

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

Luminaire Tested: **S122DIW-S290D435U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331467  
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-S290D435U835-4F0-1E-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**

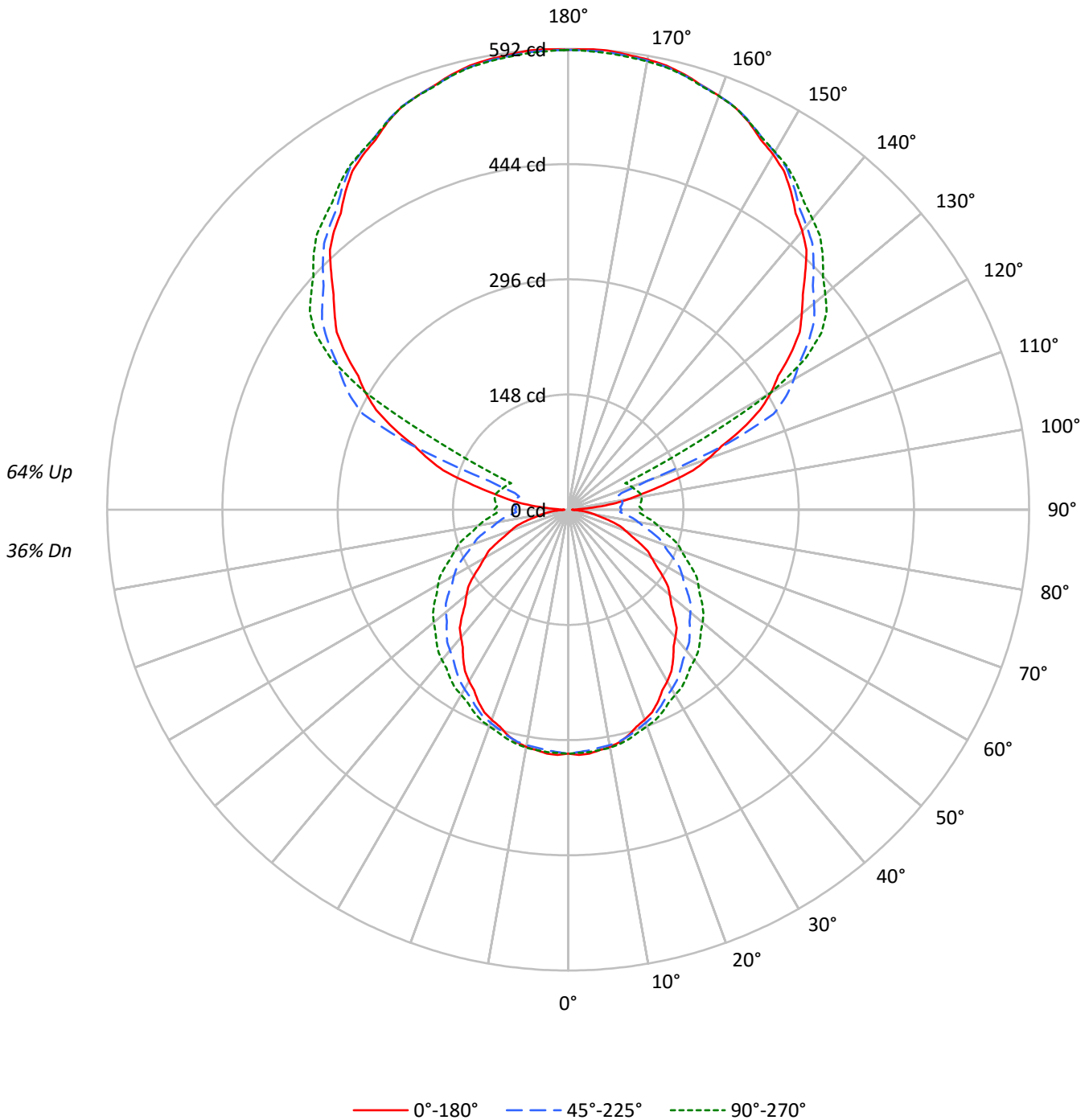
Lumens per Lamp: N/A  
Luminaire Lumens: 2928.3 lumens  
Efficiency: N/A  
Efficacy: 127.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (A<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: P331467  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331467

