

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: P242731

Luminaire Tested: **S124RDR-S350D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242731  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-31)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDR-S350D927-X4F0-XX-UDD-A-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

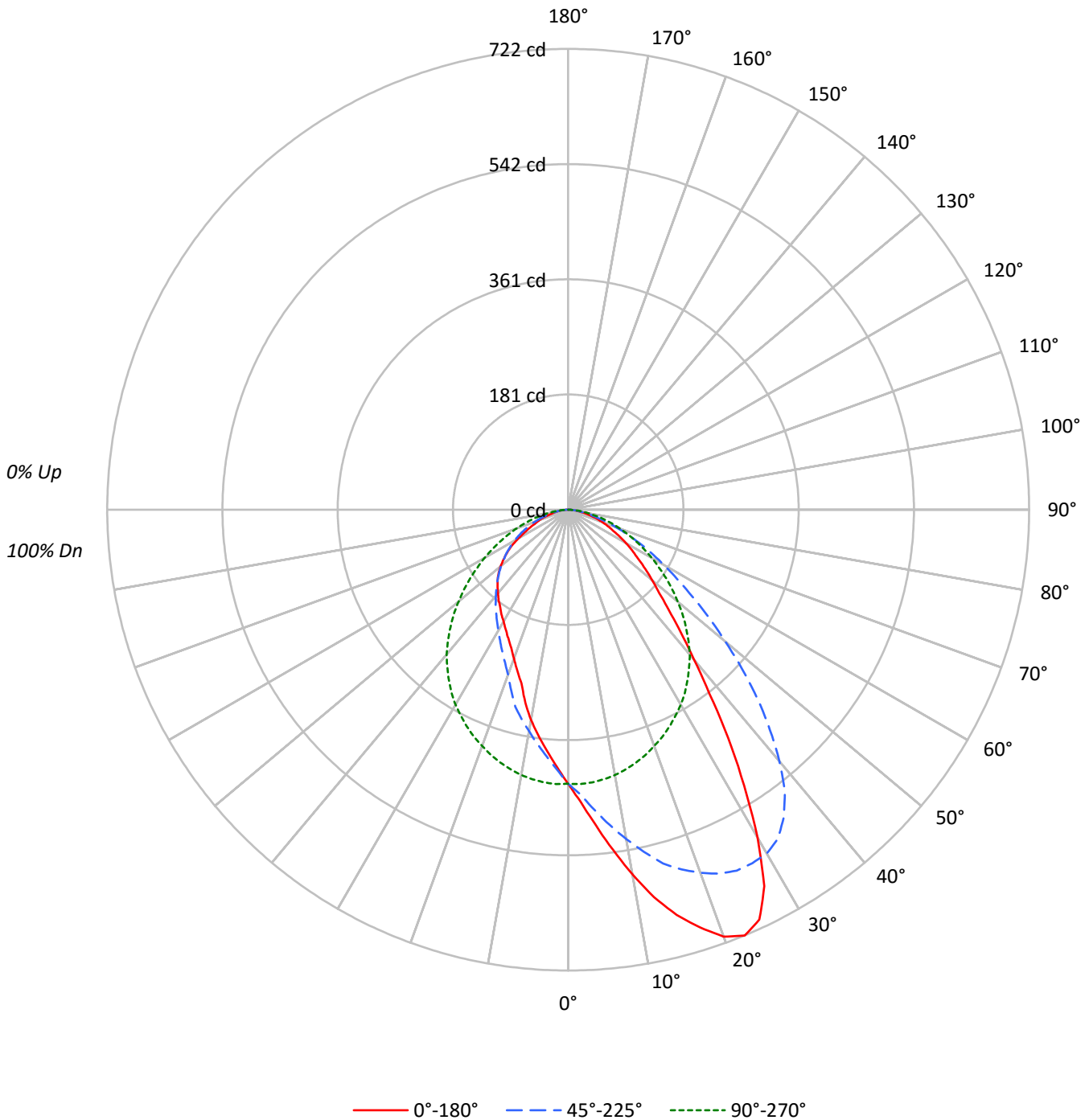
Lumens per Lamp: N/A  
Luminaire Lumens: 1085.1 lumens  
Efficiency: N/A  
Efficacy: 93.5 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.39  
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.6  
Input Voltage (V): 120  
Input Current (Ain): 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



