

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: P332717-830

Luminaire Tested: **S124DIW-S350D470U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332717-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S350D470U830-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 470 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3126.4 lumens  
Efficiency: N/A  
Efficacy: 135.9 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

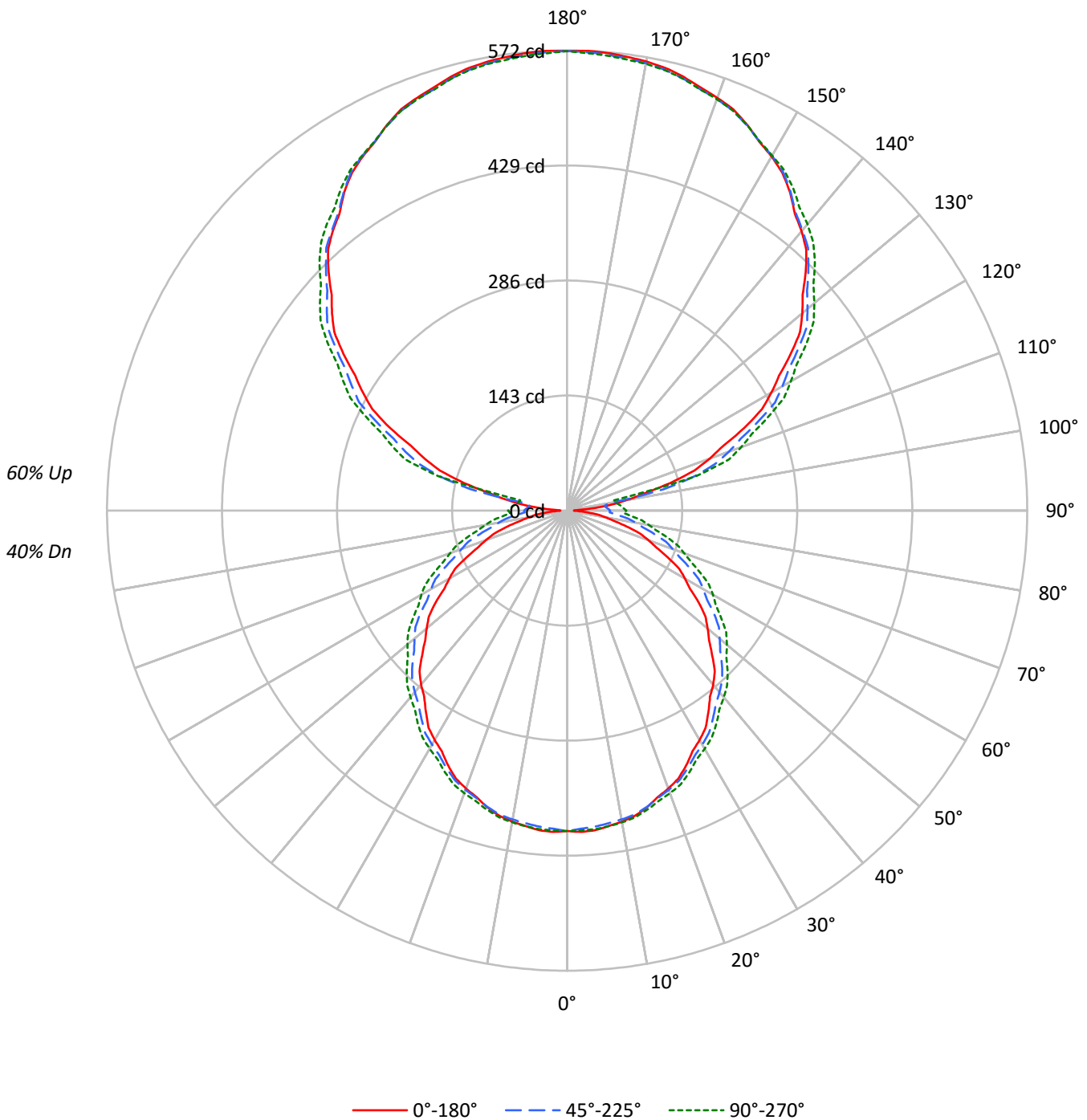
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332717-830

CATALOG NUMBER: S124DIW-S350D470U830-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332717-830

