

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: P219492

Luminaire Tested: **LDSQ4B15D010 EU4B10208035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219492
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 EU4B10208035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1196.0 lumens
Efficiency: N/A
Efficacy: 83.1 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

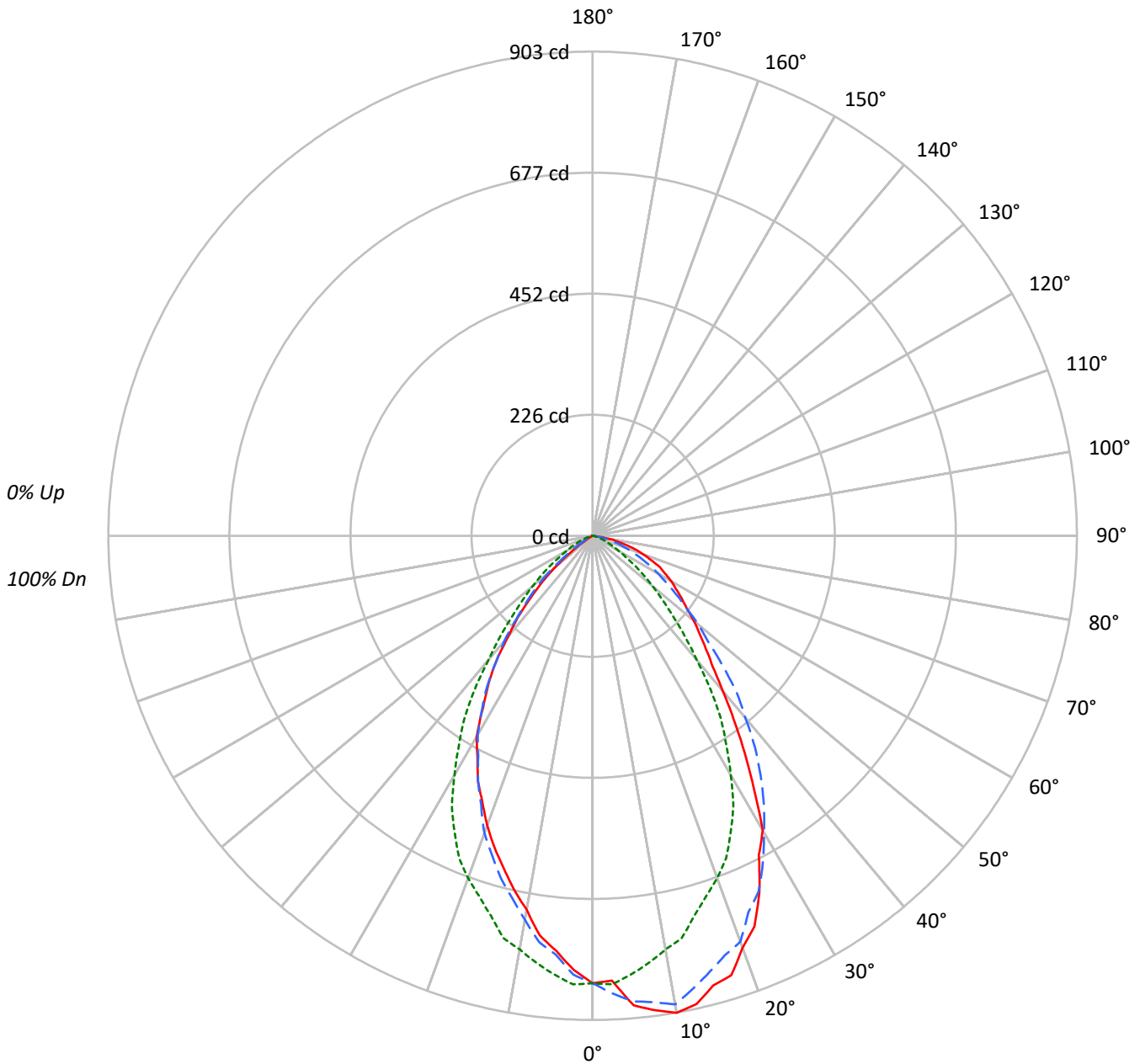
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219492

CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 4LBSQLWWLI

Luminous Intensity Polar Plot





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CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 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°	80833	80833	80833
5°	85518	79877	75599
10°	88867	77063	69675
15°	87094	73545	64318
20°	84268	70031	59206
25°	78596	65128	54001
30°	70954	57631	48347
35°	58446	49339	40115
40°	47701	38078	30869
45°	40977	28921	22208
50°	37090	22019	14016
55°	34134	15876	5067
60°	32763	10850	775
65°	31656	7335	229
70°	28324	5098	283
75°	23206	2620	0
80°	14505	1116	0
85°	0	0	0