TEST NUMBER: P242731

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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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	81	75	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	59	71	64	59	68	63	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	66	54	47	41	53	46	41	52	45	40	50	44	40	38
8	64	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	35	30	55	43	35	30	42	35	30	41	34	30	40	34	30	28

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

	0°	90°	180°
0°	3815	3815	3815
5°	4426	3827	3383
10°	5236	3811	3019
15°	6048	3775	2594
20°	6733	3727	2346
25°	6951	3679	2178
30°	6085	3621	2076
35°	4737	3535	2015
40°	3552	3438	1983
45°	2805	3281	1965
50°	2367	3099	1908
55°	2064	2900	1807
60°	1858	2693	1598
65°	1636	2469	1376
70°	1474	2238	1240
75°	1236	1985	1058
80°	1044	1689	993
85°	877	1326	877



TEST NUMBER: P242731

CATALOG NUMBER: S124RDR-S350D927-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.6	3.8
10°-20°	125.5	11.6
20°-30°	196.6	18.1
30°-40°	218.3	20.1
40°-50°	193.5	17.8
50°-60°	150.8	13.9
60°-70°	98.6	9.1
70°-80°	48.4	4.5
80°-90°	11.8	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°	363.7	33.5
0°-40°	582.0	53.6
0°-60°	926.3	85.4
0°-90°	1085.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1085.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	429	429	429	429	429	
5°	496	472	429	388	379	50
15°	657	574	410	320	282	187
25°	709	624	375	244	222	316
35°	436	588	326	196	186	273
45°	223	419	261	156	156	176
55°	133	237	187	118	117	121
65°	78	122	117	76	65	78
75°	36	46	58	37	31	40
85°	9	9	13	9	9	10
90°	0	0	0	0	0	



TEST NUMBER: P242731

CATALOG NUMBER: S124RDR-S350D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2
2.5°	458.6	460.2	458.6	458.5	456.7	456.2	455.5	453.3	449.1	446.7	447.2
5°	496.0	500.3	497.9	497.6	493.8	489.9	487.5	482.0	476.1	472.1	468.8
7.5°	537.5	540.1	538.4	536.5	529.9	527.8	522.1	515.5	505.7	498.2	491.5
10°	580.1	582.1	581.4	576.9	572.4	563.3	558.1	547.9	534.6	524.0	514.2
12.5°	621.9	624.2	616.7	618.1	608.6	601.8	592.8	579.4	563.4	549.1	536.1
15°	657.2	654.4	654.4	651.0	641.4	631.4	622.9	609.5	590.1	573.8	556.7
17.5°	686.2	687.4	686.1	677.2	670.3	660.1	644.9	629.5	612.7	590.9	574.0
20°	711.8	711.8	710.3	704.7	695.1	684.0	667.2	650.1	627.3	605.3	585.6
22.5°	722.2	722.9	721.0	716.7	708.2	697.5	683.8	666.4	642.7	617.2	591.6
25°	708.7	712.0	712.4	711.1	708.5	702.0	689.7	671.9	650.8	624.0	597.7
27.5°	665.1	669.5	671.2	675.0	682.1	684.7	683.1	671.2	650.8	624.3	598.2
30°	592.8	596.3	607.5	622.2	633.7	644.0	653.0	655.5	645.1	621.9	594.1
32.5°	512.6	517.6	528.9	544.9	565.9	585.2	608.2	620.5	622.8	611.2	585.9
35°	436.5	440.0	450.3	466.9	489.8	515.9	547.9	572.8	589.7	588.5	572.8
37.5°	363.5	368.4	378.9	392.6	415.1	448.4	478.7	512.1	542.5	557.4	549.4
40°	306.1	306.3	316.5	330.7	351.4	379.6	413.3	451.4	486.3	514.9	520.4
42.5°	260.8	260.8	266.7	282.2	295.7	321.8	353.7	391.4	433.7	467.8	484.8
45°	223.1	224.7	230.2	239.4	251.1	273.6	299.4	334.5	380.3	419.4	443.8
47.5°	193.4	196.1	199.4	207.7	217.4	233.1	255.1	288.0	326.0	369.4	403.1
50°	171.2	171.6	176.1	180.2	188.3	200.3	218.9	245.2	279.5	320.8	359.4
52.5°	152.2	152.0	154.3	159.8	166.0	174.7	188.9	212.2	241.6	277.6	317.7
55°	133.2	134.0	136.1	140.3	145.3	151.8	163.8	181.8	205.6	237.3	273.4
57.5°	118.6	119.2	121.1	122.6	127.5	132.3	142.0	155.0	175.9	202.3	237.8
60°	104.5	104.6	105.1	107.7	111.4	115.9	121.9	132.5	149.4	173.1	199.7
62.5°	90.6	91.0	91.8	93.6	96.2	98.9	105.3	113.3	126.6	146.0	169.3
65°	77.8	78.0	79.2	79.9	82.1	84.9	89.6	95.3	105.0	121.9	140.1
67.5°	67.1	67.1	67.1	68.1	69.9	71.8	74.9	79.7	87.5	98.4	115.4
70°	56.7	56.7	57.1	57.6	58.5	60.0	61.6	65.0	70.4	78.9	91.1
72.5°	47.0	47.2	47.6	47.6	47.9	49.1	50.2	52.1	55.7	61.6	70.9
75°	36.0	36.5	37.4	38.0	38.9	38.7	39.9	41.3	42.5	46.3	52.1
77.5°	28.4	28.0	28.0	28.7	28.9	29.1	29.9	31.1	32.2	34.2	36.3
80°	20.4	20.4	20.9	21.1	20.9	21.1	22.0	22.5	22.8	23.5	25.4
82.5°	14.2	14.5	14.2	14.4	14.5	14.7	15.4	15.4	15.7	15.9	16.4
85°	8.6	8.8	9.0	8.6	8.6	8.6	9.0	9.2	9.5	9.3	9.7
87.5°	3.8	3.6	3.8	3.8	4.0	3.8	4.0	4.3	4.0	4.2	4.2
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: P242731