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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	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°	5062	5062	5062
5°	5086	4872	4853
10°	5054	4728	4675
15°	4983	4575	4487
20°	4896	4412	4306
25°	4810	4254	4140
30°	4687	4093	3976
35°	4563	3936	3860
40°	4433	3803	3743
45°	4308	3685	3644
50°	4176	3577	3546
55°	4035	3461	3447
60°	3865	3340	3342
65°	3686	3200	3215
70°	3487	3048	3081
75°	3236	2900	2956
80°	2836	2748	2829
85°	2454	2617	2731



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	29.7	1.0
10°-20°	85.2	2.9
20°-30°	129.1	4.4
30°-40°	157.2	5.4
40°-50°	169.1	5.8
50°-60°	164.2	5.6
60°-70°	143.4	4.9
70°-80°	110.4	3.8
80°-90°	75.5	2.6
90°-100°	70.7	2.4
100°-110°	109.5	3.7
110°-120°	217.8	7.4
120°-130°	332.6	11.4
130°-140°	344.8	11.8
140°-150°	316.2	10.8
150°-160°	253.4	8.7
160°-170°	163.3	5.6
170°-180°	56.2	1.9
0°-30°	243.9	8.3
0°-40°	401.1	13.7
0°-60°	734.5	25.1
0°-90°	1063.8	36.3
90°-120°	398.0	13.6
90°-150°	1391.6	47.5
90°-180°	1864.0	63.7
0°-180°	2928.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	314	314	314	314	314	
5°	314	313	310	313	312	30
15°	300	301	301	305	304	84
25°	273	276	280	285	287	125
35°	235	243	251	261	264	147
45°	193	205	221	234	239	149
55°	148	164	188	203	210	132
65°	101	123	150	168	174	100
75°	56	82	110	129	136	59
85°	16	45	74	92	99	18
90°	5	36	68	88	95	4
95°	31	40	69	88	93	37
105°	132	152	65	85	92	141
115°	248	261	291	116	81	244
125°	348	355	377	391	397	311
135°	430	437	446	459	462	332
145°	499	499	506	511	512	312
155°	549	546	550	553	550	253
165°	579	576	577	580	577	163
175°	592	589	590	592	589	56
180°	591	591	591	591	591	