CATALOG NUMBER: S124DIW-S350D470U830-4F0-1E-UDD-D

**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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	95	90	86	82	86	82	79	75	67	64	62	53	51	50	40	39	38	32
2	86	78	72	66	78	71	66	61	58	54	51	46	43	41	35	33	31	26
3	78	68	61	55	71	62	56	51	51	46	42	40	37	34	31	28	26	22
4	71	60	52	46	64	55	48	43	45	40	36	36	32	29	27	25	22	18
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	24	22	19	16
6	60	48	40	34	54	44	37	31	36	31	26	29	25	22	22	19	17	14
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15	12
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	18	16	13	11
9	48	35	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11	9

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

	0°	45°	90°
0°	3216	3216	3216
5°	3227	3143	3152
10°	3207	3092	3090
15°	3177	3032	3016
20°	3134	2967	2944
25°	3086	2893	2865
30°	3032	2819	2784
35°	2972	2744	2713
40°	2925	2674	2639
45°	2853	2607	2575
50°	2794	2532	2508
55°	2732	2460	2429
60°	2635	2369	2357
65°	2529	2272	2269
70°	2400	2161	2166
75°	2220	2037	2074
80°	2021	1919	1981
85°	1773	1815	1928



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.7	1.2
10°-20°	108.1	3.5
20°-30°	163.4	5.2
30°-40°	197.8	6.3
40°-50°	209.1	6.7
50°-60°	196.8	6.3
60°-70°	163.2	5.2
70°-80°	114.7	3.7
80°-90°	66.5	2.1
90°-100°	58.0	1.9
100°-110°	153.0	4.9
110°-120°	257.4	8.2
120°-130°	313.2	10.0
130°-140°	328.3	10.5
140°-150°	303.5	9.7
150°-160°	244.0	7.8
160°-170°	157.4	5.0
170°-180°	54.2	1.7
0°-30°	309.3	9.9
0°-40°	507.0	16.2
0°-60°	912.9	29.2
0°-90°	1257.2	40.2
90°-120°	468.4	15.0
90°-150°	1413.5	45.2
90°-180°	1869.0	59.8
0°-180°	3126.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	397	394	398	398	38
15°	382	383	381	385	385	108
25°	350	352	354	358	359	161
35°	306	311	316	322	324	192
45°	255	264	272	279	282	197
55°	200	210	223	231	234	178
65°	138	153	168	178	182	137
75°	77	93	112	124	128	82
85°	24	42	62	75	80	25
90°	8	31	54	68	74	6
95°	29	31	48	62	67	35
105°	133	144	163	176	166	139
115°	243	248	262	272	276	239
125°	339	341	351	360	364	303
135°	420	419	424	432	436	323
145°	483	484	484	487	490	302
155°	529	530	528	530	529	244
165°	558	556	556	559	556	158
175°	571	569	569	572	568	54
180°	571	571	571	571	571	