CATALOG NUMBER: S124RDR-S350D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2
2.5°	445.5	443.1	441.9	439.1	435.8	434.1	432.5	430.3	427.3	424.2	422.0
5°	464.7	460.5	455.4	449.1	443.6	438.2	433.6	428.9	423.5	418.0	412.5
7.5°	483.7	476.3	468.3	458.8	449.7	441.2	433.6	426.1	417.7	410.0	403.0
10°	503.8	492.7	480.4	467.5	454.5	443.3	432.2	422.2	411.1	401.2	392.9
12.5°	520.0	506.6	491.2	474.2	458.0	443.8	430.6	416.8	403.8	392.9	381.2
15°	538.4	520.6	500.7	481.3	461.1	442.6	425.4	410.2	395.9	380.8	370.3
17.5°	551.0	530.4	506.9	484.4	461.2	439.8	420.4	402.8	386.4	371.3	358.9
20°	562.1	538.7	511.9	485.5	458.6	435.3	414.0	394.0	376.8	360.2	347.3
22.5°	568.3	541.8	511.9	483.9	455.9	430.1	406.2	385.1	366.1	349.5	334.8
25°	568.6	541.0	511.0	479.2	448.8	422.0	397.8	375.1	354.4	337.8	322.5
27.5°	567.3	535.3	505.2	472.8	441.5	413.0	387.9	363.9	343.3	325.7	310.1
30°	563.1	528.2	495.3	461.4	429.6	402.4	375.6	352.8	331.2	312.7	296.9
32.5°	554.1	519.5	483.5	448.6	416.3	388.1	363.0	340.0	318.9	299.9	282.9
35°	541.7	506.6	468.2	432.5	400.9	371.8	348.0	325.8	305.6	285.4	267.7
37.5°	527.3	490.6	452.8	413.7	382.2	354.5	332.2	311.0	291.2	272.7	253.2
40°	505.2	472.5	433.0	394.3	361.8	335.3	315.1	296.3	276.4	258.0	238.5
42.5°	478.4	451.7	411.8	372.9	340.9	315.6	297.1	278.8	261.1	243.5	222.9
45°	447.9	426.8	389.5	352.1	319.8	294.5	277.2	261.0	245.1	228.1	208.9
47.5°	414.0	398.5	365.9	326.9	296.6	273.4	256.8	243.3	229.3	212.2	194.9
50°	378.4	369.2	338.1	303.2	274.6	253.7	236.6	224.1	212.9	196.6	181.6
52.5°	340.4	336.5	311.5	278.4	251.1	230.7	216.7	205.8	194.4	181.6	167.8
55°	301.6	304.2	281.9	253.0	227.1	209.8	196.5	187.1	177.4	166.0	155.1
57.5°	261.3	271.2	254.6	228.5	203.4	187.1	176.9	168.6	160.5	150.8	140.9
60°	225.9	233.8	225.3	203.0	181.8	166.9	157.6	151.5	143.4	134.7	127.6
62.5°	191.3	199.9	195.8	178.8	159.5	147.2	139.2	133.7	128.2	120.9	113.5
65°	163.4	169.0	166.5	154.1	140.1	129.2	121.6	117.4	111.9	106.4	99.8
67.5°	130.7	141.6	139.9	133.0	119.5	110.9	105.5	101.7	96.5	92.4	87.7
70°	102.9	112.8	112.6	107.2	100.7	92.7	89.2	86.1	81.6	77.7	74.0
72.5°	79.6	88.4	90.1	86.3	82.3	76.8	73.5	71.6	67.3	64.9	62.1
75°	59.0	65.5	67.3	67.3	65.2	62.1	59.1	57.8	54.7	52.2	50.5
77.5°	41.5	46.0	48.6	49.1	49.3	48.1	45.3	44.3	41.9	41.0	39.1
80°	27.3	30.1	33.2	34.2	35.1	34.8	33.7	33.0	30.8	29.9	29.2
82.5°	16.8	18.0	20.4	23.0	22.5	23.7	22.8	22.3	20.8	20.6	19.9
85°	9.9	10.0	10.4	11.9	12.8	13.1	13.3	13.0	12.5	12.5	11.2
87.5°	4.2	4.0	4.3	4.3	4.5	5.2	5.7	5.9	5.4	4.8	4.3
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: P242731

