

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: P332105-940

Luminaire Tested: **S123DIW-S340D1030U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332105-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D1030U940-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4471.5 lumens
Efficiency: N/A
Efficacy: 117.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

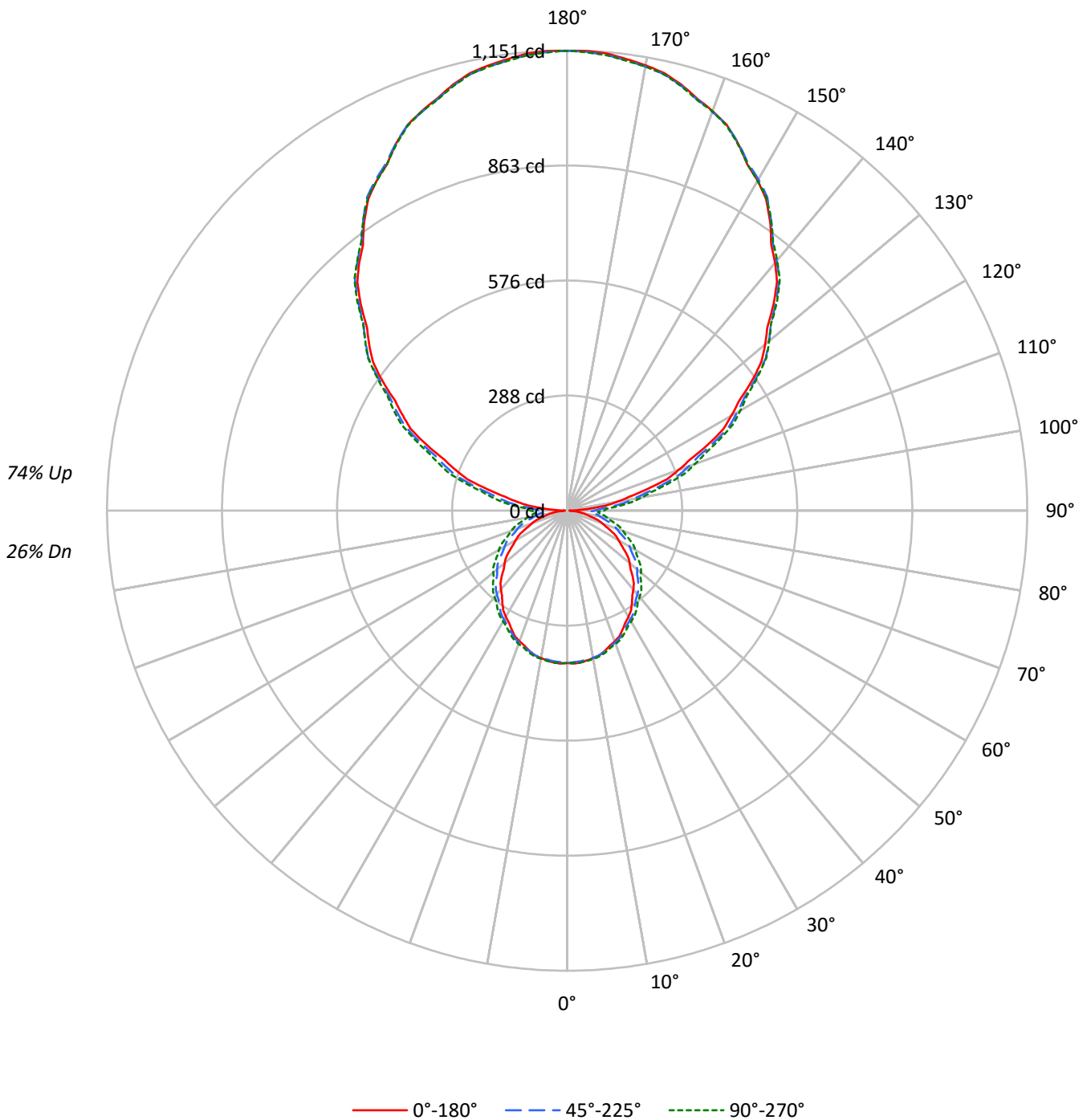
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34	26
1	92	87	84	80	82	78	75	72	60	58	56	44	43	42	29	29	28	21
2	83	76	70	65	74	68	63	58	53	49	46	39	36	34	26	24	23	17
3	76	67	59	54	67	60	53	48	46	42	38	34	31	29	22	21	19	14
4	69	59	51	45	61	53	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	47	40	35	36	31	28	27	23	21	18	16	14	10
6	58	46	39	33	52	42	35	30	33	28	24	24	21	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	15	13	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	20	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	15	17	13	11	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4105	4105	4105
5°	4118	4002	4004
10°	4082	3910	3890
15°	4029	3805	3766
20°	3954	3686	3630
25°	3860	3549	3485
30°	3767	3425	3339
35°	3659	3294	3223
40°	3557	3175	3098
45°	3445	3060	2998
50°	3333	2947	2888
55°	3211	2831	2789
60°	3090	2713	2689
65°	2967	2588	2567
70°	2783	2448	2443
75°	2551	2287	2318
80°	2278	2128	2175
85°	2025	2018	2090



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	0.8
10°-20°	103.1	2.3
20°-30°	154.2	3.4
30°-40°	184.1	4.1
40°-50°	192.6	4.3
50°-60°	180.7	4.0
60°-70°	151.0	3.4
70°-80°	108.0	2.4
80°-90°	67.8	1.5
90°-100°	115.3	2.6
100°-110°	253.9	5.7
110°-120°	401.2	9.0
120°-130°	513.0	11.5
130°-140°	568.9	12.7
140°-150°	555.3	12.4
150°-160°	466.6	10.4
160°-170°	310.6	6.9
170°-180°	108.8	2.4
0°-30°	293.4	6.6
0°-40°	477.5	10.7
0°-60°	850.9	19.0
0°-90°	1177.7	26.3
90°-120°	770.5	17.2
90°-150°	2407.8	53.8
90°-180°	3294.0	73.7
0°-180°	4471.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	381	381	381	381	381	
5°	382	381	378	382	381	36
15°	364	365	364	368	368	102
25°	328	332	334	339	339	151
35°	282	289	295	301	302	177
45°	231	241	251	259	263	178
55°	176	190	205	216	219	158
65°	122	138	156	168	173	120
75°	66	86	106	120	125	71
85°	20	41	63	77	81	21
90°	6	36	69	86	92	7
95°	58	81	108	124	129	63
105°	207	219	244	256	262	221
115°	386	394	407	417	420	382
125°	563	566	576	581	580	502
