

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: P331588-935

Luminaire Tested: **S122DIW-S1005D435U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331588-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S1005D435U935-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 435 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4767.9 lumens  
Efficiency: N/A  
Efficacy: 91.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

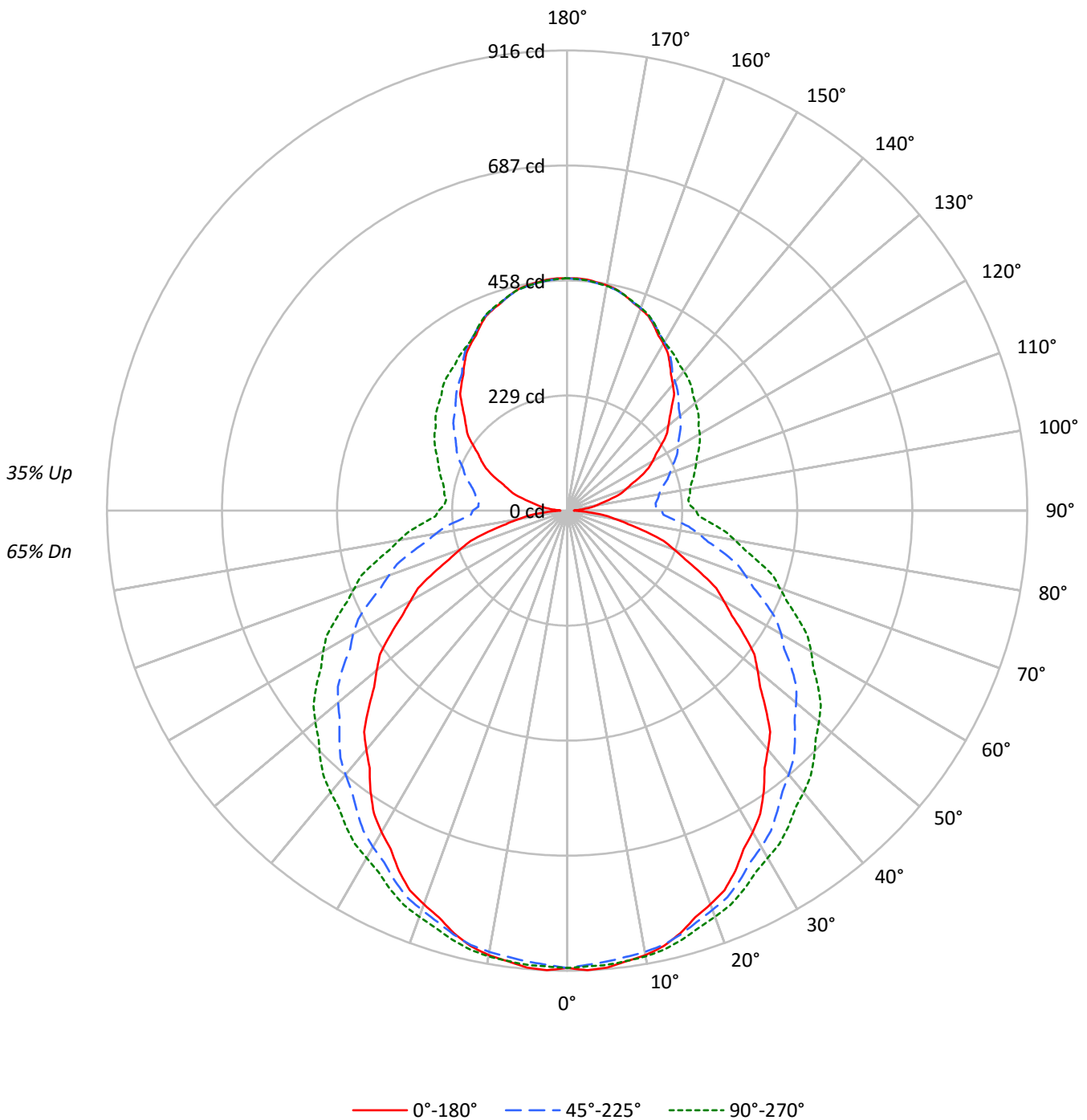
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331588-935

