804.2
45°	437.6	437.0	444.9	459.6	479.7	509.0	549.5	603.3	660.7	710.1	742.2
47.5°	384.3	389.2	392.7	404.1	420.7	445.7	480.5	523.4	578.6	634.0	677.3
50°	341.3	343.5	351.1	356.6	375.0	392.4	420.4	459.0	506.3	564.5	611.2
52.5°	307.1	308.5	313.1	320.1	330.7	346.0	368.3	403.9	446.5	497.1	545.4
55°	278.3	277.5	280.5	285.1	294.3	307.1	323.4	350.6	387.8	436.5	481.0
57.5°	250.0	250.0	252.7	256.0	261.2	271.8	287.8	309.3	339.2	382.4	421.8
60°	222.3	224.2	225.3	228.6	232.9	240.8	252.7	269.6	294.9	330.2	369.3
62.5°	197.9	197.9	199.8	200.8	206.5	212.3	221.0	235.4	255.2	286.7	317.2
65°	172.3	173.9	173.9	176.1	181.0	185.3	192.1	203.0	219.3	241.9	270.4
67.5°	150.6	150.6	151.9	153.0	155.7	158.7	164.7	173.1	187.0	204.9	230.7
70°	128.3	129.1	128.5	129.9	131.5	134.5	138.9	145.9	156.0	171.5	190.5
72.5°	108.2	107.1	107.6	109.0	109.8	111.7	114.4	119.9	128.0	140.5	154.4
75°	86.4	85.9	87.8	87.2	88.6	90.2	92.7	96.8	103.0	111.7	122.3
77.5°	67.4	66.6	67.4	67.9	68.5	69.8	71.7	74.2	78.5	84.2	93.8
80°	48.4	48.1	48.6	49.2	49.5	51.6	52.2	54.6	56.5	60.9	65.5
82.5°	32.1	32.6	32.9	33.4	33.2	34.2	34.8	36.4	38.0	40.2	43.8
85°	18.5	17.7	18.5	18.5	18.5	19.8	19.6	20.7	21.7	22.8	25.3
87.5°	6.5	6.5	6.8	7.1	7.1	7.9	7.6	8.2	9.2	9.2	10.1
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	692.5	689.5	687.3	681.1	677.3	673.7	670.5	666.9	663.1	658.2	655.2
5°	723.2	716.7	707.2	698.5	688.7	680.0	672.9	665.0	656.3	647.4	639.5
7.5°	757.2	744.9	730.3	714.2	699.0	686.2	672.9	660.4	648.2	636.2	625.1
10°	791.1	769.9	750.6	728.6	708.5	689.2	671.8	654.4	639.2	623.4	609.3
12.5°	822.7	797.1	768.8	741.4	714.5	689.5	668.0	646.8	627.3	608.5	591.9
15°	846.8	814.8	781.3	748.7	717.8	691.7	663.7	636.2	615.8	593.0	574.8
17.5°	874.6	836.5	803.4	764.2	725.6	683.5	653.9	624.0	599.5	577.5	559.3
20°	893.0	851.2	803.4	759.1	719.4	681.6	646.0	611.8	585.9	560.4	538.4
22.5°	907.7	864.5	811.8	765.6	715.8	670.2	631.6	597.9	567.5	543.3	522.3
25°	915.3	862.6	812.3	756.3	706.6	662.9	619.4	582.1	551.4	524.5	506.6
27.5°	915.6	861.5	802.0	746.6	693.3	646.0	603.1	566.4	531.9	506.0	484.6
30°	914.2	854.5	791.7	731.1	678.1	629.7	584.9	546.8	515.3	487.8	467.4
32.5°	905.5	844.7	776.2	712.6	655.0	606.3	565.0	527.2	493.5	468.5	447.1
35°	886.0	823.2	754.4	688.9	634.3	583.8	543.0	505.0	474.8	447.6	425.6
37.5°	861.0	802.3	732.4	663.9	605.0	557.1	518.8	482.9	451.4	426.4	404.4
40°	829.5	774.3	705.5	634.3	575.3	527.0	490.8	457.4	430.5	404.9	383.5
42.5°	786.2	743.8	673.2	603.9	542.2	496.5	461.5	433.7	406.0	382.9	361.5