TEST NUMBER: P331467

CATALOG NUMBER: S122DIW-S290D435U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5
2.5°	315.3	315.0	314.8	314.5	314.3	313.9	313.3	312.8	312.2	311.6	312.0
5°	314.4	314.1	313.8	313.5	313.1	312.7	312.1	311.5	310.9	310.3	310.9
7.5°	311.5	311.3	311.1	310.9	310.7	310.4	309.9	309.5	309.0	308.5	309.3
10°	309.4	309.2	309.0	308.8	308.6	308.3	308.0	307.7	307.4	307.1	307.9
12.5°	305.7	305.8	305.8	305.9	305.9	305.8	305.6	305.4	305.1	304.9	305.7
15°	299.8	300.0	300.2	300.4	300.6	300.7	300.7	300.7	300.7	300.7	301.6
17.5°	292.2	292.6	293.0	293.5	293.9	294.3	294.6	294.9	295.2	295.6	296.5
20°	287.1	287.6	288.1	288.6	289.1	289.6	290.0	290.4	290.8	291.2	292.3
22.5°	281.7	282.2	282.8	283.4	284.0	284.6	285.1	285.7	286.3	286.8	287.9
25°	272.6	273.3	274.0	274.7	275.4	276.2	277.1	278.0	278.9	279.8	281.0
27.5°	261.7	262.8	264.0	265.1	266.3	267.4	268.4	269.5	270.6	271.7	273.2
30°	254.4	255.7	257.0	258.3	259.6	261.0	262.3	263.6	264.9	266.2	267.8
32.5°	246.4	247.9	249.3	250.8	252.3	253.8	255.4	256.9	258.5	260.0	261.9
35°	234.9	236.6	238.3	240.0	241.7	243.5	245.5	247.4	249.3	251.2	253.4
37.5°	222.3	224.3	226.3	228.3	230.2	232.5	235.0	237.4	239.9	242.4	244.9
40°	214.0	216.2	218.4	220.6	222.8	225.3	228.0	230.8	233.5	236.2	238.8
42.5°	206.0	208.2	210.4	212.6	214.9	217.5	220.7	223.8	226.9	230.0	232.9
45°	192.6	195.3	198.1	200.8	203.5	206.6	210.2	213.7	217.2	220.8	223.9
47.5°	179.4	182.4	185.4	188.3	191.3	194.9	199.0	203.1	207.3	211.4	214.7
50°	170.4	173.5	176.6	179.7	182.9	186.7	191.3	195.8	200.3	204.9	208.3
52.5°	161.6	164.9	168.2	171.5	174.8	178.8	183.6	188.4	193.2	198.0	201.5
55°	147.6	151.3	154.9	158.5	162.2	166.6	171.9	177.1	182.4	187.6	191.3
57.5°	133.8	137.9	142.0	146.1	150.2	154.9	160.3	165.6	171.0	176.4	180.3
60°	124.0	128.4	132.7	137.0	141.4	146.4	152.2	157.9	163.7	169.4	173.3
62.5°	115.3	119.8	124.3	128.8	133.3	138.4	144.2	149.9	155.7	161.5	165.5
65°	100.8	105.8	110.7	115.7	120.6	126.1	132.0	138.0	144.0	149.9	154.1
67.5°	87.6	92.8	97.9	103.1	108.3	113.9	120.0	126.1	132.2	138.3	142.5
70°	78.1	83.4	88.6	93.9	99.1	104.9	111.1	117.4	123.7	129.9	134.3
72.5°	69.4	74.8	80.2	85.6	91.1	96.9	103.3	109.6	116.0	122.3	126.6
75°	55.9	61.5	67.2	72.8	78.5	84.5	91.0	97.5	103.9	110.4	114.7
77.5°	42.8	48.7	54.6	60.5	66.5	72.7	79.3	85.8	92.4	98.9	103.3
80°	34.1	40.2	46.4	52.5	58.7	65.1	71.6	78.2	84.7	91.3	95.5
82.5°	26.8	32.9	39.0	45.0	51.1	57.5	64.1	70.8	77.4	84.0	88.3
85°	16.4	22.6	28.9	35.1	41.4	47.7	54.2	60.7	67.1	73.6	77.8
87.5°	9.0	15.2	21.4	27.7	33.9	40.3	46.9	53.5	60.1	66.8	71.0
90°	5.0	11.9	18.8	25.7	32.6	39.6	46.9	54.1	61.3	68.5	73.0
92.5°	12.8	18.2	23.5	28.9	34.2	40.2	46.8	53.4	60.0	66.6	70.8
95°	31.4	33.0	34.6	36.2	37.9	42.0	48.7	55.5	62.2	68.9	73.2
97.5°	58.3	53.7	49.1	44.5	39.9	41.2	48.6	55.9	63.3	70.6	74.8
100°	78.8	69.6	60.3	51.0	41.7	40.7	48.0	55.3	62.5	69.8	74.3
102.5°	101.0	101.7	102.4	103.0	103.7	100.0	92.0	84.0	75.9	67.9	72.6
105°	132.2	138.0	143.8	149.5	155.3	147.9	127.2	106.5	85.8	65.1	69.7
107.5°	168.3	172.9	177.6	182.2	186.8	176.1	150.1	124.0	97.9	71.8	74.2
110°	191.2	195.2	199.2	203.2	207.2	198.0	175.5	153.0	130.5	108.0	101.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	213.0	216.5	220.0	223.4	226.9	227.6	225.5	223.4	221.4	219.3	187.9
115°	247.6	250.3	253.0	255.8	258.5	263.3	270.2	277.1	284.1	291.0	250.0
117.5°	278.0	280.5	283.0	285.6	288.1	292.3	298.1	304.0	309.8	315.6	308.0
120°	300.6	302.4	304.2	306.0	307.9	311.7	317.4	323.2	328.9	334.6	338.6
122.5°	319.7	321.4	323.0	324.7	326.4	330.0	335.7	341.3	347.0	352.6	356.1
125°	348.4	349.6	350.9	352.1	353.3	356.5	361.5	366.5	371.6	376.6	380.0
127.5°	374.8	376.1	377.3	378.6	379.9	382.5	386.4	390.4	394.3	398.3	401.8
130°	391.6	393.0	394.4	395.8	397.2	399.5	402.7	405.9	409.0	412.2	415.7
