

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P219493

Luminaire Tested: **LDSQ4B15D010 EU4B10208040 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219493
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1208.7 lumens
Efficiency: N/A
Efficacy: 84.0 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

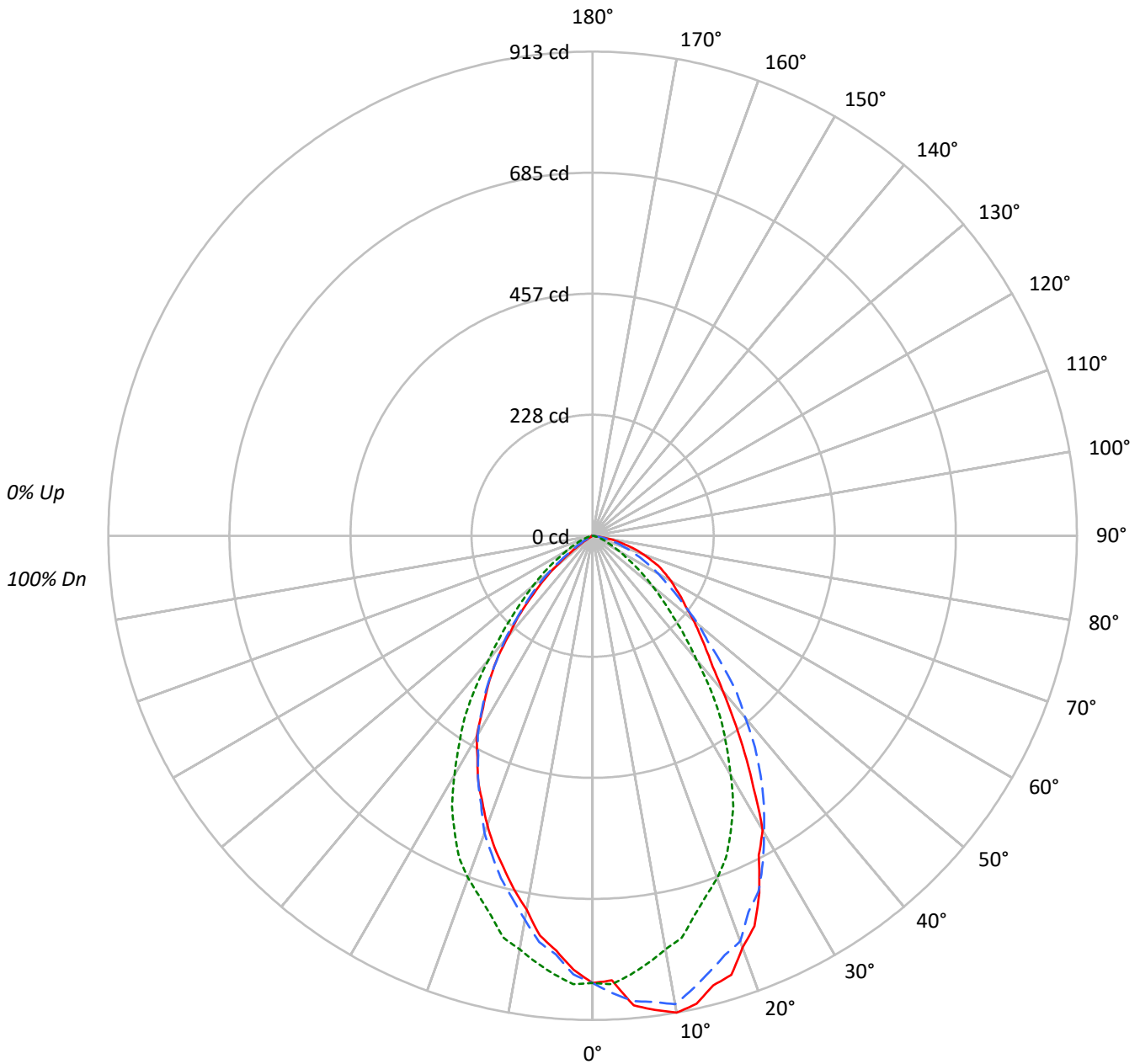
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219493

CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

Luminous Intensity Polar Plot





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CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41																			
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	81695	81695	81695
5°	86432	80723	76396
10°	89812	77879	70423
15°	88017	74327	65000
20°	85165	70773	59835
25°	79441	65823	54578
30°	71704	58247	48861
35°	59072	49860	40541
40°	48207	38482	31198
45°	41416	29223	22441
50°	37482	22245	14167
55°	34489	16045	5118
60°	33112	10966	775
65°	31977	7427	229
70°	28636	5155	283
75°	23468	2658	0
80°	14672	1116	0
85°	0	0	0



