

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: P332093-940

Luminaire Tested: **S123DIW-S340D460U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332093-940
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-S340D460U940-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2708.5 lumens
Efficiency: N/A
Efficacy: 117.8 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: General Diffuse

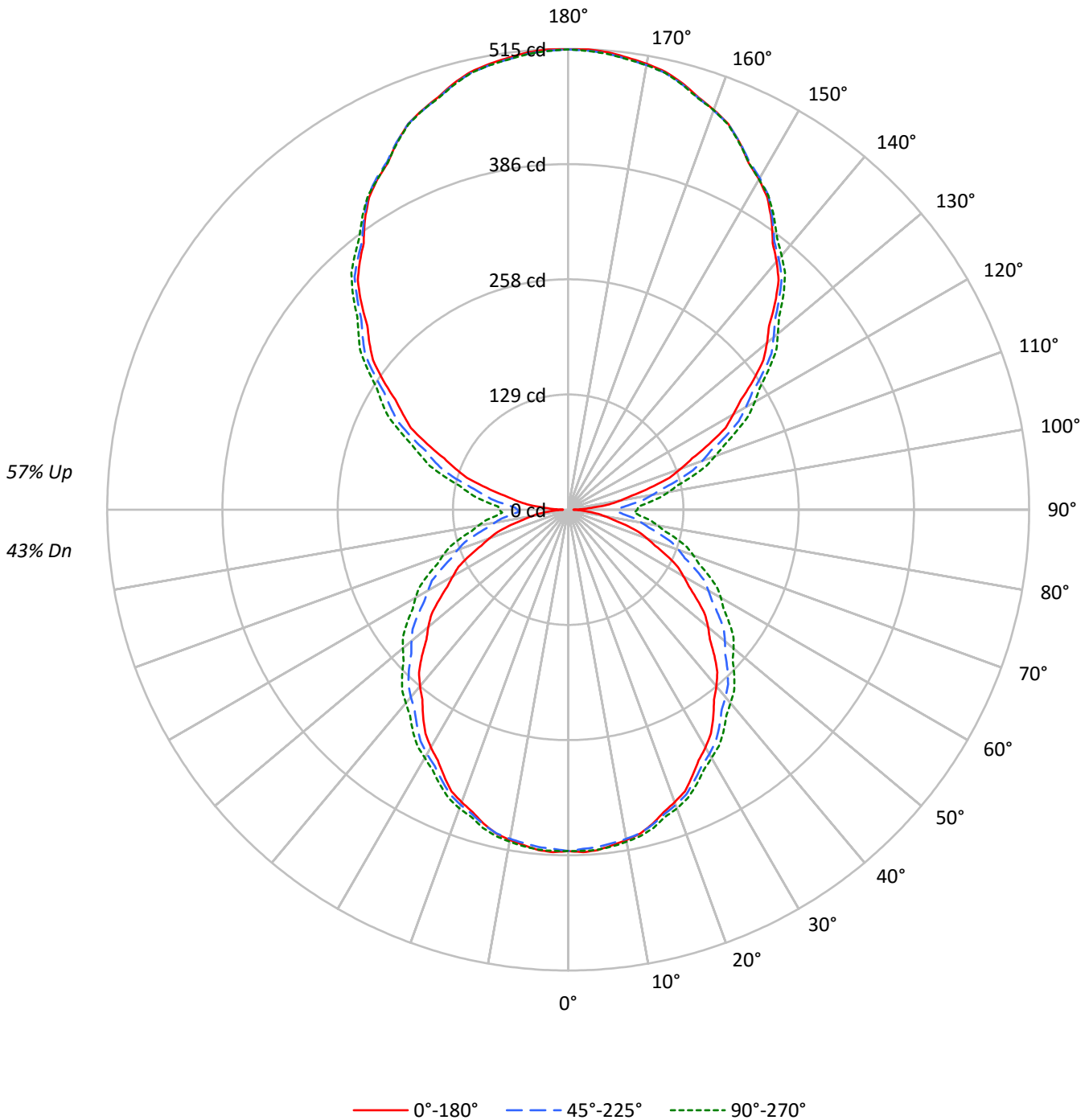
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332093-940

CATALOG NUMBER: S123DIW-S340D460U940-4F0-1E-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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	43
1	95	91	86	83	87	83	79	76	68	66	63	55	53	52	43	42	40	35
2	86	79	72	67	79	72	66	62	59	55	52	48	45	42	37	35	33	28
3	79	69	61	55	71	63	56	51	52	47	43	42	38	35	33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	36	37	33	30	29	26	24	20
5	66	54	46	39	60	49	42	37	41	35	31	33	29	26	26	23	21	17
6	60	48	40	34	55	44	37	32	37	31	27	30	26	23	23	20	18	15
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	21	18	16	13
8	52	39	32	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11
10	45	33	26	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10

