

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: P331467-830

Luminaire Tested: **S122DIW-S290D435U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331467-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D435U830-4F0-1E-UDD-D
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 435 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2760.1 lumens
Efficiency: N/A
Efficacy: 120.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

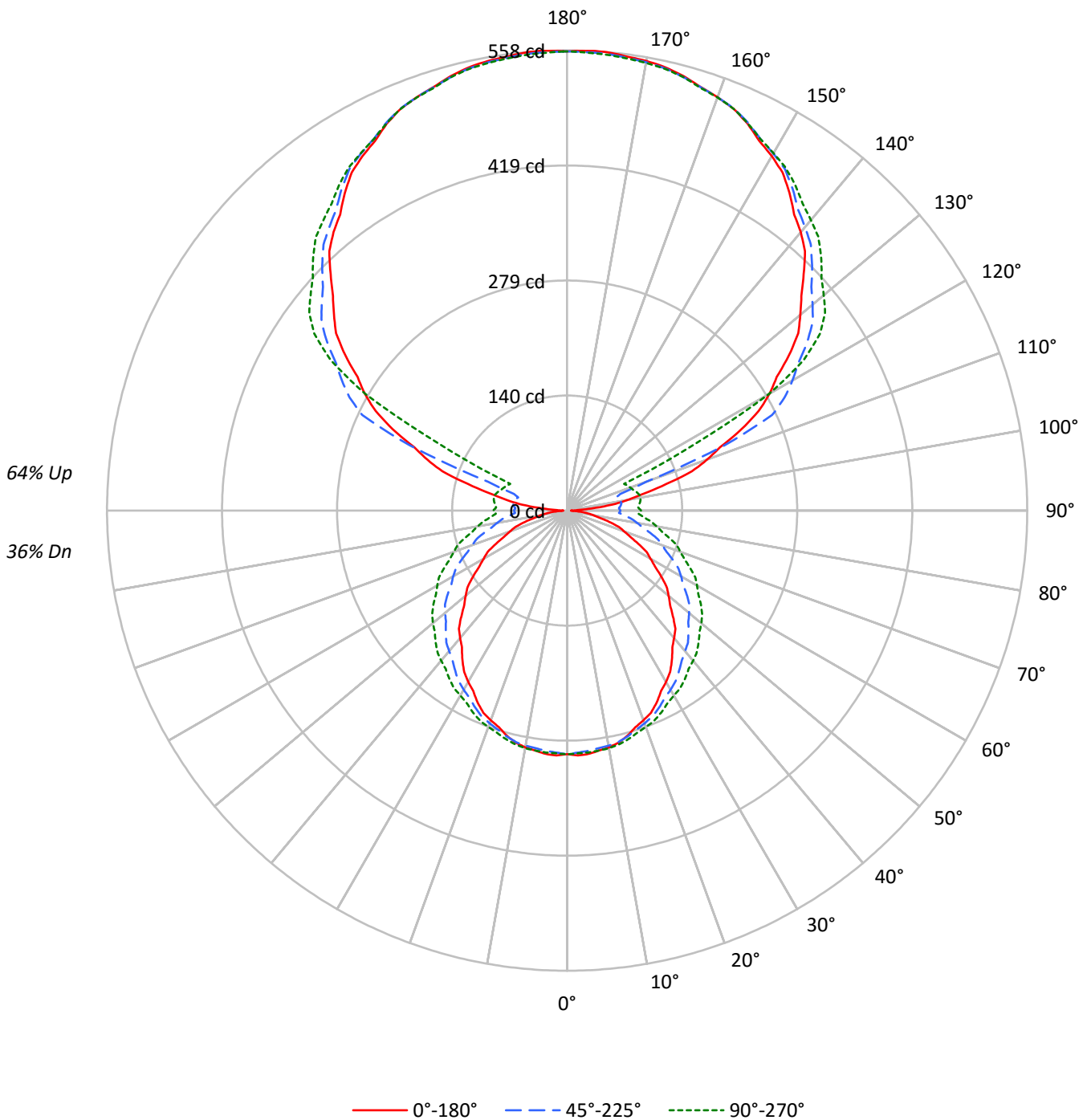
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	36
1	94	89	85	81	84	80	77	74	65	62	60	50	48	47	37	36	35	28
2	85	77	71	65	76	70	64	59	56	52	49	43	41	38	32	30	28	23
3	77	67	60	54	69	61	54	49	49	44	40	38	35	32	28	25	24	19
4	70	59	51	45	63	54	47	41	43	38	34	34	30	27	25	22	20	16
5	64	53	44	38	58	48	40	35	38	33	29	30	26	23	22	19	17	14
6	59	47	39	33	53	43	35	30	35	29	25	27	23	20	20	17	15	12
7	55	42	34	29	49	38	31	26	31	26	22	24	20	18	18	15	13	10
8	50	38	30	25	45	35	28	23	28	23	19	22	18	15	17	14	12	9
9	47	35	27	22	42	32	25	20	26	21	17	20	17	14	15	13	11	8
10	44	32	24	20	39	29	23	18	24	19	15	19	15	12	14	11	10	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4771	4771	4771
5°	4794	4593	4573
10°	4763	4457	4407
15°	4698	4312	4229
20°	4614	4159	4059
25°	4533	4009	3902
30°	4418	3857	3747
35°	4301	3711	3638
40°	4178	3584	3528
45°	4060	3473	3434
50°	3936	3371	3343
55°	3802	3261	3248
60°	3643	3149	3150
65°	3474	3016	3031
70°	3286	2872	2904
75°	3050	2735	2786
80°	2669	2592	2667
85°	2319	2468	2574



TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.0	1.0
10°-20°	80.3	2.9
20°-30°	121.6	4.4
30°-40°	148.2	5.4
40°-50°	159.4	5.8
50°-60°	154.8	5.6
60°-70°	135.2	4.9
70°-80°	104.1	3.8
80°-90°	71.2	2.6
90°-100°	66.7	2.4
100°-110°	103.2	3.7
110°-120°	205.3	7.4
120°-130°	313.5	11.4
130°-140°	325.0	11.8
140°-150°	298.0	10.8
150°-160°	238.8	8.7
160°-170°	153.9	5.6
170°-180°	53.0	1.9
0°-30°	229.9	8.3
0°-40°	378.1	13.7
0°-60°	692.3	25.1
0°-90°	1002.7	36.3
90°-120°	375.2	13.6
90°-150°	1311.6	47.5
90°-180°	1757.0	63.7
0°-180°	2760.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	296	295	292	295	294	28
15°	283	283	283	287	287	80
25°	257	260	264	269	270	118
35°	221	229	237	246	249	138
45°	182	193	208	221	226	140
55°	139	155	177	192	198	124
65°	95	116	141	158	164	94
75°	53	77	104	122	128	56
85°	16	42	69	87	93	17
90°	5	34	65	83	90	4
95°	30	38	65	82	88	35
105°	125	143	61	80	87	133
115°	233	246	274	109	76	230
125°	328	334	355	369	374	293
135°	406	412	420	432	436	313
145°	470	470	476	482	482	294
155°	518	514	519	521	518	238
165°	545	543	544	547	544	154
175°	558	555	556	558	555	53
180°	557	557	557	557	557	



TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	297.2	296.9	296.7	296.4	296.2	295.9	295.3	294.8	294.3	293.7	294.1
5°	296.3	296.1	295.8	295.5	295.1	294.7	294.2	293.6	293.0	292.5	293.0
7.5°	293.6	293.4	293.2	293.0	292.8	292.6	292.1	291.7	291.2	290.8	291.5
10°	291.6	291.4	291.2	291.1	290.9	290.6	290.3	290.0	289.7	289.5	290.2
12.5°	288.1	288.2	288.2	288.3	288.3	288.2	288.0	287.9	287.6	287.4	288.1
15°	282.6	282.8	283.0	283.1	283.3	283.4	283.4	283.4	283.4	283.4	284.3
17.5°	275.4	275.8	276.2	276.6	277.0	277.4	277.7	278.0	278.2	278.6	279.5
20°	270.6	271.1	271.5	272.0	272.5	273.0	273.3	273.7	274.1	274.5	275.5
22.5°	265.5	266.0	266.6	267.1	267.7	268.2	268.7	269.3	269.8	270.3	271.4
25°	256.9	257.6	258.3	258.9	259.6	260.3	261.2	262.0	262.9	263.7	264.9
27.5°	246.7	247.7	248.8	249.9	251.0	252.0	253.0	254.0	255.1	256.1	257.5
30°	239.8	241.0	242.2	243.5	244.7	246.0	247.2	248.5	249.7	250.9	252.4
32.5°	232.2	233.7	235.0	236.4	237.8	239.2	240.7	242.1	243.6	245.1	246.9
35°	221.4	223.0	224.6	226.2	227.8	229.5	231.4	233.2	235.0	236.8	238.8
37.5°	209.5	211.4	213.3	215.2	217.0	219.1	221.5	223.8	226.1	228.5	230.8
40°	201.7	203.8	205.9	207.9	210.0	212.4	214.9	217.5	220.1	222.6	225.1
42.5°	194.2	196.2	198.3	200.4	202.6	205.0	208.0	210.9	213.9	216.8	219.5
45°	181.5	184.1	186.7	189.3	191.8	194.7	198.1	201.4	204.7	208.1	211.0
47.5°	169.1	171.9	174.7	177.5	180.3	183.7	187.6	191.4	195.4	199.3	202.4
50°	160.6	163.5	166.5	169.4	172.4	176.0	180.3	184.5	188.8	193.1	196.3
52.5°	152.3	155.4	158.5	161.6	164.8	168.5	173.1	177.6	182.1	186.6	189.9
55°	139.1	142.6	146.0	149.4	152.9	157.0	162.0	166.9	171.9	176.8	180.3
57.5°	126.1	130.0	133.8	137.7	141.6	146.0	151.1	156.1	161.2	166.3	169.9
60°	116.9	121.0	125.1	129.1	133.3	138.0	143.5	148.8	154.3	159.7	163.3
62.5°	108.7	112.9	117.2	121.4	125.6	130.4	135.9	141.3	146.8	152.2	156.0
65°	95.0	99.7	104.3	109.1	113.7	118.9	124.4	130.1	135.7	141.3	145.2
67.5°	82.6	87.5	92.3	97.2	102.1	107.4	113.1	118.9	124.6	130.4	134.3
70°	73.6	78.6	83.5	88.5	93.4	98.9	104.7	110.7	116.6	122.4	126.6
72.5°	65.4	70.5	75.6	80.7	85.9	91.3	97.4	103.3	109.3	115.3	119.3
75°	52.7	58.0	63.3	68.6	74.0	79.6	85.8	91.9	97.9	104.1	108.1
77.5°	40.3	45.9	51.5	57.0	62.7	68.5	74.7	80.9	87.1	93.2	97.4
80°	32.1	37.9	43.7	49.5	55.3	61.4	67.5	73.7	79.8	86.1	90.0
82.5°	25.3	31.0	36.8	42.4	48.2	54.2	60.4	66.7	73.0	79.2	83.2
85°	15.5	21.3	27.2	33.1	39.0	45.0	51.1	57.2	63.2	69.4	73.3
87.5°	8.5	14.3	20.2	26.1	32.0	38.0	44.2	50.4	56.6	63.0	66.9
90°	4.7	11.2	17.7	24.2	30.7	37.3	44.2	51.0	57.8	64.6	68.8
92.5°	12.1	17.2	22.1	27.2	32.2	37.9	44.1	50.3	56.6	62.8	66.7
95°	29.6	31.1	32.6	34.1	35.7	39.6	45.9	52.3	58.6	64.9	69.0
97.5°	55.0	50.6	46.3	41.9	37.6	38.8	45.8	52.7	59.7	66.5	70.5
100°	74.3	65.6	56.8	48.1	39.3	38.4	45.2	52.1	58.9	65.8	70.0
102.5°	95.2	95.9	96.5	97.1	97.7	94.3	86.7	79.2	71.5	64.0	68.4
105°	124.6	130.1	135.5	140.9	146.4	139.4	119.9	100.4	80.9	61.4	65.7
107.5°	158.6	163.0	167.4	171.7	176.1	166.0	141.5	116.9	92.3	67.7	69.9
110°	180.2	184.0	187.8	191.5	195.3	186.6	165.4	144.2	123.0	101.8	95.9



TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	200.8	204.1	207.4	210.6	213.9	214.5	212.5	210.6	208.7	206.7	177.1
115°	233.4	235.9	238.5	241.1	243.6	248.2	254.7	261.2	267.8	274.3	235.6
117.5°	262.0	264.4	266.7	269.2	271.5	275.5	281.0	286.5	292.0	297.5	290.3
120°	283.3	285.0	286.7	288.4	290.2	293.8	299.2	304.6	310.0	315.4	319.1
122.5°	301.3	302.9	304.4	306.0	307.6	311.0	316.4	321.7	327.1	332.3	335.6
125°	328.4	329.5	330.7	331.9	333.0	336.0	340.7	345.4	350.2	355.0	358.2
127.5°	353.3	354.5	355.6	356.8	358.1	360.5	364.2	368.0	371.6	375.4	378.7
130°	369.1	370.4	371.7	373.1	374.4	376.5	379.6	382.6	385.5	388.5	391.8
132.5°	385.2	386.3	387.4	388.5	389.6	391.5	394.0	396.5	399.1	401.6	404.6
135°	405.7	407.2	408.6	410.0	411.4	413.0	414.8	416.5	418.3	420.1	422.9
137.5°	426.9	427.9	428.9	429.8	430.8	432.0	433.3	434.6	436.0	437.3	440.0
140°	440.7	441.4	442.0	442.6	443.3	444.1	445.4	446.5	447.6	448.8	451.2
142.5°	452.3	452.9	453.5	454.0	454.6	455.4	456.6	457.7	458.9	460.1	462.0
145°	470.1	470.0	470.0	469.9	469.8	470.5	472.0	473.5	475.0	476.5	477.8
147.5°	486.0	485.7	485.3	485.0	484.7	485.2	486.7	488.2	489.7	491.3	491.8
150°	496.3	495.7	495.0	494.5	493.8	494.2	495.7	497.1	498.5	499.9	500.5
152.5°	505.0	504.4	503.6	502.9	502.2	502.6	503.9	505.3	506.6	508.0	508.5
155°	517.6	516.9	516.0	515.3	514.4	514.6	515.7	516.7	517.8	518.9	519.4
157.5°	527.5	526.9	526.2	525.6	524.9	524.9	525.7	526.4	527.2	527.9	528.5
160°	533.4	532.8	532.3	531.8	531.2	531.2	531.8	532.3	532.8	533.4	534.0
162.5°	538.6	538.0	537.4	537.0	536.4	536.4	536.8	537.2	537.7	538.2	538.9
165°	545.4	545.0	544.4	543.8	543.3	543.2	543.5	543.8	544.0	544.2	544.9
167.5°	550.6	550.1	549.6	549.0	548.5	548.4	548.6	548.8	549.1	549.3	550.0
170°	553.6	553.0	552.4	552.0	551.4	551.2	551.4	551.6	551.8	552.0	552.5
172.5°	555.4	555.0	554.4	553.8	553.3	553.2	553.3	553.5	553.6	553.8	554.5
175°	558.0	557.3	556.7	556.1	555.4	555.3	555.4	555.6	555.7	555.9	556.6
177.5°	558.4	557.9	557.3	556.9	556.4	556.1	556.2	556.3	556.4	556.4	556.9
180°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8



TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	294.5	294.8	295.2	295.4	295.2	295.0	294.9	294.7
5°	293.6	294.2	294.7	294.9	294.8	294.7	294.6	294.5
7.5°	292.2	292.8	293.6	293.9	293.8	293.7	293.6	293.5
10°	291.0	291.7	292.5	292.8	292.8	292.7	292.6	292.5
12.5°	288.9	289.6	290.4	290.8	290.7	290.6	290.5	290.4
15°	285.1	286.1	286.9	287.3	287.2	287.1	287.0	286.9
17.5°	280.4	281.3	282.1	282.6	282.6	282.6	282.6	282.6
20°	276.5	277.6	278.6	279.2	279.2	279.2	279.2	279.2
22.5°	272.5	273.5	274.6	275.1	275.3	275.4	275.6	275.8
25°	266.1	267.2	268.3	269.0	269.3	269.6	269.8	270.1
27.5°	258.9	260.4	261.8	262.7	262.9	263.1	263.3	263.5
30°	253.9	255.5	257.0	257.9	258.2	258.4	258.7	259.0
32.5°	248.5	250.3	252.1	253.3	253.7	254.3	254.8	255.2
35°	241.0	243.1	245.2	246.6	247.2	247.9	248.5	249.2
37.5°	233.1	235.4	237.8	239.3	240.0	240.7	241.4	242.0
40°	227.6	230.1	232.5	234.2	235.1	235.9	236.8	237.6
42.5°	222.3	224.9	227.6	229.4	230.3	231.1	232.0	232.8
45°	214.0	217.0	219.9	221.9	222.8	223.8	224.7	225.6
47.5°	205.5	208.5	211.6	213.7	214.7	215.7	216.8	217.8
50°	199.5	202.8	206.0	208.2	209.2	210.3	211.3	212.4
52.5°	193.2	196.5	199.8	202.1	203.2	204.3	205.5	206.5
55°	183.7	187.1	190.6	192.8	194.1	195.4	196.6	197.8
57.5°	173.6	177.3	181.0	183.4	184.7	186.0	187.2	188.5
60°	166.9	170.6	174.2	176.6	178.0	179.3	180.7	182.0
62.5°	159.9	163.7	167.6	170.1	171.4	172.6	173.9	175.1
65°	149.1	153.0	156.9	159.5	160.7	161.9	163.2	164.4
67.5°	138.2	142.1	146.1	148.7	150.0	151.3	152.6	153.9
70°	130.6	134.7	138.8	141.5	142.6	143.7	144.9	146.0
72.5°	123.3	127.3	131.3	134.0	135.3	136.8	138.2	139.5
75°	112.3	116.3	120.5	123.1	124.3	125.5	126.8	128.0
77.5°	101.4	105.5	109.5	112.3	113.6	114.9	116.2	117.5
80°	94.1	98.0	102.1	104.7	106.0	107.4	108.7	110.0
82.5°	87.2	91.2	95.2	97.8	99.1	100.4	101.6	102.8
85°	77.4	81.3	85.4	88.0	89.4	90.7	92.0	93.3
87.5°	70.9	74.8	78.8	81.4	82.7	83.9	85.2	86.4
90°	73.0	77.4	81.6	84.4	85.7	87.0	88.3	89.6
92.5°	70.7	74.6	78.6	81.2	82.5	83.7	85.0	86.2
95°	73.0	77.1	81.2	83.8	84.8	85.9	86.9	87.9
97.5°	74.4	78.2	82.1	84.6	85.9	87.1	88.3	89.5
100°	74.3	78.5	82.8	85.5	86.7	87.9	89.2	90.4
102.5°	72.8	77.2	81.5	84.4	85.7	87.0	88.2	89.5
105°	70.0	74.4	78.7	81.5	82.9	84.4	85.8	87.1
107.5°	72.1	74.3	76.5	78.3	79.7	81.1	82.5	83.9
110°	89.9	84.1	78.1	75.9	77.3	78.7	80.1	81.5



