

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: P332717-930

Luminaire Tested: **S124DIW-S350D470U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332717-930
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-S350D470U930-4F0-1E-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: 2704.3 lumens
Efficiency: N/A
Efficacy: 117.6 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

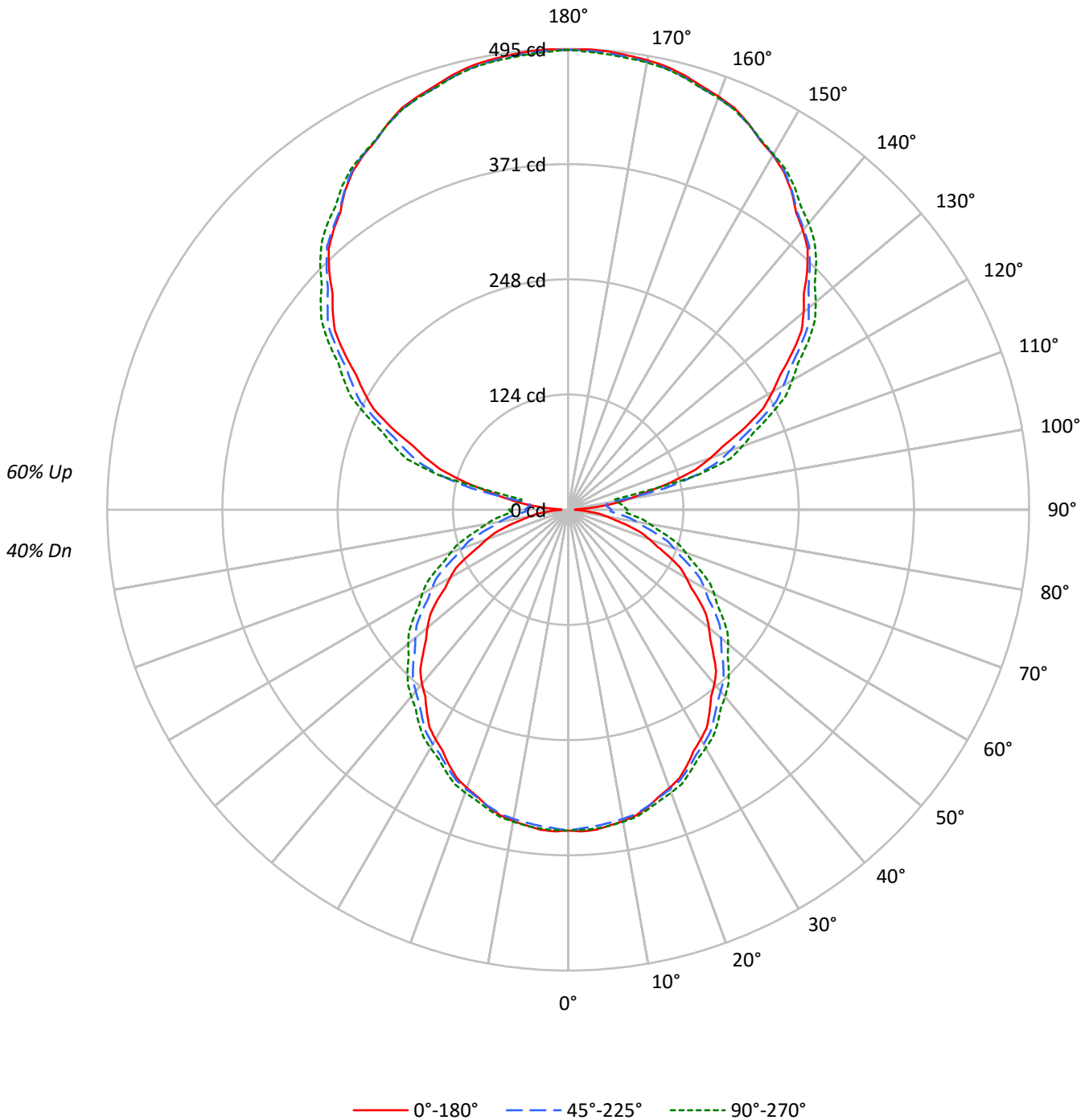
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332717-930

CATALOG NUMBER: S124DIW-S350D470U930-4F0-1E-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°	2782	2782	2782
5°	2791	2719	2726
10°	2774	2675	2673
15°	2749	2623	2608
20°	2711	2566	2547
25°	2669	2503	2478
30°	2623	2439	2408
35°	2571	2374	2347
40°	2530	2313	2282
45°	2468	2256	2228
50°	2417	2190	2169
55°	2363	2129	2101
60°	2280	2049	2039
65°	2187	1965	1962
70°	2076	1868	1874
75°	1922	1763	1793
80°	1750	1660	1713
85°	1534	1571	1669



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.6	1.2
10°-20°	93.5	3.5
20°-30°	141.4	5.2
30°-40°	171.1	6.3
40°-50°	180.8	6.7
50°-60°	170.2	6.3
60°-70°	141.2	5.2
70°-80°	99.2	3.7
80°-90°	57.5	2.1
90°-100°	50.2	1.9
100°-110°	132.4	4.9
110°-120°	222.6	8.2
120°-130°	270.9	10.0
130°-140°	283.9	10.5
140°-150°	262.6	9.7
150°-160°	211.1	7.8
160°-170°	136.1	5.0
170°-180°	46.9	1.7
0°-30°	267.5	9.9
0°-40°	438.6	16.2
0°-60°	789.6	29.2
0°-90°	1087.5	40.2
90°-120°	405.2	15.0
90°-150°	1222.7	45.2
90°-180°	1617.0	59.8
0°-180°	2704.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	345	344	341	344	344	33
15°	331	331	330	333	333	93
25°	303	305	306	310	311	139
35°	265	269	273	278	280	166
45°	221	228	235	242	244	171
55°	173	181	193	200	203	154
65°	120	132	145	154	158	119
75°	66	81	97	107	111	71
85°	20	37	54	65	70	22
90°	7	27	46	59	64	5
95°	25	26	42	54	58	30
105°	115	125	141	152	144	120
115°	210	215	227	235	238	207
125°	293	295	304	312	314	262
135°	363	363	367	373	377	280
145°	418	419	419	421	424	261
155°	458	458	457	458	458	211
165°	483	481	481	484	481	136
175°	494	492	492	495	491	47
180°	494	494	494	494	494	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	345.8	345.6	345.4	345.2	345.0	344.6	344.1	343.6	343.0	342.4	342.9
5°	345.0	344.7	344.5	344.2	344.0	343.6	342.9	342.3	341.8	341.1	341.9