45°	740.0	701.4	638.7	569.9	510.7	463.6	430.8	405.2	381.6	358.2	340.8
47.5°	688.9	657.4	599.3	532.1	473.7	432.1	399.8	376.9	355.2	337.3	319.9
50°	628.1	611.5	557.1	496.3	439.5	396.8	370.2	346.8	330.7	313.4	297.0
52.5°	571.5	558.2	513.9	454.1	402.5	365.0	336.5	318.0	302.2	289.4	276.4
55°	510.1	503.3	465.8	414.2	367.4	329.9	305.5	288.6	276.1	264.2	254.7
57.5°	453.6	453.0	419.9	375.6	329.9	298.1	274.8	260.9	250.0	241.6	233.5
60°	395.7	400.3	373.1	332.6	296.5	266.6	245.4	232.9	225.6	217.7	210.9
62.5°	343.2	350.3	325.6	293.8	258.2	233.7	217.4	207.9	199.8	194.0	188.9
65°	293.0	301.9	281.8	253.3	226.1	203.0	189.2	180.2	173.9	170.7	167.1
67.5°	248.7	253.6	240.0	217.7	195.1	175.0	163.6	155.7	150.3	148.9	144.9
70°	204.4	210.1	200.6	180.2	162.8	148.1	137.8	131.5	128.3	126.4	123.7
72.5°	168.8	171.2	161.7	147.6	133.7	121.5	113.9	109.3	105.4	104.6	103.3
75°	132.1	135.6	128.0	117.1	105.7	97.0	91.3	87.5	85.6	84.2	84.2
77.5°	99.7	102.7	98.4	88.9	82.1	74.5	70.7	67.1	66.3	65.0	65.5
80°	70.9	72.3	69.8	63.3	57.3	53.3	50.0	48.1	47.8	46.7	47.8
82.5°	47.0	47.3	44.6	41.6	37.0	34.8	32.6	31.8	31.5	31.5	31.0
85°	26.1	26.6	24.7	22.8	21.2	19.3	18.8	18.2	17.7	18.5	19.0
87.5°	10.1	10.3	10.1	9.2	8.7	8.2	7.9	8.4	7.6	8.2	8.4
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°	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8	665.8
2.5°	650.6	648.4	645.2	639.8	635.9	631.9	630.2	630.8	629.2	627.0	627.5
5°	633.5	627.3	621.8	614.2	607.1	601.2	599.3	596.8	594.6	593.3	591.9
7.5°	615.3	606.6	598.4	590.8	582.7	575.1	572.1	569.9	568.8	565.0	563.4
10°	597.9	587.8	578.1	569.1	560.7	552.2	549.3	546.5	542.7	541.1	539.2
12.5°	579.4	569.4	558.8	547.9	539.5	532.7	527.5	525.6	521.8	520.2	519.1
15°	561.5	549.3	540.8	532.4	519.6	512.0	509.8	503.1	500.9	497.6	495.4
17.5°	543.5	532.1	519.6	509.8	502.0	492.5	487.3	484.3	480.2	477.2	473.2
20°	525.9	512.6	502.8	490.5	481.9	473.2	466.6	463.9	460.4	456.3	450.6
22.5°	508.8	494.1	484.6	473.2	462.3	452.2	446.8	443.0	435.9	435.1	429.9
25°	488.6	475.6	463.1	451.1	440.5	430.5	427.0	421.0	418.5	413.6	412.8
27.5°	469.6	455.8	442.2	429.1	419.9	412.8	406.6	402.8	400.3	396.5	396.8
30°	449.8	434.6	421.8	409.8	399.8	393.0	388.9	387.0	383.5	382.9	381.0
32.5°	428.6	414.7	401.4	390.8	380.5	374.5	372.6	370.7	368.5	368.8	368.3
35°	407.4	395.2	381.0	371.2	362.8	359.3	356.3	355.8	354.9	355.5	355.5
37.5°	386.7	373.4	361.7	352.8	347.9	343.0	341.6	341.3	341.6	342.2	343.5
40°	366.6	354.4	343.0	335.6	330.2	328.0	326.1	326.9	328.0	329.9	331.6
42.5°	346.5	334.8	325.3	318.0	312.8	311.7	312.0	313.6	313.9	316.6	319.6