TEST NUMBER: P331467-830

CATALOG NUMBER: S122DIW-S290D435U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	147.4	117.8	88.2	74.1	75.4	76.7	78.0	79.5
115°	197.1	158.4	119.9	97.8	92.5	87.1	81.7	76.3
117.5°	283.0	275.9	268.6	255.0	234.7	214.5	194.4	174.1
120°	322.9	326.6	330.4	326.7	315.7	304.6	293.6	282.6
122.5°	338.8	342.0	345.3	346.2	344.8	343.3	341.9	340.4
125°	361.4	364.6	367.8	369.9	371.1	372.2	373.2	374.4
127.5°	381.9	385.2	388.5	390.6	391.4	392.4	393.2	394.2
130°	395.0	398.3	401.6	403.6	404.3	404.9	405.6	406.2
132.5°	407.7	410.8	413.8	415.7	416.3	417.0	417.6	418.3
135°	425.8	428.8	431.6	433.4	433.9	434.5	435.1	435.7
137.5°	442.5	445.2	447.8	449.3	449.7	450.0	450.3	450.7
140°	453.5	455.8	458.2	459.4	459.5	459.6	459.8	459.9
142.5°	464.0	465.9	467.9	468.9	468.9	469.0	469.0	469.1
145°	479.0	480.1	481.4	482.0	482.0	482.0	482.1	482.1
147.5°	492.3	492.9	493.4	493.6	493.4	493.3	493.1	493.0
150°	501.1	501.5	502.1	502.2	501.7	501.2	500.8	500.4
152.5°	509.1	509.6	510.2	510.1	509.5	509.0	508.3	507.7
155°	520.0	520.5	521.0	520.9	520.2	519.5	518.8	518.1
157.5°	529.1	529.7	530.4	530.3	529.6	528.9	528.2	527.5
160°	534.4	535.0	535.6	535.5	534.9	534.2	533.6	533.0
162.5°	539.4	540.1	540.6	540.5	539.8	539.0	538.3	537.5
165°	545.5	546.1	546.8	546.8	546.1	545.5	544.9	544.2
167.5°	550.6	551.2	551.9	551.8	550.9	550.2	549.3	548.6
170°	553.2	553.8	554.4	554.3	553.6	552.7	552.0	551.1
172.5°	555.1	555.7	556.4	556.3	555.4	554.7	553.8	553.1
175°	557.2	557.8	558.5	558.4	557.4	556.6	555.6	554.8
177.5°	557.4	557.9	558.5	558.4	557.7	557.0	556.4	555.8
180°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8

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