7.5°	342.1	341.9	341.8	341.6	341.4	341.1	340.6	340.1	339.7	339.2	339.9
10°	339.6	339.5	339.4	339.3	339.2	339.0	338.6	338.1	337.7	337.3	338.0
12.5°	336.2	336.1	336.1	336.1	336.1	336.0	335.7	335.4	335.1	334.8	335.5
15°	330.7	330.8	330.9	331.0	331.1	331.0	330.7	330.4	330.2	330.0	330.7
17.5°	323.3	323.5	323.8	324.0	324.2	324.4	324.3	324.2	324.2	324.2	325.0
20°	318.0	318.2	318.5	318.8	319.0	319.2	319.3	319.4	319.4	319.5	320.4
22.5°	312.1	312.4	312.7	313.1	313.4	313.6	313.8	314.0	314.1	314.3	315.1
25°	302.6	303.0	303.6	304.1	304.6	305.0	305.2	305.5	305.7	306.1	307.0
27.5°	291.9	292.7	293.4	294.2	294.9	295.5	295.9	296.3	296.7	297.1	297.9
30°	284.8	285.5	286.2	286.8	287.6	288.2	288.8	289.3	290.0	290.6	291.6
32.5°	277.1	277.9	278.8	279.6	280.4	281.1	281.8	282.4	283.2	283.8	284.9
35°	264.7	265.8	266.8	267.8	268.9	269.8	270.7	271.5	272.4	273.2	274.4
37.5°	252.3	253.5	254.7	255.8	257.1	258.1	259.3	260.3	261.4	262.4	263.7
40°	244.3	245.4	246.5	247.6	248.7	249.9	251.1	252.3	253.5	254.7	256.0
42.5°	235.1	236.3	237.5	238.8	240.0	241.3	242.8	244.2	245.6	247.0	248.4
45°	220.7	222.3	224.0	225.6	227.2	228.9	230.5	232.1	233.7	235.4	236.8
47.5°	207.1	208.8	210.4	212.1	213.8	215.6	217.4	219.4	221.3	223.1	224.6
50°	197.2	199.1	201.0	202.8	204.7	206.6	208.6	210.4	212.3	214.2	215.9
52.5°	187.4	189.2	191.1	193.0	194.9	196.9	199.0	201.2	203.3	205.5	207.2
55°	172.9	174.7	176.5	178.3	180.1	182.3	184.8	187.4	190.0	192.6	194.3
57.5°	156.8	159.0	161.2	163.5	165.7	168.0	170.6	173.2	175.7	178.3	180.3
60°	146.3	148.5	150.7	153.0	155.2	157.7	160.5	163.4	166.2	169.0	171.0
62.5°	136.1	138.5	141.0	143.4	145.8	148.5	151.2	154.1	156.9	159.8	161.8
65°	119.6	122.4	125.1	127.8	130.6	133.5	136.3	139.3	142.2	145.1	147.2
67.5°	103.8	106.7	109.7	112.6	115.4	118.5	121.6	124.7	127.8	130.9	133.1
70°	93.0	95.9	98.8	101.7	104.7	107.8	111.0	114.3	117.6	120.8	123.1
72.5°	82.5	85.5	88.5	91.5	94.4	97.7	101.1	104.6	108.0	111.5	113.7
75°	66.4	69.5	72.7	75.9	79.1	82.4	86.1	89.7	93.3	96.9	99.3
77.5°	51.4	54.7	58.0	61.4	64.7	68.3	72.1	75.9	79.7	83.4	85.9
80°	42.1	45.5	48.9	52.3	55.8	59.4	63.2	66.9	70.7	74.5	77.0
82.5°	32.8	36.4	39.9	43.5	47.0	50.7	54.5	58.3	62.0	65.9	68.5
85°	20.5	24.1	27.6	31.2	34.9	38.6	42.5	46.3	50.1	54.1	56.6