45°	325.3	315.3	306.3	300.6	297.3	296.0	296.5	298.1	300.0	303.8	307.6
47.5°	305.7	296.8	288.9	283.2	280.7	280.2	281.3	283.5	287.8	291.6	296.0
50°	285.9	277.8	270.4	265.3	265.0	263.1	265.5	268.2	273.4	278.6	285.1
52.5°	266.3	258.5	252.2	248.1	247.0	247.0	250.0	254.9	259.5	266.3	272.3
55°	246.0	238.9	232.9	231.6	229.9	230.7	234.0	238.9	245.4	253.0	259.5
57.5°	225.0	219.0	214.7	212.8	212.0	214.7	218.5	223.7	232.1	239.7	246.8
60°	205.2	200.0	195.4	194.9	194.3	197.9	202.5	207.9	216.3	223.9	232.6
62.5°	184.0	179.9	176.9	176.1	176.1	179.6	184.8	191.9	199.8	207.9	217.1
65°	162.5	159.0	158.2	157.1	159.5	161.7	166.9	173.7	182.1	191.1	200.8
67.5°	142.7	140.5	138.9	138.9	140.8	144.9	149.5	156.3	165.0	174.5	183.2
70°	122.8	120.7	119.3	120.7	121.8	126.6	131.5	138.1	146.2	155.5	164.7
72.5°	102.2	102.5	102.7	102.5	103.5	108.2	113.1	119.3	127.2	136.2	144.6
75°	84.0	82.6	82.9	83.4	87.0	89.4	94.3	100.3	108.7	116.9	123.9
77.5°	65.2	64.7	66.0	66.0	69.3	72.3	76.4	82.3	89.7	97.0	102.7
80°	47.8	48.1	49.2	49.5	52.2	55.4	59.8	63.9	70.4	75.6	81.0
82.5°	32.3	32.9	34.2	36.1	37.2	39.1	42.9	47.3	51.9	57.3	60.6
85°	18.8	19.6	20.7	22.0	23.1	25.0	27.7	31.3	34.5	37.5	40.2
87.5°	9.2	9.2	10.1	10.6	11.4	12.5	14.4	15.8	17.9	20.1	21.2
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: P243509

CATALOG NUMBER: S124DR-H575D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	665.8	665.8	665.8	665.8
2.5°	626.4	626.2	625.1	625.6
5°	591.1	588.4	588.1	587.0
7.5°	560.7	559.9	559.9	557.7
10°	537.3	534.8	535.4	534.3
12.5°	515.0	513.7	512.0	510.4
15°	490.0	490.0	490.0	485.4
17.5°	470.4	470.2	468.8	468.5
20°	450.1	449.0	445.4	447.9
22.5°	429.4	428.6	425.6	426.1
25°	410.1	409.3	408.7	406.6
27.5°	393.5	393.8	394.3	393.0
30°	381.0	380.2	381.3	379.9
32.5°	369.3	369.3	368.3	368.5
35°	356.0	357.1	357.4	357.1
37.5°	344.3	345.7	346.8	345.7
40°	333.5	334.6	335.6	335.4
42.5°	322.1	324.0	324.8	325.6
45°	311.2	313.6	315.0	315.3
47.5°	300.0	303.0	305.7	305.5
50°	289.2	293.0	295.4	295.1
52.5°	278.3	282.1	285.1	286.4
55°	266.1	271.0	273.7	276.1
57.5°	253.8	259.3	262.0	263.1
60°	240.2	245.1	248.7	249.5
62.5°	225.0	230.2	234.8	235.9
65°	209.3	215.0	218.5	219.0
67.5°	191.1	196.5	200.0	201.7
70°	172.3	176.4	180.2	182.6
72.5°	151.4	156.3	159.8	161.4
75°	129.6	135.1	137.0	138.1
77.5°	107.1	110.3	113.3	113.6
80°	84.5	88.6	89.7	92.4
82.5°	62.2	66.0	65.2	66.3
85°	41.0	42.4	43.2	43.5
87.5°	21.7	22.6	23.1	23.4
90°	0.0	0.0	0.0	0.0

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