CATALOG NUMBER: S122DIW-S1005D435U935-4F0-1E-UDD-D1

### 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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	65
1	99	94	89	85	93	88	84	80	77	74	71	68	65	63	59	57	55	51
2	90	81	74	68	84	76	70	64	67	62	58	58	54	51	50	47	45	41
3	81	71	62	56	76	66	59	53	58	52	48	51	46	42	44	40	37	34
4	74	62	53	47	69	58	50	44	51	45	40	45	40	36	39	35	32	28
5	68	55	46	40	63	52	44	38	46	39	34	40	35	31	35	31	27	24
6	62	49	41	34	58	47	39	33	41	35	30	36	31	27	32	27	24	21
7	58	44	36	30	54	42	34	29	37	31	26	33	28	23	29	24	21	18
8	54	40	32	26	50	38	31	25	34	28	23	30	25	21	26	22	19	16
9	50	37	29	23	47	35	28	23	31	25	21	28	22	19	24	20	17	15
10	47	34	26	21	44	32	25	20	29	23	19	26	20	17	23	18	15	13

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

	0°	45°	90°
0°	14699	14699	14699
5°	14772	14150	14097
10°	14679	13733	13578
15°	14477	13289	13032
20°	14222	12815	12506
25°	13968	12358	12028
30°	13612	11889	11549
35°	13253	11434	11211
40°	12874	11047	10874
45°	12515	10702	10584
50°	12128	10388	10300
55°	11724	10052	10011
60°	11226	9702	9705
65°	10711	9294	9342
70°	10136	8856	8949
75°	9394	8423	8587
80°	8224	7984	8220
85°	7107	7603	7937



TEST NUMBER: P331588-935

CATALOG NUMBER: S122DIW-S1005D435U935-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.3	1.8
10°-20°	247.4	5.2
20°-30°	374.9	7.9
30°-40°	456.6	9.6
40°-50°	491.2	10.3
50°-60°	477.0	10.0
60°-70°	416.5	8.7
70°-80°	320.7	6.7
80°-90°	217.1	4.6
90°-100°	177.6	3.7
100°-110°	199.2	4.2
110°-120°	227.0	4.8
120°-130°	244.4	5.1
130°-140°	246.3	5.2
140°-150°	228.0	4.8
150°-160°	188.8	4.0
160°-170°	125.2	2.6
170°-180°	43.8	0.9
0°-30°	708.5	14.9
0°-40°	1165.2	24.4
0°-60°	2133.4	44.7
0°-90°	3087.7	64.8
90°-120°	603.8	12.7
90°-150°	1322.4	27.7
90°-180°	1680.0	35.2
0°-180°	4767.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	910	910	910	910	910	
5°	913	909	901	909	908	87
15°	871	873	874	885	884	245
25°	792	801	813	828	833	364
35°	682	705	730	758	768	426
45°	560	596	641	681	695	432
55°	429	478	545	591	610	383
65°	293	358	435	488	507	291
75°	162	237	321	375	394	172
85°	48	129	214	267	288	51
90°	14	95	188	238	256	10
95°	31	98	177	225	242	32
105°	90	132	199	244	261	96
115°	161	180	237	274	289	159
125°	230	235	274	307	320	206
135°	295	300	313	340	350	228
145°	356	359	362	370	375	223
155°	408	409	410	412	411	188
165°	444	443	443	446	444	125
175°	462	460	460	462	460	44
180°	462	462	462	462	462	