87.5°	11.7	15.3	19.0	22.7	26.3	30.2	34.0	37.9	41.8	45.7	48.3
90°	7.3	11.6	16.0	20.3	24.6	28.9	33.3	37.7	42.0	46.3	49.3
92.5°	10.5	13.7	16.8	19.9	23.1	26.8	31.1	35.5	39.9	44.2	47.1
95°	25.4	25.4	25.4	25.4	25.5	27.3	30.9	34.5	38.1	41.7	44.5
97.5°	47.7	51.9	56.1	60.3	64.4	63.7	58.0	52.3	46.6	40.9	43.2
100°	64.8	68.6	72.2	76.0	79.7	77.5	69.5	61.6	53.6	45.6	46.5
102.5°	84.4	87.4	90.4	93.4	96.5	98.9	100.7	102.5	104.4	106.2	93.3
105°	114.7	116.9	119.1	121.3	123.5	126.5	130.0	133.5	137.1	140.7	143.7
107.5°	143.5	145.1	146.8	148.5	150.1	152.7	156.3	159.9	163.4	167.0	169.4
110°	162.7	164.1	165.6	167.1	168.5	171.0	174.5	178.0	181.5	184.9	187.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	181.3	182.8	184.3	185.8	187.4	189.6	192.7	195.8	198.9	202.0	203.9
115°	209.9	211.0	212.0	213.0	214.0	215.9	218.6	221.2	223.9	226.6	228.6
117.5°	236.1	236.9	237.7	238.5	239.3	241.1	243.8	246.5	249.2	252.0	253.7
120°	253.6	254.1	254.7	255.4	255.9	257.4	259.8	262.2	264.6	267.0	268.9
122.5°	270.1	270.4	270.6	270.8	271.1	272.5	274.9	277.4	279.9	282.3	284.1
125°	293.4	293.7	293.9	294.2	294.4	295.5	297.5	299.5	301.5	303.5	305.3
127.5°	315.8	315.8	315.8	315.8	315.8	316.8	318.9	320.9	322.9	324.9	326.4
130°	330.0	330.0	330.0	330.0	330.0	330.8	332.4	334.0	335.7	337.3	338.9
132.5°	343.3	343.4	343.4	343.5	343.6	344.3	345.7	347.1	348.5	349.9	351.5
135°	362.9	362.8	362.7	362.6	362.6	363.0	363.9	364.8	365.7	366.7	368.2
137.5°	380.5	380.5	380.4	380.4	380.3	380.7	381.3	382.0	382.6	383.3	384.7
140°	392.1	392.2	392.2	392.3	392.4	392.6	392.8	393.1	393.3	393.5	394.9
142.5°	402.1	402.4	402.7	402.9	403.2	403.4	403.4	403.5	403.5	403.6	404.7
145°	417.9	418.1	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7	419.2
147.5°	430.6	430.9	431.3	431.7	432.0	432.2	432.1	432.0	431.9	431.9	432.0
150°	439.7	439.9	440.2	440.4	440.7	440.8	440.7	440.6	440.5	440.4	440.4
152.5°	447.1	447.4	447.6	447.8	448.1	448.1	448.0	447.8	447.7	447.5	447.7
155°	457.8	457.9	458.0	458.0	458.1	458.0	457.8	457.5	457.3	457.1	457.4
157.5°	466.9	466.8	466.8	466.8	466.7	466.5	466.3	465.9	465.7	465.5	465.9
160°	472.2	472.0	471.7	471.5	471.2	471.1	471.0	470.9	470.8	470.8	471.2
162.5°	477.0	476.6	476.3	476.0	475.7	475.5	475.4	475.3	475.2	475.2	475.6