CATALOG NUMBER: S124RDR-S350D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2	429.2
2.5°	419.6	417.8	415.6	413.0	409.9	407.1	405.9	406.9	407.5	406.1	405.9
5°	408.7	404.3	400.9	395.7	391.5	388.1	385.7	384.6	385.0	382.2	381.5
7.5°	396.6	391.9	386.2	380.3	374.8	369.9	367.3	366.1	363.2	362.0	360.1
10°	385.0	378.1	372.5	365.3	358.7	352.6	349.7	347.3	344.3	342.9	340.0
12.5°	373.0	364.7	358.5	350.9	344.2	336.5	333.8	328.8	323.7	320.5	316.5
15°	362.0	352.3	344.8	335.9	327.9	319.6	312.2	303.9	300.7	294.2	290.4
17.5°	348.8	338.8	330.5	318.9	307.0	296.9	288.6	280.0	275.3	270.8	268.9
20°	335.9	326.9	314.1	300.1	286.4	275.0	268.6	263.4	258.2	255.3	253.2
22.5°	323.6	311.5	296.1	280.7	267.0	258.7	253.5	248.2	244.2	241.4	238.5
25°	309.6	294.5	278.8	261.5	252.2	244.4	238.5	234.2	231.6	227.9	226.6
27.5°	295.9	277.7	259.9	248.2	238.5	231.1	225.7	222.6	219.1	216.7	214.8
30°	279.6	261.1	245.6	234.5	224.7	218.8	214.6	210.8	208.2	206.3	204.9
32.5°	263.6	245.1	232.6	220.5	213.2	207.5	203.0	200.4	198.5	195.9	195.3
35°	248.2	231.7	220.3	209.6	201.7	196.5	193.0	190.1	188.3	187.6	187.1
37.5°	233.1	219.5	206.8	198.2	190.8	186.8	182.3	180.9	179.7	178.1	178.8
40°	218.9	206.3	195.4	186.1	180.4	175.9	173.5	171.7	170.7	170.7	170.7
42.5°	206.7	194.4	183.8	175.7	170.0	166.4	163.6	162.2	162.0	161.9	162.9
45°	193.9	182.5	171.7	164.8	160.0	156.2	154.6	153.4	153.4	154.1	154.3
47.5°	181.1	170.3	161.7	153.7	149.3	146.8	145.4	144.8	144.8	145.6	146.3
50°	169.5	158.9	150.5	143.5	139.4	137.1	135.9	135.6	135.9	135.9	137.1
52.5°	156.9	147.7	139.4	133.9	129.0	126.9	126.4	125.9	126.1	126.8	127.1
55°	144.6	136.1	128.2	122.6	119.2	117.8	116.2	116.4	116.0	116.4	116.4
57.5°	132.1	124.7	116.9	112.4	109.5	107.4	105.7	106.2	105.7	105.7	105.5
60°	120.2	111.9	106.0	102.0	98.6	96.8	95.3	95.6	95.1	94.8	94.1
62.5°	107.2	100.7	95.1	91.3	88.7	86.6	85.1	84.6	83.2	81.8	80.1
65°	94.8	89.1	84.1	80.4	77.8	76.3	75.1	74.0	71.4	68.7	67.3
67.5°	82.5	78.3	73.5	70.4	68.3	66.2	64.0	62.1	59.5	57.8	56.9
70°	70.7	66.8	62.8	59.8	57.6	55.7	53.1	51.9	50.2	49.5	48.6
72.5°	59.5	55.9	52.2	49.6	47.2	45.8	43.9	42.7	42.2	42.0	41.2
75°	48.1	45.1	42.4	39.9	38.0	37.0	36.1	35.3	34.9	33.4	32.5
77.5°	37.0	34.9	33.2	31.3	30.1	29.4	27.5	26.3	25.6	24.7	24.6
80°	27.3	25.9	24.2	23.2	21.3	20.6	19.9	19.7	19.5	19.4	19.2
82.5°	18.9	17.5	15.7	15.2	15.0	14.7	14.4	14.2	14.0	14.2	14.2
85°	10.4	9.7	9.7	9.5	9.3	9.2	9.0	9.0	8.8	9.0	8.8
87.5°	4.3	4.2	4.2	3.8	4.0	4.0	3.8	3.8	4.0	3.6	3.6
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: P242731