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



TEST NUMBER: P332093-940

CATALOG NUMBER: S123DIW-S340D460U940-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	1.3
10°-20°	103.1	3.8
20°-30°	154.2	5.7
30°-40°	184.1	6.8
40°-50°	192.6	7.1
50°-60°	180.7	6.7
60°-70°	151.0	5.6
70°-80°	108.0	4.0
80°-90°	65.9	2.4
90°-100°	73.9	2.7
100°-110°	130.0	4.8
110°-120°	190.4	7.0
120°-130°	235.7	8.7
130°-140°	257.3	9.5
140°-150°	249.0	9.2
150°-160°	208.7	7.7
160°-170°	138.9	5.1
170°-180°	48.7	1.8
0°-30°	293.4	10.8
0°-40°	477.5	17.6
0°-60°	850.9	31.4
0°-90°	1175.8	43.4
90°-120°	394.4	14.6
90°-150°	1136.4	42.0
90°-180°	1533.0	56.6
0°-180°	2708.5	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	30	57	72	77	5
95°	28	48	71	85	90	30
105°	94	106	126	138	143	101
115°	174	180	194	204	208	172
125°	253	254	265	272	274	225
135°	327	329	333	339	340	252
145°	396	396	398	400	401	247
155°	453	453	453	455	452	208
165°	493	492	492	494	492	139
175°	513	512	512	514	511	49
180°	514	514	514	514	514	



TEST NUMBER: P332093-940

CATALOG NUMBER: S123DIW-S340D460U940-4F0-1E-UDD-D1

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°	11.1	15.9	20.7	25.5	30.2	35.1	40.0	45.0	49.9	54.8	58.1
90°	5.8	11.2	16.7	22.1	27.5	33.2	39.1	44.9	50.7	56.6	60.2
92.5°	14.9	19.5	24.3	28.9	33.6	38.6	43.9	49.2	54.5	59.8	63.1
95°	28.4	32.6	36.8	41.1	45.3	50.0	55.3	60.5	65.8	71.1	74.3
97.5°	46.5	50.1	53.9	57.6	61.3	65.5	70.4	75.3	80.1	85.0	88.1
100°	58.7	62.2	65.7	69.2	72.7	76.8	81.5	86.1	90.9	95.6	98.5
102.5°	72.9	75.9	78.9	81.9	84.8	88.7	93.5	98.3	103.0	107.8	110.7
105°	94.3	96.7	99.1	101.5	103.8	107.5	112.2	117.0	121.7	126.5	129.1
107.5°	118.6	120.6	122.6	124.6	126.6	129.7	133.8	137.9	142.0	146.0	148.7
110°	133.8	135.6	137.5	139.4	141.2	144.0	147.9	151.8	155.7	159.5	162.3



TEST NUMBER: P332093-940

CATALOG NUMBER: S123DIW-S340D460U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	150.0	151.5	152.9	154.4	155.9	158.5	162.0	165.6	169.2	172.7	175.5
115°	173.8	175.2	176.6	178.0	179.3	181.6	184.8	187.9	191.0	194.1	196.4
117.5°	198.1	199.0	199.8	200.7	201.6	203.5	206.3	209.3	212.1	215.0	217.2
120°	213.0	214.0	215.0	216.0	217.0	218.8	221.4	224.0	226.6	229.2	231.2
122.5°	228.8	229.5	230.2	230.8	231.4	233.0	235.7	238.4	241.0	243.7	245.5
125°	252.6	252.9	253.2	253.4	253.7	255.0	257.5	260.0	262.5	265.0	266.6
127.5°	274.9	275.4	275.9	276.3	276.9	278.1	280.1	282.1	284.1	286.1	287.5
130°	289.8	290.4	291.1	291.7	292.3	293.4	295.0	296.5	298.1	299.7	301.0
132.5°	304.3	305.1	305.7	306.4	307.1	308.1	309.4	310.7	311.9	313.3	314.5
135°	326.9	327.3	327.8	328.2	328.7	329.4	330.4	331.3	332.2	333.1	334.4
137.5°	347.9	348.2	348.7	349.0	349.4	350.0	350.8	351.6	352.4	353.2	354.3
140°	362.1	362.6	363.0	363.5	363.9	364.3	364.6	365.1	365.4	365.8	367.0
142.5°	375.3	375.7	376.1	376.5	376.8	377.1	377.4	377.6	377.8	378.0	379.2
145°	396.0	396.1	396.2	396.3	396.4	396.5	396.8	397.1	397.3	397.6	398.3
147.5°	413.8	414.0	414.4	414.6	415.0	415.3	415.5	415.8	416.1	416.3	416.5
150°	426.3	426.5	426.7	426.9	427.0	427.2	427.4	427.6	427.8	427.9	427.9
152.5°	436.7	436.9	437.2	437.4	437.7	437.8	437.9	438.1	438.2	438.3	438.5
155°	453.0	453.0	453.0	453.0	453.0	453.1	453.2	453.3	453.3	453.4	453.8
157.5°	466.9	466.8	466.7	466.5	466.5	466.5	466.5	466.6	466.6	466.7	467.1
160°	475.6	475.5	475.3	475.1	474.9	474.8	474.8	474.8	474.8	474.8	475.3
162.5°	483.4	483.1	482.9	482.6	482.4	482.3	482.3	482.4	482.5	482.6	483.0
165°	493.4	493.1	492.8	492.6	492.3	492.2	492.2	492.2	492.2	492.2	492.8
167.5°	501.4	501.1	500.7	500.3	500.0	499.8	499.9	500.0	500.1	500.1	500.7
170°	506.0	505.6	505.2	504.9	504.5	504.4	504.4	504.4	504.4	504.4	505.0
172.5°	509.5	509.2	508.8	508.5	508.0	507.8	507.8	507.8	507.8	507.8	508.5
175°	513.2	512.8	512.5	512.1	511.8	511.6	511.6	511.6	511.6	511.6	512.1
177.5°	514.8	514.4	514.2	513.9	513.6	513.4	513.4	513.4	513.4	513.4	513.9
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4