135°	730	735	738	742	743	562
145°	885	886	889	891	889	552
155°	1013	1013	1014	1017	1011	466
165°	1103	1100	1100	1105	1100	311
175°	1147	1144	1144	1148	1143	109
180°	1150	1150	1150	1150	1150	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	383.1	382.9	382.6	382.5	382.2	381.8	381.2	380.6	380.0	379.4	380.0
5°	381.8	381.7	381.5	381.3	381.1	380.8	380.1	379.6	379.1	378.5	379.2
7.5°	378.1	378.2	378.2	378.2	378.3	378.0	377.5	376.9	376.4	375.9	376.7
10°	374.8	375.0	375.1	375.3	375.5	375.4	374.9	374.4	374.0	373.5	374.4
12.5°	370.8	371.0	371.3	371.6	371.8	371.8	371.5	371.1	370.9	370.5	371.4
15°	363.6	363.8	364.1	364.4	364.6	364.8	364.6	364.5	364.4	364.4	365.3
17.5°	354.5	355.0	355.5	356.1	356.6	356.9	356.9	356.8	356.8	356.8	357.6
20°	347.8	348.3	348.8	349.5	350.0	350.4	350.5	350.7	350.9	351.1	352.0
22.5°	340.8	341.3	341.9	342.4	343.0	343.4	343.7	343.9	344.2	344.5	345.5
25°	328.2	329.1	330.1	331.0	331.9	332.5	332.8	333.1	333.3	333.7	334.8
27.5°	315.6	316.6	317.7	318.8	319.9	320.7	321.2	321.8	322.4	323.0	324.0
30°	306.7	307.8	309.1	310.2	311.5	312.4	313.2	313.9	314.6	315.4	316.5
32.5°	296.7	298.0	299.3	300.7	302.0	303.2	304.2	305.1	306.1	307.0	308.3
35°	282.5	284.0	285.5	287.0	288.5	289.8	291.0	292.2	293.4	294.6	296.0
37.5°	267.6	269.2	270.9	272.6	274.2	275.8	277.2	278.7	280.3	281.7	283.3
40°	257.6	259.3	260.9	262.6	264.2	266.0	267.9	269.7	271.5	273.4	275.0
42.5°	246.6	248.7	250.7	252.7	254.8	256.7	258.7	260.6	262.5	264.4	266.2
45°	231.0	233.3	235.4	237.6	239.9	242.1	244.4	246.7	249.1	251.4	253.2
47.5°	214.6	217.1	219.6	222.2	224.7	227.3	229.9	232.6	235.1	237.8	239.8
50°	204.0	206.6	209.2	211.8	214.4	217.0	219.9	222.8	225.7	228.5	230.7
52.5°	192.7	195.5	198.1	200.9	203.7	206.6	209.7	212.9	216.1	219.2	221.4
55°	176.2	179.2	182.3	185.3	188.3	191.5	194.8	198.2	201.5	204.8	207.3
57.5°	160.1	163.2	166.4	169.6	172.7	176.2	179.8	183.4	187.1	190.7	193.2
60°	148.7	152.0	155.4	158.7	162.0	165.6	169.4	173.2	176.9	180.7	183.3
62.5°	138.1	141.5	144.9	148.3	151.7	155.4	159.4	163.5	167.5	171.5	174.0
65°	121.7	125.4	128.9	132.5	136.2	140.0	144.0	148.1	152.1	156.2	159.0
67.5°	105.1	109.0	112.8	116.5	120.4	124.4	128.5	132.7	136.8	141.0	143.9
70°	93.5	97.5	101.4	105.4	109.3	113.6	118.0	122.4	126.9	131.3	134.3
72.5°	82.8	86.9	90.8	94.8	98.7	103.0	107.5	112.2	116.7	121.4	124.4
75°	66.1	70.4	74.7	79.1	83.5	87.9	92.6	97.1	101.7	106.4	109.4