132.5°	408.7	409.9	411.0	412.2	413.4	415.4	418.0	420.7	423.4	426.1	429.3
135°	430.4	432.0	433.5	435.0	436.5	438.2	440.1	441.9	443.8	445.7	448.7
137.5°	452.9	454.0	455.0	456.0	457.1	458.3	459.7	461.1	462.6	464.0	466.8
140°	467.6	468.3	468.9	469.6	470.3	471.2	472.5	473.7	474.9	476.2	478.7
142.5°	479.9	480.5	481.1	481.7	482.3	483.2	484.4	485.6	486.9	488.1	490.2
145°	498.8	498.7	498.6	498.5	498.4	499.2	500.8	502.4	504.0	505.6	506.9
147.5°	515.6	515.3	514.9	514.6	514.2	514.8	516.4	518.0	519.6	521.2	521.8
150°	526.6	525.9	525.2	524.6	523.9	524.3	525.9	527.4	528.9	530.4	531.0
152.5°	535.8	535.1	534.3	533.6	532.8	533.2	534.6	536.1	537.5	539.0	539.5
155°	549.2	548.4	547.5	546.7	545.8	546.0	547.1	548.2	549.4	550.5	551.1
157.5°	559.7	559.0	558.3	557.6	556.9	556.9	557.7	558.5	559.3	560.1	560.7
160°	565.9	565.3	564.8	564.2	563.6	563.6	564.2	564.8	565.3	565.9	566.5
162.5°	571.4	570.8	570.2	569.7	569.1	569.1	569.5	570.0	570.5	571.0	571.7
165°	578.7	578.2	577.6	577.0	576.4	576.3	576.6	576.9	577.2	577.4	578.1
167.5°	584.2	583.6	583.1	582.5	581.9	581.8	582.0	582.3	582.6	582.8	583.5
170°	587.3	586.7	586.1	585.6	585.0	584.8	585.0	585.2	585.4	585.6	586.2
172.5°	589.3	588.8	588.2	587.6	587.0	586.9	587.0	587.2	587.4	587.6	588.3
175°	592.0	591.3	590.6	590.0	589.3	589.1	589.3	589.5	589.6	589.8	590.5
177.5°	592.4	591.9	591.3	590.8	590.3	590.0	590.1	590.2	590.3	590.3	590.9
180°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5
2.5°	312.4	312.8	313.2	313.4	313.2	313.0	312.9	312.7
5°	311.5	312.1	312.7	312.9	312.8	312.7	312.6	312.5
7.5°	310.0	310.7	311.5	311.8	311.7	311.6	311.5	311.4
10°	308.7	309.5	310.3	310.7	310.6	310.5	310.4	310.3
12.5°	306.5	307.3	308.1	308.5	308.4	308.3	308.2	308.1
15°	302.5	303.5	304.4	304.8	304.7	304.6	304.5	304.4
17.5°	297.5	298.4	299.3	299.8	299.8	299.8	299.8	299.8
20°	293.4	294.5	295.6	296.2	296.2	296.2	296.2	296.2
22.5°	289.1	290.2	291.3	291.9	292.1	292.2	292.4	292.6
25°	282.3	283.5	284.7	285.4	285.7	286.0	286.3	286.6
27.5°	274.7	276.3	277.8	278.7	278.9	279.1	279.3	279.6
30°	269.4	271.1	272.7	273.6	273.9	274.2	274.5	274.8
32.5°	263.7	265.6	267.5	268.7	269.2	269.8	270.3	270.8
35°	255.7	257.9	260.1	261.6	262.3	263.0	263.7	264.4
37.5°	247.3	249.8	252.3	253.9	254.6	255.4	256.1	256.8
40°	241.5	244.1	246.7	248.5	249.4	250.3	251.2	252.1
42.5°	235.8	238.6	241.5	243.4	244.3	245.2	246.1	247.0
45°	227.0	230.2	233.3	235.4	236.4	237.4	238.4	239.4
47.5°	218.0	221.2	224.5	226.7	227.8	228.9	230.0	231.1
50°	211.7	215.2	218.6	220.9	222.0	223.1	224.2	225.3
52.5°	205.0	208.5	212.0	214.4	215.6	216.8	218.0	219.1
55°	194.9	198.5	202.2	204.6	205.9	207.3	208.6	209.9
57.5°	184.2	188.1	192.0	194.6	196.0	197.3	198.6	200.0
60°	177.1	181.0	184.8	187.4	188.8	190.2	191.7	193.1
62.5°	169.6	173.7	177.8	180.5	181.8	183.1	184.5	185.8
65°	158.2	162.3	166.5	169.2	170.5	171.8	173.1	174.4
67.5°	146.6	150.8	155.0	157.8	159.1	160.5	161.9	163.3
70°	138.6	142.9	147.3	150.1	151.3	152.5	153.7	154.9
72.5°	130.8	135.1	139.3	142.2	143.6	145.1	146.6	148.0
75°	119.1	123.4	127.8	130.6	131.9	133.2	134.5	135.8
77.5°	107.6	111.9	116.2	119.1	120.5	121.9	123.3	124.7
80°	99.8	104.0	108.3	111.1	112.5	113.9	115.3	116.7
82.5°	92.5	96.8	101.0	103.8	105.1	106.5	107.8	109.1
85°	82.1	86.3	90.6	93.4	94.8	96.2	97.6	99.0
87.5°	75.2	79.4	83.6	86.4	87.7	89.0	90.4	91.7
90°	77.5	82.1	86.6	89.5	90.9	92.3	93.7	95.1
92.5°	75.0	79.2	83.4	86.2	87.5	88.8	90.2	91.5
95°	77.5	81.8	86.2	88.9	90.0	91.1	92.2	93.3
97.5°	78.9	83.0	87.1	89.8	91.1	92.4	93.7	95.0
100°	78.8	83.3	87.8	90.7	92.0	93.3	94.6	95.9
102.5°	77.2	81.9	86.5	89.5	90.9	92.3	93.6	95.0
105°	74.3	78.9	83.5	86.5	88.0	89.5	91.0	92.4
107.5°	76.5	78.8	81.2	83.1	84.6	86.0	87.5	89.0
110°	95.4	89.2	82.9	80.5	82.0	83.5	85.0	86.5