TEST NUMBER: P331588-935

CATALOG NUMBER: S122DIW-S1005D435U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4
2.5°	915.8	915.1	914.3	913.6	912.9	911.7	910.1	908.4	906.8	905.2	906.4
5°	913.1	912.2	911.4	910.4	909.6	908.3	906.5	904.7	903.0	901.2	903.0
7.5°	904.9	904.3	903.7	903.2	902.6	901.6	900.3	898.9	897.6	896.2	898.3
10°	898.6	898.0	897.4	896.8	896.2	895.5	894.7	893.7	892.9	892.0	894.3
12.5°	888.0	888.1	888.3	888.4	888.5	888.2	887.6	886.9	886.3	885.6	888.0
15°	870.9	871.5	872.0	872.6	873.2	873.5	873.5	873.5	873.5	873.5	876.2
17.5°	848.7	850.0	851.2	852.4	853.6	854.7	855.7	856.6	857.6	858.5	861.3
20°	834.0	835.4	836.9	838.4	839.8	841.1	842.3	843.4	844.6	845.8	849.0
22.5°	818.1	819.8	821.5	823.2	824.9	826.6	828.2	829.8	831.5	833.1	836.4
25°	791.7	793.8	795.8	797.9	800.0	802.3	804.9	807.5	810.2	812.8	816.3
27.5°	760.0	763.4	766.7	770.1	773.4	776.6	779.7	782.8	785.9	789.1	793.5
30°	738.9	742.7	746.6	750.4	754.1	758.0	761.8	765.6	769.4	773.3	777.9
32.5°	715.7	720.0	724.3	728.6	732.8	737.2	741.8	746.2	750.8	755.3	760.7
35°	682.2	687.2	692.2	697.2	702.1	707.4	713.0	718.5	724.1	729.7	736.2
37.5°	645.8	651.5	657.3	663.0	668.7	675.2	682.4	689.7	696.9	704.1	711.3
40°	621.5	627.9	634.4	640.8	647.3	654.4	662.4	670.3	678.2	686.1	693.8
42.5°	598.3	604.7	611.1	617.6	624.1	631.8	640.9	650.1	659.1	668.2	676.5
45°	559.5	567.4	575.3	583.2	591.2	600.2	610.5	620.8	631.0	641.3	650.4
47.5°	521.2	529.9	538.5	547.1	555.7	566.0	578.1	590.0	602.1	614.1	623.6
50°	494.8	503.9	513.0	522.1	531.2	542.3	555.5	568.7	581.9	595.1	605.1
52.5°	469.5	479.1	488.6	498.2	507.7	519.4	533.3	547.3	561.1	575.1	585.2
55°	428.9	439.4	450.0	460.5	471.1	484.0	499.2	514.4	529.7	544.9	555.5
57.5°	388.7	400.6	412.5	424.5	436.4	450.0	465.6	481.1	496.7	512.2	523.6
60°	360.2	372.8	385.5	398.0	410.7	425.3	442.0	458.7	475.4	492.1	503.3
62.5°	334.9	347.9	361.0	374.1	387.2	402.1	418.8	435.5	452.3	469.0	480.8
65°	292.9	307.3	321.7	336.0	350.4	366.3	383.6	400.8	418.1	435.4	447.5
67.5°	254.4	269.4	284.4	299.5	314.4	330.8	348.5	366.3	383.9	401.7	413.8
70°	227.0	242.2	257.4	272.7	287.9	304.6	322.9	341.0	359.2	377.4	389.9
72.5°	201.6	217.3	233.1	248.7	264.5	281.5	300.0	318.4	336.8	355.2	367.6
75°	162.3	178.7	195.1	211.5	228.0	245.6	264.3	283.1	301.9	320.6	333.2
77.5°	124.3	141.5	158.7	175.8	193.0	211.1	230.2	249.3	268.3	287.4	300.0
80°	98.9	116.8	134.7	152.7	170.5	189.0	208.0	227.1	246.2	265.2	277.5
82.5°	77.8	95.5	113.1	130.8	148.4	166.9	186.2	205.5	224.8	244.1	256.4
85°	47.5	65.7	83.9	102.0	120.2	138.7	157.5	176.2	195.0	213.8	226.1
87.5°	25.9	43.7	61.3	79.0	96.7	115.1	134.2	153.4	172.5	191.7	203.6
90°	13.6	31.6	49.7	67.8	85.8	105.1	125.8	146.5	167.1	187.9	199.4
92.5°	19.1	35.6	52.3	68.9	85.5	103.1	121.6	140.1	158.6	177.1	188.6
95°	30.8	45.5	60.1	74.8	89.5	105.6	123.4	141.2	158.9	176.7	187.9
97.5°	46.3	59.3	72.3	85.3	98.4	113.5	130.7	147.9	165.1	182.4	193.2
100°	58.8	70.3	81.9	93.4	105.0	119.1	135.8	152.4	169.1	185.8	196.7
102.5°	70.9	81.3	91.8	102.2	112.7	126.1	142.3	158.6	174.9	191.2	201.9
105°	90.5	99.2	108.0	116.8	125.5	137.6	153.0	168.4	183.9	199.3	209.7
107.5°	111.6	118.7	126.0	133.1	140.3	151.2	165.8	180.4	195.0	209.7	219.6
110°	124.2	130.6	137.0	143.4	149.8	160.1	174.5	188.9	203.3	217.7	227.0