77.5°	51.5	55.8	60.2	64.6	68.9	73.5	78.1	82.8	87.4	92.1	95.3
80°	41.1	45.7	50.2	54.8	59.2	63.9	68.7	73.5	78.3	83.1	86.2
82.5°	32.2	36.7	41.4	45.9	50.6	55.3	60.2	65.0	69.9	74.8	77.9
85°	20.3	25.0	29.6	34.2	38.8	43.6	48.5	53.3	58.2	63.1	66.3
87.5°	11.2	16.2	21.2	26.2	31.2	36.4	41.6	46.8	52.1	57.2	60.5
90°	6.3	12.8	19.4	25.9	32.5	39.3	46.6	54.0	61.3	68.7	72.6
92.5°	26.9	32.4	37.8	43.2	48.7	54.5	60.6	66.7	72.9	79.0	82.7
95°	57.9	62.9	67.9	72.9	77.9	83.5	89.6	95.7	101.8	108.0	111.6
97.5°	98.7	103.1	107.4	111.6	115.9	120.8	126.3	131.8	137.2	142.8	146.4
100°	126.6	130.7	134.9	139.1	143.2	147.9	153.2	158.5	163.7	169.0	172.2
102.5°	158.8	162.2	165.6	169.0	172.3	176.7	182.3	187.8	193.2	198.8	202.0
105°	206.6	209.2	211.8	214.5	217.0	221.2	227.0	232.8	238.6	244.3	246.9
107.5°	261.7	263.9	266.0	268.1	270.3	273.6	278.0	282.5	287.0	291.5	294.6
110°	296.1	298.2	300.2	302.3	304.3	307.5	311.6	315.7	319.7	323.8	327.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	332.3	333.9	335.5	337.1	338.7	341.3	344.9	348.6	352.1	355.8	359.1
115°	386.0	387.7	389.4	391.2	392.9	395.2	398.1	401.0	403.9	406.9	409.3
117.5°	440.5	441.6	442.6	443.8	444.9	446.7	449.2	451.9	454.5	457.1	459.2
120°	474.1	475.8	477.5	479.1	480.8	482.7	484.7	486.8	488.8	490.8	492.8
122.5°	509.5	510.7	511.8	512.9	514.1	515.8	518.2	520.6	522.9	525.3	526.8
125°	563.2	563.7	564.4	565.0	565.6	567.0	569.3	571.6	573.8	576.1	577.3
127.5°	613.1	614.2	615.5	616.6	617.8	619.3	621.1	622.9	624.6	626.4	627.1
130°	646.3	647.8	649.3	650.9	652.4	653.7	655.0	656.2	657.5	658.7	659.6
132.5°	679.2	680.8	682.3	683.9	685.5	686.9	687.9	688.9	689.9	691.0	691.7
135°	729.9	731.0	732.1	733.3	734.3	735.3	736.1	736.9	737.7	738.5	739.4
137.5°	776.8	777.7	778.6	779.5	780.5	781.5	782.6	783.7	784.8	785.9	786.5
140°	809.0	809.9	811.0	812.0	813.0	813.7	814.2	814.7	815.1	815.6	816.8
142.5°	838.6	839.5	840.4	841.4	842.3	843.0	843.4	843.8	844.3	844.6	845.7
145°	884.8	885.2	885.5	885.7	886.1	886.5	887.2	887.8	888.3	888.9	889.5
147.5°	924.9	925.6	926.3	927.1	927.8	928.4	929.0	929.6	930.1	930.7	930.9
150°	953.1	953.5	953.9	954.3	954.7	955.1	955.5	955.9	956.3	956.7	956.7
152.5°	976.2	976.8	977.3	977.9	978.5	978.8	979.1	979.4	979.6	979.8	980.2
155°	1012.7	1012.7	1012.7	1012.7	1012.7	1012.8	1013.0	1013.3	1013.4	1013.6	1014.4
157.5°	1043.8	1043.6	1043.3	1043.0	1042.9	1042.8	1042.9	1043.1	1043.3	1043.4	1044.3