TEST NUMBER: P332717-830

CATALOG NUMBER: S124DIW-S350D470U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	399.8	399.5	399.4	399.1	398.9	398.4	397.8	397.2	396.5	395.9	396.4
5°	398.9	398.5	398.2	397.9	397.7	397.2	396.4	395.8	395.1	394.4	395.2
7.5°	395.5	395.3	395.1	394.9	394.7	394.4	393.8	393.2	392.7	392.1	392.9
10°	392.6	392.5	392.4	392.3	392.2	391.9	391.4	390.9	390.4	389.9	390.8
12.5°	388.7	388.6	388.6	388.6	388.6	388.4	388.0	387.8	387.4	387.1	387.9
15°	382.3	382.5	382.6	382.7	382.8	382.7	382.3	382.0	381.7	381.4	382.3
17.5°	373.7	374.0	374.3	374.6	374.8	375.0	374.9	374.8	374.8	374.8	375.7
20°	367.6	367.9	368.3	368.5	368.8	369.0	369.1	369.2	369.3	369.4	370.4
22.5°	360.8	361.2	361.6	361.9	362.3	362.6	362.8	363.0	363.2	363.4	364.3
25°	349.8	350.3	351.0	351.6	352.1	352.6	352.9	353.2	353.5	353.8	354.9
27.5°	337.4	338.4	339.2	340.1	340.9	341.6	342.0	342.5	343.0	343.5	344.4
30°	329.2	330.1	330.8	331.6	332.4	333.2	333.8	334.5	335.3	335.9	337.1
32.5°	320.4	321.3	322.3	323.2	324.1	325.0	325.7	326.5	327.3	328.1	329.3
35°	306.0	307.3	308.4	309.6	310.9	311.9	312.9	313.9	314.9	315.8	317.3
37.5°	291.7	293.0	294.5	295.8	297.2	298.4	299.7	301.0	302.2	303.4	304.8
40°	282.4	283.7	285.0	286.3	287.6	288.9	290.3	291.7	293.0	294.5	296.0
42.5°	271.7	273.1	274.6	276.1	277.5	279.0	280.7	282.3	283.9	285.5	287.2
45°	255.1	257.0	258.9	260.8	262.7	264.6	266.5	268.3	270.2	272.1	273.8
47.5°	239.4	241.4	243.3	245.2	247.1	249.2	251.4	253.6	255.8	258.0	259.7
50°	228.0	230.2	232.3	234.5	236.7	238.8	241.1	243.3	245.4	247.6	249.6
52.5°	216.6	218.8	220.9	223.1	225.3	227.6	230.1	232.6	235.1	237.6	239.6
55°	199.9	202.0	204.1	206.1	208.2	210.8	213.7	216.7	219.6	222.6	224.6
57.5°	181.3	183.8	186.3	189.0	191.5	194.3	197.3	200.2	203.1	206.1	208.5
60°	169.1	171.6	174.3	176.8	179.4	182.3	185.6	188.9	192.1	195.4	197.7
62.5°	157.3	160.1	163.0	165.8	168.5	171.6	174.8	178.1	181.4	184.7	187.0
65°	138.3	141.5	144.7	147.8	151.0	154.3	157.6	161.0	164.4	167.8	170.2
67.5°	120.0	123.4	126.8	130.2	133.5	137.0	140.6	144.2	147.8	151.4	153.9
70°	107.5	110.8	114.2	117.6	121.0	124.6	128.4	132.1	135.9	139.7	142.3
72.5°	95.4	98.9	102.3	105.8	109.1	112.9	116.9	120.9	124.9	128.9	131.5
75°	76.7	80.4	84.1	87.8	91.4	95.3	99.5	103.7	107.8	112.0	114.8
77.5°	59.4	63.2	67.1	71.0	74.8	79.0	83.3	87.8	92.1	96.4	99.2
80°	48.6	52.6	56.6	60.5	64.5	68.6	73.0	77.4	81.7	86.1	89.1
82.5°	37.9	42.0	46.2	50.3	54.4	58.6	63.1	67.4	71.7	76.2	79.2
85°	23.7	27.8	32.0	36.1	40.3	44.6	49.1	53.5	58.0	62.5	65.4
87.5°	13.5	17.7	22.0	26.2	30.4	34.9	39.3	43.8	48.4	52.8	55.8
90°	8.4	13.4	18.5	23.5	28.5	33.5	38.5	43.5	48.5	53.5	57.0
92.5°	12.2	15.8	19.4	23.0	26.7	31.0	36.0	41.0	46.1	51.1	54.5
95°	29.3	29.3	29.4	29.4	29.5	31.6	35.7	39.9	44.0	48.3	51.5
97.5°	55.1	59.9	64.8	69.7	74.5	73.6	67.0	60.4	53.9	47.3	50.0
100°	74.9	79.3	83.5	87.8	92.1	89.6	80.4	71.2	61.9	52.7	53.7
102.5°	97.6	101.0	104.5	108.0	111.6	114.3	116.4	118.5	120.6	122.7	107.8
105°	132.6	135.2	137.7	140.3	142.8	146.2	150.3	154.4	158.5	162.7	166.1
107.5°	165.9	167.8	169.8	171.6	173.5	176.5	180.7	184.8	188.9	193.0	195.9
110°	188.1	189.7	191.4	193.1	194.8	197.7	201.7	205.8	209.8	213.8	216.3