TEST NUMBER: P331467

CATALOG NUMBER: S122DIW-S290D435U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	156.4	125.0	93.6	78.6	80.0	81.4	82.8	84.3
115°	209.1	168.1	127.2	103.8	98.1	92.4	86.7	80.9
117.5°	300.3	292.7	285.0	270.5	249.0	227.6	206.2	184.7
120°	342.6	346.5	350.5	346.6	334.9	323.2	311.5	299.8
122.5°	359.5	362.9	366.4	367.3	365.8	364.2	362.7	361.1
125°	383.4	386.8	390.2	392.5	393.7	394.9	396.0	397.2
127.5°	405.2	408.7	412.2	414.4	415.3	416.3	417.2	418.2
130°	419.1	422.6	426.1	428.2	428.9	429.6	430.3	431.0
132.5°	432.6	435.8	439.0	441.0	441.7	442.4	443.1	443.8
135°	451.8	454.9	457.9	459.8	460.4	461.0	461.6	462.3
137.5°	469.5	472.3	475.1	476.7	477.1	477.4	477.8	478.2
140°	481.1	483.6	486.1	487.4	487.5	487.6	487.8	487.9
142.5°	492.3	494.3	496.4	497.5	497.5	497.6	497.6	497.7
145°	508.2	509.4	510.7	511.4	511.4	511.4	511.5	511.5
147.5°	522.3	522.9	523.5	523.7	523.5	523.4	523.2	523.1
150°	531.6	532.1	532.7	532.8	532.3	531.8	531.3	530.9
152.5°	540.1	540.7	541.3	541.2	540.6	540.0	539.3	538.7
155°	551.7	552.2	552.8	552.7	551.9	551.2	550.4	549.7
157.5°	561.4	562.0	562.7	562.6	561.9	561.1	560.4	559.7
160°	567.0	567.6	568.2	568.1	567.5	566.8	566.1	565.5
162.5°	572.3	573.0	573.6	573.5	572.7	571.9	571.1	570.3
165°	578.8	579.4	580.1	580.1	579.4	578.8	578.1	577.4
167.5°	584.2	584.8	585.5	585.4	584.5	583.7	582.8	582.0
170°	586.9	587.6	588.2	588.1	587.3	586.4	585.6	584.7
172.5°	588.9	589.6	590.3	590.2	589.3	588.5	587.6	586.8
175°	591.2	591.8	592.5	592.4	591.4	590.5	589.5	588.6
177.5°	591.4	591.9	592.5	592.4	591.7	591.0	590.3	589.7
180°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7

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