160°	1063.3	1062.9	1062.5	1062.1	1061.7	1061.5	1061.5	1061.5	1061.5	1061.5	1062.5
162.5°	1080.7	1080.1	1079.5	1079.0	1078.4	1078.2	1078.3	1078.5	1078.7	1078.9	1079.9
165°	1103.0	1102.4	1101.9	1101.3	1100.6	1100.4	1100.4	1100.4	1100.4	1100.4	1101.5
167.5°	1121.0	1120.2	1119.4	1118.6	1117.8	1117.4	1117.6	1117.8	1117.9	1118.0	1119.3
170°	1131.0	1130.2	1129.4	1128.6	1127.8	1127.5	1127.5	1127.5	1127.5	1127.5	1128.8
172.5°	1139.0	1138.2	1137.4	1136.6	1135.8	1135.4	1135.4	1135.4	1135.4	1135.4	1136.7
175°	1147.4	1146.6	1145.8	1145.0	1144.2	1143.7	1143.7	1143.7	1143.7	1143.7	1145.0
177.5°	1150.8	1150.1	1149.5	1148.8	1148.2	1147.9	1147.9	1147.9	1147.9	1147.9	1148.8
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	380.6	381.2	381.8	382.0	382.0	381.9	381.8	381.7
5°	380.0	380.8	381.5	381.8	381.7	381.6	381.5	381.4
7.5°	377.7	378.6	379.5	380.0	379.9	379.7	379.6	379.5
10°	375.4	376.3	377.2	377.6	377.4	377.2	377.0	376.8
12.5°	372.2	373.1	373.9	374.3	374.1	373.9	373.7	373.5
15°	366.2	367.1	368.1	368.5	368.4	368.3	368.2	368.1
17.5°	358.4	359.3	360.1	360.4	360.3	360.2	360.1	359.9
20°	352.8	353.6	354.5	354.9	355.0	355.1	355.2	355.3
22.5°	346.5	347.6	348.7	349.2	349.1	349.0	349.0	348.9
25°	336.0	337.2	338.4	339.0	339.0	339.0	339.0	339.0
27.5°	325.0	326.1	327.2	327.7	327.8	327.9	327.9	328.0
30°	317.5	318.7	319.8	320.3	320.3	320.3	320.3	320.3
32.5°	309.4	310.6	311.7	312.5	312.7	312.9	313.2	313.3
35°	297.4	298.7	300.1	301.0	301.4	301.8	302.1	302.5
37.5°	284.8	286.4	288.0	288.9	289.2	289.5	289.8	290.1
40°	276.5	278.1	279.6	280.6	281.0	281.4	281.8	282.1
42.5°	267.9	269.6	271.3	272.4	273.0	273.4	273.9	274.5
45°	254.9	256.6	258.4	259.7	260.4	261.1	261.9	262.6
47.5°	241.7	243.8	245.8	247.0	247.5	248.2	248.7	249.3
50°	232.7	234.9	237.0	238.4	239.1	239.7	240.3	241.0
52.5°	223.6	225.8	228.0	229.5	230.3	231.1	231.8	232.6
55°	209.8	212.3	214.8	216.4	217.1	217.9	218.6	219.4
57.5°	195.7	198.2	200.7	202.4	203.3	204.2	205.1	205.9
60°	185.9	188.5	191.1	192.9	193.9	194.9	195.9	197.0
62.5°	176.6	179.1	181.7	183.5	184.5	185.4	186.4	187.3
65°	161.8	164.5	167.3	169.2	170.0	171.0	171.9	172.8
67.5°	147.0	150.0	153.0	155.0	155.7	156.5	157.3	158.0
70°	137.2	140.2	143.1	145.1	146.0	146.9	147.8	148.7
72.5°	127.3	130.4	133.4	135.5	136.3	137.2	138.2	139.1
75°	112.4	115.5	118.6	120.6	121.7	122.9	123.9	125.1
77.5°	98.5	101.7	105.0	106.9	107.8	108.7	109.5	110.4
80°	89.3	92.6	95.7	97.6	98.6	99.5	100.5	101.4