TEST NUMBER: P331588-935

CATALOG NUMBER: S122DIW-S1005D435U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	139.2	144.6	150.2	155.6	161.0	170.6	184.2	197.7	211.3	224.9	234.1
115°	161.4	165.1	168.8	172.5	176.3	184.7	197.7	210.7	223.8	236.8	245.5
117.5°	182.0	184.8	187.6	190.4	193.2	200.4	212.2	223.9	235.6	247.3	255.8
120°	196.7	198.5	200.4	202.2	204.1	210.6	221.6	232.6	243.7	254.7	262.9
122.5°	210.1	211.4	212.7	214.0	215.2	221.2	231.8	242.3	252.8	263.4	271.1
125°	229.6	230.5	231.3	232.0	232.8	237.7	246.8	256.0	265.1	274.2	281.9
127.5°	250.0	250.7	251.4	252.1	252.8	256.8	264.1	271.3	278.5	285.8	292.7
130°	262.9	263.6	264.5	265.4	266.1	269.6	275.5	281.5	287.5	293.5	300.4
132.5°	277.2	277.8	278.4	279.1	279.7	282.4	287.1	292.0	296.7	301.5	308.0
135°	295.1	296.0	297.0	297.9	298.9	300.9	304.0	307.1	310.2	313.3	319.4
137.5°	315.3	316.0	316.7	317.5	318.1	319.3	320.8	322.3	323.8	325.3	330.6
140°	327.4	328.0	328.4	328.9	329.4	330.1	331.1	332.2	333.2	334.2	338.9
142.5°	339.9	340.4	340.9	341.4	341.8	342.3	342.7	343.1	343.5	344.0	347.8
145°	356.5	357.1	357.7	358.3	359.0	359.6	360.1	360.6	361.1	361.6	363.4
147.5°	372.6	373.2	374.0	374.7	375.5	376.0	376.3	376.7	377.0	377.4	377.8
150°	383.5	384.0	384.5	385.0	385.6	386.0	386.3	386.7	387.0	387.4	387.6
152.5°	393.1	393.6	394.2	394.7	395.2	395.7	396.1	396.5	396.9	397.4	397.7
155°	407.6	407.9	408.1	408.5	408.7	409.0	409.2	409.5	409.7	410.0	410.4
157.5°	420.1	420.3	420.4	420.6	420.8	420.9	421.0	421.2	421.4	421.5	422.1
160°	427.6	427.7	427.9	428.1	428.3	428.3	428.4	428.5	428.6	428.7	429.2
162.5°	434.4	434.5	434.5	434.5	434.5	434.6	434.7	434.8	434.9	435.0	435.5
165°	443.5	443.4	443.3	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.8
167.5°	451.2	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.6
170°	455.2	455.0	454.7	454.4	454.2	454.0	453.9	453.8	453.7	453.7	454.3
172.5°	458.1	457.8	457.5	457.3	457.0	456.8	456.8	456.7	456.6	456.5	457.1
175°	461.5	461.2	461.0	460.7	460.5	460.2	460.0	459.9	459.7	459.5	460.1
177.5°	462.9	462.7	462.4	462.3	462.0	461.8	461.8	461.6	461.4	461.3	461.8
180°	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3



TEST NUMBER: P331588-935

CATALOG NUMBER: S122DIW-S1005D435U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4
2.5°	907.5	908.7	909.9	910.2	909.7	909.3	908.8	908.4
5°	904.7	906.5	908.3	909.0	908.7	908.4	908.1	907.8
7.5°	900.4	902.6	904.7	905.6	905.3	905.0	904.7	904.4
10°	896.6	899.1	901.4	902.4	902.1	901.8	901.6	901.2
12.5°	890.4	892.7	895.0	896.0	895.8	895.4	895.2	894.9
15°	878.8	881.4	884.1	885.3	884.9	884.7	884.3	884.1
17.5°	864.0	866.8	869.5	870.9	870.9	870.9	870.9	870.9
20°	852.2	855.5	858.7	860.3	860.3	860.3	860.3	860.3
22.5°	839.6	842.8	846.0	847.9	848.3	848.9	849.3	849.8
25°	819.8	823.4	826.9	829.1	830.0	830.9	831.7	832.6
27.5°	798.0	802.5	806.9	809.4	810.1	810.7	811.4	812.0
30°	782.6	787.3	792.0	794.8	795.7	796.5	797.5	798.3
32.5°	766.1	771.5	776.9	780.3	782.0	783.5	785.1	786.7
35°	742.6	749.1	755.5	759.7	761.8	763.9	765.9	767.9
37.5°	718.4	725.6	732.7	737.4	739.5	741.8	743.9	746.1
40°	701.4	709.0	716.6	721.8	724.4	727.0	729.7	732.4
42.5°	684.8	693.2	701.5	707.0	709.6	712.3	714.9	717.6
45°	659.4	668.6	677.6	683.6	686.6	689.5	692.4	695.3
47.5°	633.1	642.6	652.1	658.5	661.7	665.0	668.1	671.4
50°	615.0	625.0	635.0	641.6	644.8	648.0	651.3	654.4
52.5°	595.5	605.6	615.9	622.7	626.1	629.6	633.1	636.5
55°	566.1	576.6	587.2	594.3	598.1	602.0	605.8	609.6
57.5°	535.0	546.4	557.8	565.3	569.2	573.1	577.0	580.8
60°	514.4	525.6	536.7	544.4	548.5	552.6	556.7	560.8
62.5°	492.7	504.5	516.3	524.2	528.1	531.9	535.8	539.7
65°	459.5	471.5	483.5	491.5	495.2	499.0	502.9	506.7
67.5°	425.9	438.1	450.2	458.3	462.3	466.2	470.3	474.2
70°	402.6	415.2	427.8	435.8	439.4	442.9	446.4	450.0
72.5°	380.0	392.4	404.7	413.0	417.2	421.5	425.7	429.9
75°	345.9	358.4	371.1	379.3	383.1	386.9	390.7	394.5
77.5°	312.5	325.0	337.6	345.9	350.0	354.1	358.3	362.3
80°	289.8	302.2	314.5	322.7	326.8	330.9	335.0	339.1
82.5°	268.7	281.0	293.3	301.4	305.3	309.2	313.1	316.9
85°	238.4	250.7	263.0	271.2	275.3	279.5	283.5	287.7
87.5°	215.5	227.5	239.4	247.3	251.0	254.8	258.6	262.3
90°	210.9	222.5	234.0	241.6	245.2	248.8	252.4	256.1
92.5°	200.1	211.6	223.2	230.7	234.3	237.8	241.3	244.9
95°	199.0	210.2	221.3	228.5	231.9	235.2	238.6	241.9
97.5°	204.1	214.9	225.8	232.9	236.3	239.8	243.2	246.7
100°	207.5	218.3	229.2	236.2	239.3	242.5	245.6	248.7
102.5°	212.6	223.3	233.9	240.8	244.0	247.1	250.3	253.4
105°	220.2	230.6	241.1	247.9	251.1	254.3	257.5	260.8
107.5°	229.5	239.4	249.3	255.7	258.5	261.3	264.2	267.0
110°	236.4	245.8	255.2	261.3	264.3	267.3	270.3	273.2