TEST NUMBER: P332717-830

CATALOG NUMBER: S124DIW-S350D470U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	209.6	211.3	213.1	214.8	216.6	219.2	222.8	226.4	230.0	233.6	235.7
115°	242.7	243.9	245.1	246.3	247.4	249.6	252.7	255.7	258.8	261.9	264.3
117.5°	273.0	273.9	274.8	275.7	276.6	278.7	281.8	285.0	288.1	291.3	293.3
120°	293.1	293.8	294.5	295.2	295.9	297.6	300.4	303.1	305.9	308.7	310.9
122.5°	312.3	312.5	312.8	313.1	313.4	315.0	317.8	320.7	323.6	326.4	328.5
125°	339.2	339.5	339.8	340.1	340.4	341.7	343.9	346.2	348.6	350.8	353.0
127.5°	365.1	365.1	365.1	365.1	365.1	366.3	368.6	371.0	373.3	375.6	377.4
130°	381.5	381.5	381.5	381.5	381.5	382.4	384.3	386.2	388.0	389.9	391.8
132.5°	396.9	397.0	397.0	397.1	397.2	398.0	399.6	401.2	402.9	404.5	406.3
135°	419.5	419.4	419.3	419.2	419.1	419.6	420.7	421.8	422.8	424.0	425.7
137.5°	439.9	439.9	439.8	439.8	439.7	440.1	440.8	441.6	442.3	443.1	444.7
140°	453.3	453.4	453.5	453.6	453.6	453.8	454.1	454.4	454.7	455.0	456.6
142.5°	464.9	465.1	465.5	465.8	466.2	466.4	466.4	466.5	466.5	466.6	467.9
145°	483.1	483.3	483.5	483.7	483.9	484.0	484.0	484.0	484.0	484.0	484.7
147.5°	497.8	498.1	498.6	499.1	499.5	499.6	499.5	499.5	499.4	499.3	499.5
150°	508.3	508.6	508.9	509.2	509.4	509.5	509.4	509.3	509.3	509.2	509.2
152.5°	516.9	517.2	517.5	517.7	518.0	518.0	517.9	517.7	517.6	517.4	517.6
155°	529.2	529.3	529.4	529.5	529.6	529.5	529.2	529.0	528.7	528.4	528.8
157.5°	539.8	539.7	539.6	539.6	539.5	539.3	539.0	538.7	538.4	538.1	538.6
160°	545.9	545.6	545.4	545.1	544.8	544.6	544.5	544.4	544.3	544.2	544.8
162.5°	551.4	551.0	550.6	550.3	550.0	549.7	549.6	549.5	549.4	549.3	549.9
165°	558.3	557.8	557.3	556.9	556.4	556.2	556.2	556.2	556.2	556.2	556.9
167.5°	563.7	563.3	562.8	562.3	561.8	561.5	561.5	561.4	561.4	561.3	562.1
170°	566.8	566.3	565.7	565.1	564.6	564.3	564.4	564.5	564.6	564.7	565.4
172.5°	568.9	568.4	567.8	567.2	566.7	566.4	566.5	566.6	566.7	566.8	567.5
175°	571.1	570.5	570.0	569.4	568.8	568.6	568.7	568.8	568.9	569.0	569.9
177.5°	572.1	571.7	571.1	570.5	570.0	569.9	570.0	570.1	570.2	570.4	571.0
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1



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CATALOG NUMBER: S124DIW-S350D470U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	397.0	397.6	398.1	398.3	398.3	398.2	398.1	398.0
5°	396.0	396.7	397.6	397.9	397.8	397.7	397.6	397.5
7.5°	393.9	394.7	395.7	396.1	396.0	395.9	395.8	395.7
10°	391.7	392.6	393.5	393.9	393.8	393.7	393.6	393.5
12.5°	388.7	389.6	390.3	390.7	390.7	390.7	390.7	390.6
15°	383.2	384.1	385.0	385.4	385.3	385.2	385.1	385.0
17.5°	376.5	377.5	378.4	378.8	378.7	378.6	378.6	378.5
20°	371.4	372.4	373.3	373.9	373.9	373.9	373.9	373.9
22.5°	365.3	366.3	367.3	367.9	368.1	368.2	368.3	368.5
25°	356.0	357.0	358.2	358.7	358.8	358.9	359.0	359.1
27.5°	345.4	346.5	347.5	348.1	348.2	348.3	348.4	348.6
30°	338.1	339.2	340.3	340.9	341.1	341.4	341.6	341.8
32.5°	330.5	331.9	333.1	333.8	334.0	334.2	334.4	334.6
35°	318.7	320.0	321.4	322.3	322.5	322.8	323.2	323.5
37.5°	306.2	307.6	309.0	309.9	310.2	310.5	310.9	311.1
40°	297.5	298.9	300.4	301.3	301.7	302.2	302.6	302.9
42.5°	288.8	290.5	292.1	293.1	293.4	293.7	294.1	294.4
45°	275.5	277.2	278.9	279.9	280.5	281.0	281.4	281.9
47.5°	261.5	263.2	264.9	266.1	266.7	267.3	267.9	268.5
50°	251.6	253.5	255.5	256.8	257.4	258.0	258.6	259.2
52.5°	241.6	243.6	245.5	246.9	247.4	248.0	248.6	249.2
55°	226.6	228.6	230.5	231.9	232.4	233.0	233.7	234.2
57.5°	210.8	213.2	215.6	217.0	217.5	218.1	218.7	219.2
60°	200.0	202.3	204.5	206.0	206.9	207.6	208.5	209.2
62.5°	189.3	191.5	193.8	195.4	196.1	196.9	197.7	198.5
65°	172.7	175.2	177.7	179.3	180.1	180.9	181.7	182.5
67.5°	156.5	159.0	161.5	163.2	163.9	164.7	165.4	166.3
70°	145.0	147.7	150.3	152.0	152.7	153.4	154.1	154.8
72.5°	134.1	136.8	139.3	141.0	141.8	142.5	143.4	144.1
75°	117.5	120.3	123.1	124.9	125.8	126.7	127.6	128.5
77.5°	102.1	104.9	107.7	109.6	110.6	111.5	112.4	113.4
80°	92.1	95.0	98.0	99.9	100.7	101.5	102.3	103.0
82.5°	82.2	85.3	88.3	90.3	91.1	92.0	92.9	93.8
85°	68.4	71.4	74.4	76.3	77.3	78.3	79.3	80.3
87.5°	58.8	61.8	64.8	66.7	67.7	68.5	69.5	70.4
90°	60.4	63.9	67.3	69.6	70.5	71.5	72.5	73.5
92.5°	57.8	61.2	64.6	66.6	67.5	68.3	69.1	69.9
95°	54.7	58.0	61.2	63.3	64.3	65.3	66.3	67.3
97.5°	52.6	55.3	58.0	59.8	60.7	61.6	62.6	63.5
100°	54.9	55.9	56.9	57.9	58.6	59.5	60.2	61.1
102.5°	93.0	78.2	63.4	56.5	57.2	58.0	58.8	59.6
105°	169.4	172.7	176.1	176.4	173.8	171.2	168.5	165.9
107.5°	198.8	201.6	204.4	206.4	207.5	208.6	209.6	210.8
110°	218.8	221.2	223.7	225.5	226.6	227.6	228.7	229.8