TEST NUMBER: P219492

CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.2	6.5
10°-20°	210.6	17.6
20°-30°	281.2	23.5
30°-40°	267.0	22.3
40°-50°	184.5	15.4
50°-60°	102.0	8.5
60°-70°	50.6	4.2
70°-80°	19.9	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°	570.0	47.7
0°-40°	837.0	70.0
0°-60°	1123.5	93.9
0°-90°	1196.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1196.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	834	834	834	834	834	
5°	879	871	821	784	777	84
15°	868	842	733	661	641	246
25°	735	732	609	505	505	335
35°	494	546	417	343	339	310
45°	299	343	211	173	162	233
55°	202	190	94	48	30	182
65°	138	100	32	1	1	134
75°	62	38	7	0	0	66
85°	0	1	0	0	0	6
90°	0	0	0	0	0	



TEST NUMBER: P219492

CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4
2.5°	830.4	853.4	855.4	853.4	856.4	855.4	860.4	855.4	861.4	852.4	854.4
5°	879.4	870.4	889.4	879.4	879.4	878.4	875.4	874.4	878.4	865.4	871.4
7.5°	892.4	905.4	922.4	901.4	902.4	902.4	896.4	894.4	894.4	870.4	877.4
10°	903.4	895.4	904.4	896.4	903.4	902.4	906.4	893.4	902.4	888.4	887.4
12.5°	894.4	891.4	903.4	890.4	886.4	887.4	882.4	879.4	882.4	866.4	865.4
15°	868.4	871.4	889.4	875.4	873.4	871.4	865.4	855.4	863.4	841.4	842.4
17.5°	859.4	854.4	857.4	845.4	848.4	846.4	845.4	836.4	834.4	820.4	820.4
20°	817.4	828.4	828.4	820.4	820.4	819.4	806.4	814.4	805.4	801.4	805.4
22.5°	788.4	789.4	789.4	782.4	783.4	779.4	772.4	767.4	772.4	767.4	759.3
25°	735.3	737.3	749.3	736.3	734.3	738.3	732.3	729.3	728.3	716.3	732.3
27.5°	671.3	691.3	690.3	685.3	691.3	683.3	680.3	681.3	684.3	683.3	687.3
30°	634.3	637.3	640.3	636.3	637.3	634.3	634.3	635.3	643.3	640.3	639.3
32.5°	559.3	569.3	577.3	577.3	578.3	581.3	580.3	601.3	606.3	596.3	594.3
35°	494.2	501.2	508.2	509.2	522.2	523.2	524.2	530.2	544.2	547.3	546.2
37.5°	432.2	439.2	441.2	450.2	457.2	464.2	472.2	480.2	492.2	502.2	497.2
40°	377.2	380.2	385.2	389.2	403.2	403.2	407.2	423.2	436.2	444.2	443.2
42.5°	331.2	332.2	336.2	343.2	356.2	353.2	356.2	367.2	386.2	387.2	398.2
45°	299.1	298.1	301.1	302.1	310.1	314.1	316.1	324.1	340.2	342.2	343.2
47.5°	270.1	269.1	274.1	276.1	279.1	283.1	283.1	284.1	290.1	295.1	291.1
50°	246.1	246.1	246.1	248.1	253.1	252.1	253.1	257.1	260.1	258.1	257.1
52.5°	220.1	224.1	227.1	228.1	229.1	229.1	230.1	228.1	227.1	224.1	218.1
55°	202.1	206.1	206.1	206.1	206.1	210.1	205.1	206.1	206.1	198.1	190.1
57.5°	184.1	188.1	191.1	187.1	191.1	187.1	185.1	184.1	182.1	174.1	162.1
60°	169.1	171.1	170.1	169.1	171.1	168.1	166.1	162.1	160.1	149.1	141.1
62.5°	152.1	153.1	154.1	152.1	150.1	149.1	145.1	139.1	135.1	126.1	119.1
65°	138.1	135.1	134.1	133.1	131.1	128.1	125.1	118.1	115.1	107.0	100.0
67.5°	117.1	116.1	118.1	115.1	110.1	110.1	107.0	101.0	94.0	89.0	82.0
70°	100.0	99.0	97.0	94.0	93.0	89.0	89.0	82.0	80.0	71.0	65.0
72.5°	82.0	82.0	79.0	76.0	73.0	71.0	70.0	65.0	62.0	57.0	52.0
75°	62.0	62.0	61.0	58.0	56.0	54.0	53.0	49.0	46.0	41.0	38.0
77.5°	44.0	44.0	40.0	38.0	39.0	37.0	35.0	34.0	33.0	30.0	26.0
80°	26.0	25.0	22.0	23.0	22.0	22.0	21.0	20.0	18.0	16.0	14.0
82.5°	7.0	8.0	8.0	8.0	9.0	7.0	7.0	7.0	8.0	8.0	5.0
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: P219492

CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4
2.5°	844.4	843.4	844.4	837.4	853.4	841.4	839.4	837.4	844.4	837.4	827.4
5°	862.4	852.4	849.4	846.4	855.4	841.4	838.4	839.4	834.4	821.4	822.4
7.5°	868.4	859.4	850.4	831.4	839.4	836.4	828.4	822.4	814.4	803.4	801.4
10°	870.4	860.4	847.4	841.4	829.4	825.4	822.4	812.4	802.4	783.4	778.4
12.5°	864.4	852.4	836.4	831.4	822.4	809.4	802.4	792.4	783.4	768.4	757.3
15°	838.4	828.4	823.4	806.4	802.4	794.4	780.4	766.4	753.3	733.3	727.3
17.5°	808.4	804.4	799.4	786.4	785.4	777.4	764.3	752.3	735.3	704.3	694.3
20°	777.4	777.4	761.3	756.3	766.4	750.3	740.3	729.3	694.3	679.3	661.3
22.5°	754.3	743.3	734.3	726.3	727.3	717.3	703.3	681.3	668.3	650.3	629.3
25°	709.3	713.3	693.3	690.3	693.3	670.3	663.3	645.3	626.3	609.3	593.3
27.5°	681.3	670.3	657.3	646.3	646.3	637.3	617.3	613.3	584.3	568.3	548.3
30°	639.3	631.3	620.3	604.3	602.3	595.3	579.3	569.3	539.2	515.2	504.2
32.5°	586.3	583.3	574.3	556.3	550.3	542.2	522.2	505.2	491.2	464.2	451.2
35°	548.3	537.2	518.2	503.2	498.2	484.2	468.2	456.2	441.2	417.2	400.2
37.5°	491.2	480.2	462.2	444.2	444.2	430.2	408.2	396.2	375.2	361.2	347.2
40°	441.2	427.2	409.2	388.2	385.2	365.2	356.2	336.2	323.1	301.1	299.1
42.5°	385.2	372.2	356.2	340.2	328.2	318.1	295.1	280.1	266.1	255.1	252.1
45°	334.2	317.1	303.1	283.1	271.1	259.1	244.1	234.1	223.1	211.1	204.1
47.5°	290.1	276.1	256.1	238.1	226.1	220.1	203.1	192.1	183.1	175.1	170.1
50°	245.1	228.1	217.1	197.1	195.1	181.1	167.1	158.1	153.1	146.1	139.1
52.5°	211.1	195.1	180.1	165.1	157.1	152.1	139.1	130.1	123.1	118.1	114.1
55°	178.1	164.1	152.1	137.1	132.1	125.1	110.1	108.0	101.0	94.0	89.0
57.5°	153.1	140.1	126.1	116.1	107.0	102.0	90.0	82.0	78.0	72.0	67.0
60°	130.1	116.1	105.0	93.0	89.0	82.0	73.0	66.0	61.0	56.0	51.0
62.5°	109.0	97.0	85.0	75.0	69.0	65.0	58.0	52.0	47.0	43.0	39.0
65°	90.0	79.0	69.0	59.0	56.0	51.0	46.0	41.0	37.0	32.0	28.0
67.5°	74.0	64.0	54.0	47.0	44.0	42.0	36.0	31.0	28.0	25.0	21.0
70°	58.0	51.0	43.0	37.0	34.0	31.0	27.0	24.0	20.0	18.0	15.0
72.5°	45.0	39.0	32.0	27.0	25.0	23.0	19.0	16.0	14.0	12.0	10.0
75°	32.0	27.0	23.0	18.0	17.0	16.0	13.0	11.0	9.0	7.0	6.0
77.5°	22.0	18.0	14.0	12.0	11.0	9.0	8.0	6.0	5.0	4.0	3.0
80°	12.0	9.0	7.0	6.0	5.0	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: P219492

CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4
2.5°	833.4	822.4	825.4	825.4	823.4	823.4	821.4	818.4	819.4	813.4	800.4
5°	824.4	810.4	808.4	810.4	802.4	800.4	796.4	802.4	784.4	791.4	783.4
7.5°	798.4	785.4	782.4	789.4	779.4	773.4	772.4	780.4	764.3	756.3	747.3
10°	769.4	764.3	755.3	750.3	747.3	748.3	740.3	730.3	727.3	725.3	717.3
12.5°	743.3	732.3	724.3	718.3	716.3	716.3	703.3	701.3	692.3	690.3	678.3
15°	712.3	699.3	694.3	686.3	679.3	683.3	668.3	664.3	661.3	648.3	650.3
17.5°	685.3	671.3	659.3	654.3	648.3	642.3	628.3	631.3	624.3	624.3	606.3
20°	650.3	635.3	626.3	616.3	616.3	608.3	598.3	599.3	590.3	581.3	565.3
22.5°	613.3	597.3	586.3	582.3	572.3	570.3	558.3	555.3	543.2	544.2	530.2
25°	574.3	558.3	543.2	544.2	535.2	531.2	524.2	510.2	505.2	499.2	495.2
27.5°	528.2	517.2	504.2	503.2	486.2	487.2	478.2	474.2	462.2	465.2	456.2
30°	486.2	470.2	458.2	455.2	448.2	446.2	432.2	426.2	428.2	420.2	415.2
32.5°	443.2	419.2	414.2	408.2	404.2	399.2	389.2	393.2	384.2	386.2	378.2
35°	386.2	376.2	363.2	363.2	359.2	355.2	348.2	352.2	343.2	339.2	331.2
37.5°	338.2	329.2	316.1	320.1	313.1	307.1	301.1	302.1	294.1	293.1	285.1
40°	286.1	281.1	272.1	272.1	267.1	267.1	264.1	261.1	256.1	250.1	241.1
42.5°	237.1	233.1	229.1	230.1	223.1	229.1	221.1	226.1	210.1	209.1	203.1
45°	201.1	192.1	193.1	189.1	185.1	187.1	180.1	182.1	173.1	171.1	165.1
47.5°	163.1	160.1	154.1	152.1	152.1	149.1	146.1	145.1	141.1	136.1	128.1
50°	134.1	123.1	121.1	118.1	116.1	116.1	112.1	106.0	107.0	102.0	94.0
52.5°	105.0	96.0	92.0	91.0	87.0	85.0	80.0	76.0	73.0	71.0	66.0
55°	81.0	73.0	68.0	68.0	62.0	62.0	55.0	52.0	48.0	44.0	41.0
57.5°	61.0	57.0	52.0	48.0	46.0	41.0	37.0	32.0	29.0	23.0	19.0
60°	46.0	42.0	37.0	34.0	32.0	27.0	22.0	18.0	11.0	9.0	8.0
62.5°	34.0	30.0	25.0	23.0	21.0	17.0	12.0	6.0	3.0	3.0	3.0
65°	25.0	20.0	16.0	14.0	12.0	9.0	4.0	2.0	1.0	1.0	1.0
67.5°	17.0	13.0	9.0	8.0	6.0	3.0	1.0	1.0	1.0	1.0	1.0
70°	11.0	8.0	4.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	7.0	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: P219492

CATALOG NUMBER: LDSQ4B15D010 EU4B10208035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	834.4	834.4	834.4	834.4	834.4	834.4	834.4	834.4
2.5°	814.4	807.4	811.4	802.4	806.4	813.4	808.4	810.4
5°	786.4	782.4	777.4	764.3	774.4	782.4	778.4	777.4
7.5°	756.3	742.3	749.3	745.3	743.3	751.3	742.3	752.3
10°	725.3	715.3	714.3	707.3	707.3	713.3	714.3	708.3
12.5°	679.3	674.3	674.3	673.3	672.3	678.3	679.3	676.3
15°	646.3	644.3	639.3	638.3	632.3	641.3	642.3	641.3
17.5°	606.3	607.3	602.3	602.3	606.3	609.3	601.3	609.3
20°	579.3	574.3	572.3	563.3	568.3	573.3	573.3	574.3
22.5°	540.2	532.2	535.2	530.2	527.2	534.2	534.2	537.2
25°	496.2	496.2	498.2	495.2	497.2	501.2	498.2	505.2
27.5°	454.2	458.2	458.2	454.2	456.2	468.2	473.2	465.2
30°	415.2	416.2	419.2	417.2	423.2	427.2	426.2	432.2
32.5°	371.2	376.2	378.2	375.2	377.2	386.2	381.2	380.2
35°	337.2	328.2	327.1	328.2	332.2	334.2	332.2	339.2
37.5°	288.1	285.1	281.1	282.1	285.1	289.1	291.1	296.1
40°	241.1	237.1	237.1	236.1	233.1	244.1	244.1	244.1
42.5°	200.1	199.1	194.1	194.1	198.1	201.1	199.1	206.1
45°	164.1	160.1	157.1	157.1	160.1	160.1	163.1	162.1
47.5°	129.1	125.1	126.1	123.1	126.1	130.1	125.1	126.1
50°	97.0	97.0	95.0	97.0	96.0	97.0	95.0	93.0
52.5°	66.0	75.0	76.0	72.0	63.0	55.0	50.0	54.0
55°	38.0	34.0	34.0	33.0	31.0	30.0	27.0	30.0
57.5°	19.0	17.0	17.0	17.0	16.0	15.0	13.0	13.0
60°	8.0	7.0	7.0	6.0	5.0	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)