165°	482.9	482.5	482.1	481.7	481.3	481.1	481.1	481.1	481.1	481.1	481.8
167.5°	487.6	487.2	486.8	486.4	485.9	485.7	485.7	485.6	485.6	485.5	486.2
170°	490.3	489.8	489.3	488.9	488.4	488.1	488.2	488.3	488.4	488.4	489.1
172.5°	492.1	491.6	491.1	490.6	490.2	489.9	490.0	490.1	490.2	490.2	490.9
175°	494.0	493.5	493.0	492.5	492.0	491.9	492.0	492.0	492.1	492.2	492.9
177.5°	494.9	494.5	494.0	493.5	493.1	492.9	493.0	493.2	493.3	493.4	493.9
180°	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	343.4	343.9	344.4	344.5	344.5	344.5	344.4	344.3
5°	342.5	343.2	343.9	344.2	344.1	344.0	343.9	343.8
7.5°	340.7	341.4	342.3	342.6	342.5	342.4	342.3	342.3
10°	338.8	339.6	340.4	340.7	340.6	340.6	340.5	340.4
12.5°	336.2	337.0	337.6	337.9	337.9	337.9	337.9	337.9
15°	331.5	332.2	333.0	333.4	333.3	333.2	333.1	333.0
17.5°	325.7	326.5	327.3	327.7	327.6	327.5	327.5	327.4
20°	321.2	322.1	322.9	323.4	323.4	323.4	323.4	323.4
22.5°	316.0	316.8	317.7	318.2	318.4	318.5	318.6	318.8
25°	307.9	308.8	309.8	310.3	310.4	310.5	310.5	310.6
27.5°	298.8	299.7	300.6	301.1	301.2	301.3	301.3	301.5
30°	292.4	293.4	294.3	294.9	295.1	295.3	295.5	295.6
32.5°	285.9	287.1	288.1	288.8	288.9	289.1	289.3	289.4
35°	275.7	276.8	278.0	278.8	279.0	279.2	279.6	279.8
37.5°	264.9	266.0	267.3	268.1	268.3	268.6	268.9	269.1
40°	257.3	258.5	259.8	260.7	261.0	261.4	261.7	262.0
42.5°	249.8	251.3	252.7	253.6	253.8	254.0	254.4	254.6
45°	238.3	239.8	241.2	242.1	242.6	243.0	243.4	243.9
47.5°	226.2	227.6	229.2	230.2	230.7	231.2	231.7	232.3
50°	217.6	219.3	221.0	222.2	222.7	223.1	223.7	224.2
52.5°	209.0	210.7	212.4	213.5	214.0	214.5	215.1	215.6
55°	196.0	197.7	199.4	200.6	201.1	201.5	202.1	202.6
57.5°	182.4	184.4	186.5	187.7	188.2	188.7	189.1	189.6
60°	173.0	175.0	176.9	178.2	179.0	179.6	180.3	181.0
62.5°	163.7	165.7	167.6	169.0	169.7	170.3	171.0	171.7
65°	149.4	151.6	153.7	155.1	155.8	156.5	157.2	157.8
67.5°	135.3	137.5	139.7	141.1	141.8	142.4	143.1	143.8
70°	125.4	127.8	130.0	131.5	132.1	132.7	133.3	133.9
72.5°	116.0	118.3	120.5	122.0	122.6	123.3	124.0	124.7
75°	101.7	104.0	106.5	108.0	108.8	109.6	110.4	111.1
77.5°	88.3	90.7	93.2	94.8	95.6	96.4	97.3	98.1
80°	79.7	82.2	84.8	86.4	87.1	87.8	88.5	89.1
82.5°	71.1	73.8	76.4	78.1	78.8	79.6	80.4	81.1