TEST NUMBER: P331588-935

CATALOG NUMBER: S122DIW-S1005D435U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	243.2	252.4	261.7	267.7	270.8	273.8	276.8	279.8
115°	254.2	262.9	271.6	277.4	280.4	283.4	286.4	289.3
117.5°	264.2	272.8	281.2	286.8	289.6	292.3	295.0	297.7
120°	271.1	279.3	287.6	293.2	296.1	299.1	302.0	305.0
122.5°	278.9	286.6	294.5	299.6	302.1	304.7	307.3	309.9
125°	289.6	297.2	304.9	310.0	312.5	315.0	317.6	320.2
127.5°	299.7	306.7	313.7	318.2	320.6	322.9	325.2	327.4
130°	307.2	314.1	321.0	325.4	327.4	329.4	331.4	333.4
132.5°	314.4	320.8	327.2	331.5	333.6	335.6	337.7	339.8
135°	325.5	331.6	337.6	341.6	343.8	345.9	347.9	350.0
137.5°	336.0	341.3	346.6	350.1	351.8	353.4	355.1	356.7
140°	343.6	348.3	353.0	356.0	357.4	358.9	360.2	361.7
142.5°	351.6	355.4	359.2	361.7	362.9	364.1	365.3	366.4
145°	365.3	367.1	369.0	370.5	371.6	372.7	373.8	375.0
147.5°	378.2	378.7	379.1	379.4	379.9	380.2	380.6	381.0
150°	387.9	388.1	388.4	388.4	388.1	387.9	387.6	387.4
152.5°	398.0	398.3	398.6	398.6	398.3	398.0	397.7	397.4
155°	410.9	411.3	411.7	411.8	411.6	411.3	411.0	410.8
157.5°	422.7	423.3	423.9	424.0	423.5	423.1	422.8	422.3
160°	429.7	430.2	430.8	430.8	430.5	430.2	429.8	429.5
162.5°	436.1	436.7	437.3	437.4	437.0	436.5	436.1	435.8
165°	444.4	445.0	445.6	445.7	445.2	444.8	444.4	443.9
167.5°	451.2	451.8	452.4	452.5	451.9	451.5	451.1	450.6
170°	454.9	455.5	456.1	456.2	455.6	455.1	454.6	454.1
172.5°	457.7	458.3	458.9	458.9	458.4	457.9	457.4	456.8
175°	460.7	461.3	461.9	462.0	461.5	461.0	460.5	459.9
177.5°	462.2	462.5	463.0	463.0	462.5	462.2	461.8	461.3
180°	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3

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