82.5°	81.1	84.2	87.4	89.3	90.3	91.2	92.1	93.1
85°	69.5	72.6	75.7	77.8	78.6	79.6	80.5	81.4
87.5°	63.8	67.1	70.4	72.6	73.7	74.6	75.6	76.6
90°	76.5	80.4	84.4	87.0	88.4	89.7	91.0	92.3
92.5°	86.4	90.1	93.8	95.9	96.6	97.2	97.8	98.4
95°	115.3	119.0	122.6	124.9	125.8	126.8	127.7	128.7
97.5°	150.1	153.8	157.5	159.7	160.6	161.4	162.2	163.1
100°	175.5	178.8	182.1	184.4	185.7	187.0	188.3	189.7
102.5°	205.2	208.4	211.6	213.6	214.5	215.3	216.2	217.0
105°	249.5	252.1	254.7	256.6	257.9	259.0	260.3	261.5
107.5°	297.7	300.9	304.0	305.9	306.4	306.9	307.6	308.1
110°	330.2	333.4	336.6	338.4	338.8	339.0	339.4	339.7



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CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	362.4	365.7	369.0	371.0	371.7	372.4	373.2	373.9
115°	411.7	414.1	416.5	418.0	418.6	419.1	419.6	420.2
117.5°	461.4	463.5	465.7	466.9	467.0	467.2	467.3	467.5
120°	494.7	496.6	498.6	499.6	499.9	500.1	500.3	500.6
122.5°	528.3	529.9	531.5	532.3	532.4	532.4	532.4	532.5
125°	578.4	579.5	580.7	581.1	580.9	580.9	580.7	580.5
127.5°	627.8	628.5	629.2	629.4	629.1	628.8	628.5	628.2
130°	660.6	661.6	662.5	662.5	661.6	660.8	660.0	659.2
132.5°	692.4	693.1	693.8	694.0	693.6	693.0	692.6	692.1
135°	740.3	741.1	742.0	742.4	742.5	742.5	742.6	742.7
137.5°	787.1	787.7	788.4	788.5	788.2	787.9	787.6	787.3
140°	818.0	819.2	820.4	820.5	819.6	818.6	817.7	816.7
142.5°	846.8	847.7	848.8	849.0	848.4	847.7	847.1	846.5
145°	890.0	890.6	891.1	891.2	890.7	890.3	889.8	889.4
147.5°	931.1	931.4	931.6	931.2	930.4	929.5	928.6	927.7
150°	956.7	956.7	956.7	956.2	955.2	954.1	953.1	952.1
152.5°	980.4	980.8	981.1	980.8	979.8	978.7	977.8	976.8
155°	1015.2	1016.0	1016.8	1016.6	1015.1	1013.7	1012.4	1010.9
157.5°	1045.1	1046.0	1046.8	1046.7	1045.5	1044.5	1043.3	1042.1
160°	1063.5	1064.5	1065.5	1065.6	1064.8	1064.0	1063.2	1062.4
162.5°	1080.8	1081.8	1082.9	1082.7	1081.5	1080.1	1078.9	1077.5
165°	1102.8	1103.9	1105.2	1105.1	1103.7	1102.2	1100.8	1099.5
167.5°	1120.5	1121.8	1123.0	1123.0	1121.8	1120.5	1119.3	1118.0
170°	1130.2	1131.7	1133.1	1133.1	1131.7	1130.2	1128.8	1127.5
172.5°	1137.9	1139.2	1140.4	1140.3	1138.9	1137.5	1136.0	1134.7
175°	1146.1	1147.4	1148.5	1148.4	1147.0	1145.6	1144.2	1142.8
177.5°	1149.8	1150.8	1151.7	1151.6	1150.5	1149.4	1148.3	1147.2
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0

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