85°	59.2	61.7	64.3	66.0	66.9	67.8	68.6	69.5
87.5°	50.9	53.5	56.0	57.7	58.5	59.3	60.1	60.9
90°	52.3	55.3	58.2	60.2	61.0	61.9	62.7	63.6
92.5°	50.0	52.9	55.8	57.6	58.4	59.1	59.8	60.5
95°	47.3	50.1	52.9	54.8	55.6	56.5	57.3	58.2
97.5°	45.5	47.9	50.1	51.7	52.5	53.3	54.1	55.0
100°	47.5	48.3	49.2	50.1	50.7	51.4	52.1	52.8
102.5°	80.5	67.7	54.9	48.8	49.5	50.1	50.9	51.5
105°	146.5	149.4	152.3	152.6	150.3	148.1	145.8	143.5
107.5°	171.9	174.4	176.8	178.6	179.4	180.4	181.3	182.3
110°	189.2	191.4	193.5	195.0	196.0	196.9	197.8	198.8



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CATALOG NUMBER: S124DIW-S350D470U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	205.8	207.7	209.5	210.9	212.0	213.0	213.9	214.9
115°	230.6	232.7	234.7	236.0	236.7	237.3	237.8	238.5
117.5°	255.5	257.2	259.0	260.2	260.9	261.5	262.2	262.9
120°	270.8	272.6	274.5	275.7	276.2	276.8	277.3	277.9
122.5°	285.9	287.7	289.6	290.7	291.1	291.6	292.0	292.5
125°	307.2	309.1	311.0	312.2	312.7	313.4	314.0	314.5
127.5°	327.9	329.4	330.9	331.9	332.4	333.0	333.5	333.9
130°	340.6	342.2	343.8	344.9	345.4	345.8	346.4	346.9
132.5°	353.0	354.6	356.1	357.2	357.6	358.1	358.5	359.0
135°	369.7	371.3	372.8	374.0	374.6	375.3	376.0	376.7
137.5°	386.1	387.5	389.0	389.9	390.3	390.6	391.0	391.4
140°	396.2	397.6	399.0	399.9	400.5	401.0	401.5	401.9
142.5°	405.9	407.1	408.2	409.0	409.4	409.7	410.1	410.5
145°	419.8	420.4	421.0	421.6	422.1	422.6	423.1	423.6
147.5°	432.1	432.3	432.4	432.7	433.0	433.3	433.7	434.1
150°	440.4	440.4	440.4	440.5	440.6	440.7	440.8	440.8
152.5°	447.8	447.9	448.1	448.1	448.1	448.0	447.9	447.9
155°	457.7	458.0	458.4	458.4	458.2	458.0	457.7	457.5
157.5°	466.3	466.7	467.1	467.1	466.7	466.3	465.9	465.5
160°	471.7	472.2	472.7	472.7	472.2	471.7	471.2	470.8
162.5°	476.1	476.6	477.1	477.1	476.5	476.0	475.4	474.9
165°	482.4	483.1	483.7	483.6	482.9	482.2	481.4	480.7
167.5°	487.0	487.7	488.4	488.4	487.5	486.7	485.9	485.1
170°	489.8	490.4	491.1	491.1	490.2	489.3	488.5	487.7
172.5°	491.5	492.2	492.8	492.8	491.9	491.0	490.1	489.2
175°	493.7	494.4	495.1	495.0	494.0	493.0	492.0	491.1
177.5°	494.5	495.0	495.5	495.4	494.6	493.8	493.0	492.3
180°	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0

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