TEST NUMBER: P332717-830

CATALOG NUMBER: S124DIW-S350D470U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	237.9	240.1	242.2	243.8	245.1	246.2	247.3	248.5
115°	266.6	269.0	271.4	272.9	273.6	274.3	274.9	275.7
117.5°	295.4	297.4	299.4	300.9	301.6	302.4	303.1	303.9
120°	313.0	315.2	317.4	318.8	319.3	320.0	320.6	321.2
122.5°	330.5	332.6	334.8	336.1	336.6	337.1	337.6	338.2
125°	355.2	357.3	359.5	360.9	361.6	362.3	363.0	363.6
127.5°	379.1	380.8	382.6	383.7	384.3	384.9	385.5	386.1
130°	393.7	395.6	397.5	398.7	399.3	399.8	400.5	401.1
132.5°	408.1	409.9	411.7	412.9	413.4	414.0	414.4	415.0
135°	427.4	429.2	431.0	432.3	433.1	433.9	434.7	435.5
137.5°	446.4	448.0	449.7	450.7	451.2	451.6	452.0	452.5
140°	458.1	459.7	461.3	462.3	463.0	463.5	464.1	464.7
142.5°	469.2	470.6	471.9	472.8	473.3	473.6	474.1	474.6
145°	485.3	486.1	486.7	487.4	488.0	488.5	489.1	489.7
147.5°	499.5	499.7	499.9	500.2	500.6	501.0	501.4	501.8
150°	509.2	509.2	509.2	509.3	509.3	509.4	509.5	509.6
152.5°	517.6	517.8	518.0	518.0	518.0	517.9	517.8	517.8
155°	529.1	529.5	529.9	530.0	529.7	529.4	529.1	528.9
157.5°	539.0	539.5	540.0	540.0	539.5	539.0	538.6	538.1
160°	545.4	545.9	546.5	546.5	545.9	545.4	544.8	544.2
162.5°	550.4	551.0	551.6	551.6	550.9	550.3	549.6	549.0
165°	557.7	558.5	559.2	559.1	558.3	557.4	556.6	555.7
167.5°	563.0	563.8	564.7	564.6	563.6	562.7	561.8	560.8
170°	566.2	566.9	567.8	567.7	566.7	565.7	564.8	563.8
172.5°	568.3	569.0	569.8	569.7	568.6	567.6	566.6	565.5
175°	570.7	571.6	572.4	572.2	571.1	570.0	568.8	567.7
177.5°	571.7	572.2	572.9	572.7	571.8	570.9	570.0	569.1
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1

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