CATALOG NUMBER: S124RDR-S350D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	429.2	429.2	429.2	429.2
2.5°	404.9	405.2	404.0	403.6
5°	380.1	379.8	378.9	379.1
7.5°	358.7	357.5	358.3	357.0
10°	339.3	337.4	335.9	334.5
12.5°	312.9	311.3	309.0	309.9
15°	288.1	285.5	281.4	281.9
17.5°	266.0	266.3	263.9	264.6
20°	249.6	248.3	248.5	248.0
22.5°	238.1	236.6	235.0	233.8
25°	225.0	224.0	222.4	222.1
27.5°	213.4	213.2	212.5	211.7
30°	203.6	203.2	202.9	202.3
32.5°	194.7	194.6	194.2	194.4
35°	186.4	186.3	185.9	185.7
37.5°	178.7	179.2	178.8	178.8
40°	170.5	170.7	171.0	170.9
42.5°	163.8	163.8	164.3	163.6
45°	155.5	156.5	156.3	156.3
47.5°	146.7	147.9	148.0	148.0
50°	138.0	137.7	138.2	138.0
52.5°	127.5	127.6	127.5	127.3
55°	116.6	116.7	116.4	116.6
57.5°	105.0	104.3	104.8	104.5
60°	92.4	91.0	90.6	89.9
62.5°	78.2	77.3	75.9	76.8
65°	65.9	65.2	64.7	65.4
67.5°	56.0	55.7	55.7	55.3
70°	48.6	48.1	48.1	47.7
72.5°	41.0	40.5	40.6	40.5
75°	31.5	30.6	30.6	30.8
77.5°	24.6	24.4	24.7	24.2
80°	19.2	19.0	18.9	19.4
82.5°	13.8	13.8	13.8	14.5
85°	9.0	8.6	9.0	8.6
87.5°	4.0	3.8	3.6	3.8
90°	0.0	0.0	0.0	0.0

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