TEST NUMBER: P332093-940

CATALOG NUMBER: S123DIW-S340D460U940-4F0-1E-UDD-D1

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°	61.3	64.5	67.7	69.8	70.8	71.7	72.7	73.7
90°	63.7	67.1	70.6	72.9	74.0	75.2	76.2	77.3
92.5°	66.5	69.9	73.2	75.3	76.0	76.8	77.5	78.2
95°	77.5	80.7	83.9	86.0	86.9	87.8	88.7	89.7
97.5°	91.2	94.4	97.6	99.6	100.5	101.4	102.3	103.2
100°	101.5	104.4	107.4	109.3	110.5	111.6	112.7	113.8
102.5°	113.5	116.4	119.3	121.2	122.1	123.0	123.9	124.7
105°	131.7	134.3	136.9	138.7	139.6	140.7	141.7	142.7
107.5°	151.5	154.3	157.0	158.8	159.5	160.2	160.9	161.6
110°	165.1	167.8	170.6	172.3	172.8	173.3	173.9	174.5



TEST NUMBER: P332093-940

CATALOG NUMBER: S123DIW-S340D460U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	178.3	181.0	183.8	185.6	186.3	187.1	187.9	188.7
115°	198.8	201.1	203.4	204.8	205.5	206.2	206.8	207.5
117.5°	219.4	221.6	223.7	225.1	225.5	226.0	226.5	226.9
120°	233.3	235.3	237.4	238.6	239.1	239.5	240.0	240.5
122.5°	247.4	249.1	250.9	252.1	252.4	252.9	253.2	253.7
125°	268.2	269.8	271.3	272.3	272.6	272.9	273.1	273.5
127.5°	288.8	290.2	291.5	292.2	292.5	292.7	292.8	293.1
130°	302.5	303.9	305.2	305.9	305.9	305.8	305.7	305.6
132.5°	315.8	317.0	318.3	318.9	319.1	319.2	319.3	319.5
135°	335.7	337.1	338.3	339.1	339.4	339.7	339.9	340.3
137.5°	355.3	356.4	357.5	358.1	358.2	358.4	358.5	358.6
140°	368.4	369.6	371.0	371.5	371.3	371.1	371.0	370.9
142.5°	380.3	381.5	382.6	383.2	383.2	383.1	383.1	383.1
145°	399.0	399.6	400.2	400.6	400.6	400.6	400.6	400.6
147.5°	416.8	417.0	417.2	417.2	417.0	416.8	416.6	416.3
150°	427.9	427.9	427.9	427.8	427.4	427.0	426.7	426.3
152.5°	438.5	438.7	438.9	438.7	438.3	437.8	437.4	437.0
155°	454.1	454.5	454.9	454.7	454.1	453.4	452.8	452.2
157.5°	467.5	467.9	468.2	468.1	467.7	467.2	466.6	466.2
160°	475.7	476.2	476.6	476.6	476.3	475.9	475.5	475.2
162.5°	483.5	483.9	484.4	484.3	483.8	483.1	482.6	482.0
165°	493.3	493.8	494.4	494.3	493.7	493.0	492.4	491.8
167.5°	501.2	501.8	502.3	502.3	501.8	501.2	500.7	500.1
170°	505.6	506.2	506.8	506.8	506.2	505.6	505.0	504.4
172.5°	509.0	509.5	510.1	510.1	509.4	508.8	508.2	507.6
175°	512.6	513.2	513.7	513.7	513.1	512.5	511.8	511.2
177.5°	514.3	514.8	515.1	515.1	514.6	514.2	513.6	513.1
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4

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