TEST NUMBER: P219493

CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.0	6.5
10°-20°	212.9	17.6
20°-30°	284.2	23.5
30°-40°	269.8	22.3
40°-50°	186.5	15.4
50°-60°	103.1	8.5
60°-70°	51.2	4.2
70°-80°	20.2	1.7
80°-90°	1.9	0.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	576.1	47.7
0°-40°	845.9	70.0
0°-60°	1135.5	93.9
0°-90°	1208.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1208.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	843	843	843	843	843	
5°	889	881	830	793	786	85
15°	878	851	741	668	648	248
25°	743	740	616	511	511	339
35°	500	552	422	347	343	313
45°	302	347	213	175	164	236
55°	204	192	95	48	30	184
65°	140	101	32	1	1	135
75°	63	38	7	0	0	67
85°	0	1	0	0	0	6
90°	0	0	0	0	0	



TEST NUMBER: P219493

CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3
2.5°	839.2	862.5	864.5	862.5	865.5	864.5	869.6	864.5	870.6	861.5	863.5
5°	888.8	879.7	898.9	888.8	888.8	887.8	884.7	883.7	887.8	874.6	880.7
7.5°	901.9	915.1	932.2	911.0	912.0	912.0	906.0	903.9	903.9	879.7	886.7
10°	913.0	904.9	914.0	906.0	913.0	912.0	916.1	902.9	912.0	897.9	896.9
12.5°	903.9	900.9	913.0	899.9	895.8	896.9	891.8	888.8	891.8	875.6	874.6
15°	877.6	880.7	898.9	884.7	882.7	880.7	874.6	864.5	872.6	850.3	851.4
17.5°	868.5	863.5	866.5	854.4	857.4	855.4	854.4	845.3	843.3	829.1	829.1
20°	826.1	837.2	837.2	829.1	829.1	828.1	815.0	823.0	813.9	809.9	813.9
22.5°	796.8	797.8	797.8	790.7	791.7	787.7	780.6	775.5	780.6	775.5	767.4
25°	743.2	745.2	757.3	744.2	742.2	746.2	740.1	737.1	736.1	724.0	740.1
27.5°	678.5	698.7	697.7	692.6	698.7	690.6	687.6	688.6	691.6	690.6	694.6
30°	641.0	644.1	647.1	643.1	644.1	641.0	641.0	642.1	650.1	647.1	646.1
32.5°	565.2	575.3	583.4	583.4	584.4	587.5	586.4	607.7	612.7	602.6	600.6
35°	499.5	506.6	513.6	514.7	527.8	528.8	529.8	535.9	550.0	553.1	552.1
37.5°	436.8	443.9	445.9	455.0	462.1	469.2	477.2	485.3	497.5	507.6	502.5
40°	381.2	384.2	389.3	393.3	407.5	407.5	411.5	427.7	440.8	448.9	447.9
42.5°	334.7	335.7	339.7	346.8	360.0	356.9	360.0	371.1	390.3	391.3	402.4
45°	302.3	301.3	304.3	305.4	313.4	317.5	319.5	327.6	343.8	345.8	346.8
47.5°	273.0	272.0	277.0	279.1	282.1	286.1	286.1	287.2	293.2	298.3	294.2
50°	248.7	248.7	248.7	250.8	255.8	254.8	255.8	259.9	262.9	260.9	259.9
52.5°	222.4	226.5	229.5	230.5	231.5	231.5	232.6	230.5	229.5	226.5	220.4
55°	204.2	208.3	208.3	208.3	208.3	212.3	207.3	208.3	208.3	200.2	192.1
57.5°	186.0	190.1	193.1	189.1	193.1	189.1	187.1	186.0	184.0	175.9	163.8
60°	170.9	172.9	171.9	170.9	172.9	169.9	167.8	163.8	161.8	150.7	142.6
62.5°	153.7	154.7	155.7	153.7	151.7	150.7	146.6	140.5	136.5	127.4	120.3
65°	139.5	136.5	135.5	134.5	132.5	129.4	126.4	119.3	116.3	108.2	101.1
67.5°	118.3	117.3	119.3	116.3	111.2	111.2	108.2	102.1	95.0	90.0	82.9
70°	101.1	100.1	98.1	95.0	94.0	90.0	90.0	82.9	80.9	71.8	65.7
72.5°	82.9	82.9	79.9	76.8	73.8	71.8	70.8	65.7	62.7	57.6	52.6
75°	62.7	62.7	61.7	58.6	56.6	54.6	53.6	49.5	46.5	41.5	38.4
77.5°	44.5	44.5	40.4	38.4	39.4	37.4	35.4	34.4	33.4	30.3	26.3
80°	26.3	25.3	22.2	23.3	22.2	22.2	21.2	20.2	18.2	16.2	14.2
82.5°	7.1	8.1	8.1	8.1	9.1	7.1	7.1	7.1	8.1	8.1	5.1
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0
87.5°	1.0	2.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P219493

CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3
2.5°	853.4	852.4	853.4	846.3	862.5	850.3	848.3	846.3	853.4	846.3	836.2
5°	871.6	861.5	858.4	855.4	864.5	850.3	847.3	848.3	843.3	830.1	831.1
7.5°	877.6	868.5	859.4	840.2	848.3	845.3	837.2	831.1	823.0	811.9	809.9
10°	879.7	869.6	856.4	850.3	838.2	834.2	831.1	821.0	810.9	791.7	786.6
12.5°	873.6	861.5	845.3	840.2	831.1	818.0	810.9	800.8	791.7	776.5	765.4
15°	847.3	837.2	832.1	815.0	810.9	802.8	788.7	774.5	761.4	741.1	735.1
17.5°	817.0	812.9	807.9	794.7	793.7	785.6	772.5	760.4	743.2	711.8	701.7
20°	785.6	785.6	769.5	764.4	774.5	758.3	748.2	737.1	701.7	686.5	668.3
22.5°	762.4	751.3	742.2	734.1	735.1	725.0	710.8	688.6	675.4	657.2	636.0
25°	716.9	720.9	700.7	697.7	700.7	677.4	670.4	652.2	633.0	615.8	599.6
27.5°	688.6	677.4	664.3	653.2	653.2	644.1	623.9	619.8	590.5	574.3	554.1
30°	646.1	638.0	626.9	610.7	608.7	601.6	585.4	575.3	545.0	520.7	509.6
32.5°	592.5	589.5	580.4	562.2	556.1	548.0	527.8	510.6	496.5	469.2	456.0
35°	554.1	543.0	523.8	508.6	503.5	489.4	473.2	461.1	445.9	421.6	404.4
37.5°	496.5	485.3	467.1	448.9	448.9	434.8	412.5	400.4	379.2	365.0	350.9
40°	445.9	431.7	413.5	392.3	389.3	369.1	360.0	339.7	326.6	304.3	302.3
42.5°	389.3	376.1	360.0	343.8	331.6	321.5	298.3	283.1	269.0	257.8	254.8
45°	337.7	320.5	306.4	286.1	274.0	261.9	246.7	236.6	225.5	213.3	206.3
47.5°	293.2	279.1	258.8	240.6	228.5	222.4	205.3	194.1	185.0	176.9	171.9
50°	247.7	230.5	219.4	199.2	197.2	183.0	168.9	159.8	154.7	147.6	140.5
52.5°	213.3	197.2	182.0	166.8	158.7	153.7	140.5	131.4	124.4	119.3	115.3
55°	180.0	165.8	153.7	138.5	133.5	126.4	111.2	109.2	102.1	95.0	90.0
57.5°	154.7	141.6	127.4	117.3	108.2	103.1	91.0	82.9	78.9	72.8	67.7
60°	131.4	117.3	106.2	94.0	90.0	82.9	73.8	66.7	61.7	56.6	51.6
62.5°	110.2	98.1	85.9	75.8	69.8	65.7	58.6	52.6	47.5	43.5	39.4
65°	91.0	79.9	69.8	59.7	56.6	51.6	46.5	41.5	37.4	32.4	28.3
67.5°	74.8	64.7	54.6	47.5	44.5	42.5	36.4	31.3	28.3	25.3	21.2
70°	58.6	51.6	43.5	37.4	34.4	31.3	27.3	24.3	20.2	18.2	15.2
72.5°	45.5	39.4	32.4	27.3	25.3	23.3	19.2	16.2	14.2	12.1	10.1
75°	32.4	27.3	23.3	18.2	17.2	16.2	13.1	11.1	9.1	7.1	6.1
77.5°	22.2	18.2	14.2	12.1	11.1	9.1	8.1	6.1	5.1	4.0	3.0
80°	12.1	9.1	7.1	6.1	5.1	4.0	4.0	3.0	2.0	2.0	1.0
82.5°	4.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P219493

CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3
2.5°	842.3	831.1	834.2	834.2	832.1	832.1	830.1	827.1	828.1	822.0	808.9
5°	833.2	819.0	817.0	819.0	810.9	808.9	804.8	810.9	792.7	799.8	791.7
7.5°	806.9	793.7	790.7	797.8	787.7	781.6	780.6	788.7	772.5	764.4	755.3
10°	777.5	772.5	763.4	758.3	755.3	756.3	748.2	738.1	735.1	733.1	725.0
12.5°	751.3	740.1	732.0	726.0	724.0	724.0	710.8	708.8	699.7	697.7	685.5
15°	719.9	706.8	701.7	693.6	686.5	690.6	675.4	671.4	668.3	655.2	657.2
17.5°	692.6	678.5	666.3	661.3	655.2	649.1	635.0	638.0	630.9	630.9	612.7
20°	657.2	642.1	633.0	622.8	622.8	614.8	604.6	605.7	596.6	587.5	571.3
22.5°	619.8	603.6	592.5	588.5	578.4	576.3	564.2	561.2	549.0	550.0	535.9
25°	580.4	564.2	549.0	550.0	540.9	536.9	529.8	515.7	510.6	504.5	500.5
27.5°	533.9	522.7	509.6	508.6	491.4	492.4	483.3	479.3	467.1	470.2	461.1
30°	491.4	475.2	463.1	460.1	453.0	451.0	436.8	430.7	432.8	424.7	419.6
32.5°	447.9	423.7	418.6	412.5	408.5	403.4	393.3	397.4	388.3	390.3	382.2
35°	390.3	380.2	367.0	367.0	363.0	358.9	351.9	355.9	346.8	342.8	334.7
37.5°	341.8	332.7	319.5	323.6	316.5	310.4	304.3	305.4	297.3	296.3	288.2
40°	289.2	284.1	275.0	275.0	270.0	270.0	266.9	263.9	258.8	252.8	243.7
42.5°	239.6	235.6	231.5	232.6	225.5	231.5	223.5	228.5	212.3	211.3	205.3
45°	203.2	194.1	195.1	191.1	187.1	189.1	182.0	184.0	174.9	172.9	166.8
47.5°	164.8	161.8	155.7	153.7	153.7	150.7	147.6	146.6	142.6	137.5	129.4
50°	135.5	124.4	122.3	119.3	117.3	117.3	113.2	107.2	108.2	103.1	95.0
52.5°	106.2	97.1	93.0	92.0	88.0	85.9	80.9	76.8	73.8	71.8	66.7
55°	81.9	73.8	68.8	68.8	62.7	62.7	55.6	52.6	48.5	44.5	41.5
57.5°	61.7	57.6	52.6	48.5	46.5	41.5	37.4	32.4	29.3	23.3	19.2
60°	46.5	42.5	37.4	34.4	32.4	27.3	22.2	18.2	11.1	9.1	8.1
62.5°	34.4	30.3	25.3	23.3	21.2	17.2	12.1	6.1	3.0	3.0	3.0
65°	25.3	20.2	16.2	14.2	12.1	9.1	4.0	2.0	1.0	1.0	1.0
67.5°	17.2	13.1	9.1	8.1	6.1	3.0	1.0	1.0	1.0	1.0	1.0
70°	11.1	8.1	4.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	7.1	4.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P219493

CATALOG NUMBER: LDSQ4B15D010 EU4B10208040 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	843.3	843.3	843.3	843.3	843.3	843.3	843.3	843.3
2.5°	823.0	816.0	820.0	810.9	815.0	822.0	817.0	819.0
5°	794.7	790.7	785.6	772.5	782.6	790.7	786.6	785.6
7.5°	764.4	750.2	757.3	753.3	751.3	759.3	750.2	760.4
10°	733.1	722.9	721.9	714.9	714.9	720.9	721.9	715.9
12.5°	686.5	681.5	681.5	680.5	679.5	685.5	686.5	683.5
15°	653.2	651.2	646.1	645.1	639.0	648.1	649.1	648.1
17.5°	612.7	613.7	608.7	608.7	612.7	615.8	607.7	615.8
20°	585.4	580.4	578.4	569.3	574.3	579.4	579.4	580.4
22.5°	546.0	537.9	540.9	535.9	532.9	539.9	539.9	543.0
25°	501.5	501.5	503.5	500.5	502.5	506.6	503.5	510.6
27.5°	459.0	463.1	463.1	459.0	461.1	473.2	478.3	470.2
30°	419.6	420.6	423.7	421.6	427.7	431.7	430.7	436.8
32.5°	375.1	380.2	382.2	379.2	381.2	390.3	385.2	384.2
35°	340.7	331.6	330.6	331.6	335.7	337.7	335.7	342.8
37.5°	291.2	288.2	284.1	285.1	288.2	292.2	294.2	299.3
40°	243.7	239.6	239.6	238.6	235.6	246.7	246.7	246.7
42.5°	202.2	201.2	196.2	196.2	200.2	203.2	201.2	208.3
45°	165.8	161.8	158.7	158.7	161.8	161.8	164.8	163.8
47.5°	130.4	126.4	127.4	124.4	127.4	131.4	126.4	127.4
50°	98.1	98.1	96.1	98.1	97.1	98.1	96.1	94.0
52.5°	66.7	75.8	76.8	72.8	63.7	55.6	50.6	54.6
55°	38.4	34.4	34.4	33.4	31.3	30.3	27.3	30.3
57.5°	19.2	17.2	17.2	17.2	16.2	15.2	13.1	13.1
60°	8.1	7.1	7.1	6.1	5.1	4.0	3.0	4.0
62.5°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
65°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)