

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: P219489

Luminaire Tested: **LDSQ4B10D010 EU4B10209730 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219489
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: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 625.3 lumens
Efficiency: N/A
Efficacy: 62.2 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

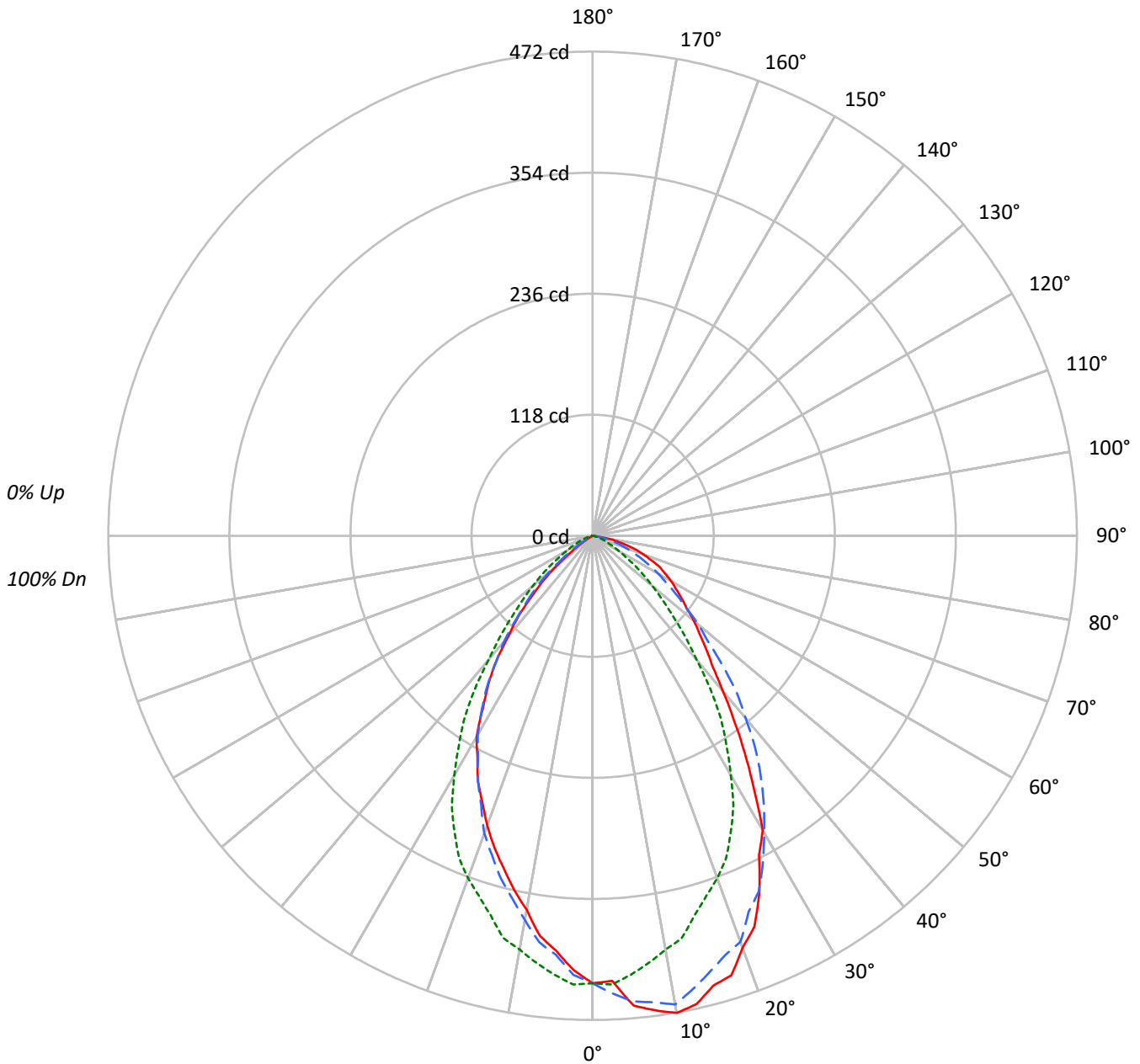
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219489

CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

Luminous Intensity Polar Plot





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CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	42257	42257	42257
5°	44713	41757	39521
10°	46460	40292	36426
15°	45533	38452	33628
20°	44062	36619	30948
25°	41099	34055	28240
30°	37093	30136	25281
35°	30559	25793	20968
40°	24938	19905	16137
45°	21427	15125	11604
50°	19397	11514	7325
55°	17852	8310	2652
60°	17128	5677	407
65°	16550	3828	115
70°	14814	2663	142
75°	12127	1385	0
80°	7587	558	0
85°	0	0	0



TEST NUMBER: P219489

CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.9	6.5
10°-20°	110.1	17.6
20°-30°	147.0	23.5
30°-40°	139.6	22.3
40°-50°	96.5	15.4
50°-60°	53.3	8.5
60°-70°	26.5	4.2
70°-80°	10.4	1.7
80°-90°	1.0	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°	298.0	47.7
0°-40°	437.6	70.0
0°-60°	587.4	93.9
0°-90°	625.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	625.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	436	436	436	436	436	
5°	460	456	429	410	406	44
15°	454	440	383	346	335	128
25°	384	383	319	264	264	175
35°	258	286	218	179	177	162
45°	156	179	110	90	85	122
55°	106	99	49	25	16	95
65°	72	52	17	0	0	70
75°	32	20	4	0	0	35
85°	0	0	0	0	0	3
90°	0	0	0	0	0	



TEST NUMBER: P219489

CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2
2.5°	434.2	446.2	447.2	446.2	447.8	447.2	449.8	447.2	450.4	445.7	446.7
5°	459.8	455.1	465.0	459.8	459.8	459.3	457.7	457.2	459.3	452.5	455.6
7.5°	466.6	473.4	482.3	471.3	471.8	471.8	468.7	467.6	467.6	455.1	458.7
10°	472.3	468.2	472.9	468.7	472.3	471.8	473.9	467.1	471.8	464.5	464.0
12.5°	467.6	466.1	472.3	465.5	463.4	464.0	461.4	459.8	461.4	453.0	452.5
15°	454.0	455.6	465.0	457.7	456.6	455.6	452.5	447.2	451.4	439.9	440.4
17.5°	449.3	446.7	448.3	442.0	443.6	442.5	442.0	437.3	436.2	428.9	428.9
20°	427.4	433.1	433.1	428.9	428.9	428.4	421.6	425.8	421.1	419.0	421.1
22.5°	412.2	412.7	412.7	409.0	409.6	407.5	403.8	401.2	403.8	401.2	397.0
25°	384.5	385.5	391.8	385.0	383.9	386.0	382.9	381.3	380.8	374.5	382.9
27.5°	351.0	361.4	360.9	358.3	361.4	357.3	355.7	356.2	357.8	357.3	359.4
30°	331.6	333.2	334.8	332.7	333.2	331.6	331.6	332.2	336.3	334.8	334.2
32.5°	292.4	297.6	301.8	301.8	302.3	303.9	303.4	314.4	317.0	311.8	310.7
35°	258.4	262.1	265.7	266.2	273.0	273.6	274.1	277.2	284.6	286.1	285.6
37.5°	226.0	229.6	230.7	235.4	239.0	242.7	246.9	251.1	257.4	262.6	260.0
40°	197.2	198.8	201.4	203.5	210.8	210.8	212.9	221.3	228.1	232.2	231.7
42.5°	173.1	173.7	175.8	179.4	186.2	184.6	186.2	192.0	201.9	202.4	208.2
45°	156.4	155.9	157.4	158.0	162.2	164.2	165.3	169.5	177.8	178.9	179.4
47.5°	141.2	140.7	143.3	144.4	145.9	148.0	148.0	148.6	151.7	154.3	152.2
50°	128.7	128.7	128.7	129.7	132.3	131.8	132.3	134.4	136.0	135.0	134.4
52.5°	115.1	117.2	118.7	119.3	119.8	119.8	120.3	119.3	118.7	117.2	114.0
55°	105.7	107.8	107.8	107.8	107.8	109.8	107.2	107.8	107.8	103.6	99.4
57.5°	96.2	98.3	99.9	97.8	99.9	97.8	96.8	96.2	95.2	91.0	84.7
60°	88.4	89.4	88.9	88.4	89.4	87.9	86.8	84.7	83.7	77.9	73.8
62.5°	79.5	80.0	80.6	79.5	78.5	77.9	75.8	72.7	70.6	65.9	62.2
65°	72.2	70.6	70.1	69.6	68.5	67.0	65.4	61.7	60.2	56.0	52.3
67.5°	61.2	60.7	61.7	60.2	57.5	57.5	56.0	52.8	49.2	46.6	42.9
70°	52.3	51.8	50.7	49.2	48.6	46.6	46.6	42.9	41.8	37.1	34.0
72.5°	42.9	42.9	41.3	39.8	38.2	37.1	36.6	34.0	32.4	29.8	27.2
75°	32.4	32.4	31.9	30.3	29.3	28.2	27.7	25.6	24.1	21.4	19.9
77.5°	23.0	23.0	20.9	19.9	20.4	19.4	18.3	17.8	17.3	15.7	13.6
80°	13.6	13.1	11.5	12.0	11.5	11.5	11.0	10.5	9.4	8.4	7.3
82.5°	3.7	4.2	4.2	4.2	4.7	3.7	3.7	3.7	4.2	4.2	2.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5
87.5°	0.5	1.0	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6	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: P219489

CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2
2.5°	441.5	441.0	441.5	437.8	446.2	439.9	438.9	437.8	441.5	437.8	432.6
5°	450.9	445.7	444.1	442.5	447.2	439.9	438.3	438.9	436.2	429.4	430.0
7.5°	454.0	449.3	444.6	434.7	438.9	437.3	433.1	430.0	425.8	420.0	419.0
10°	455.1	449.8	443.0	439.9	433.6	431.5	430.0	424.7	419.5	409.6	407.0
12.5°	451.9	445.7	437.3	434.7	430.0	423.2	419.5	414.3	409.6	401.7	396.0
15°	438.3	433.1	430.5	421.6	419.5	415.3	408.0	400.7	393.9	383.4	380.3
17.5°	422.6	420.6	417.9	411.1	410.6	406.4	399.6	393.4	384.5	368.2	363.0
20°	406.4	406.4	398.1	395.4	400.7	392.3	387.1	381.3	363.0	355.2	345.8
22.5°	394.4	388.6	383.9	379.8	380.3	375.0	367.7	356.2	349.4	340.0	329.0
25°	370.9	373.0	362.5	360.9	362.5	350.5	346.8	337.4	327.4	318.6	310.2
27.5°	356.2	350.5	343.7	337.9	337.9	333.2	322.7	320.6	305.5	297.1	286.6
30°	334.2	330.1	324.3	315.9	314.9	311.2	302.9	297.6	281.9	269.4	263.6
32.5°	306.5	305.0	300.2	290.8	287.7	283.5	273.0	264.2	256.8	242.7	235.9
35°	286.6	280.9	271.0	263.1	260.5	253.2	244.8	238.5	230.7	218.1	209.2
37.5°	256.8	251.1	241.7	232.2	232.2	224.9	213.4	207.1	196.2	188.8	181.5
40°	230.7	223.4	213.9	203.0	201.4	190.9	186.2	175.8	169.0	157.4	156.4
42.5°	201.4	194.6	186.2	177.8	171.6	166.3	154.3	146.5	139.1	133.4	131.8
45°	174.7	165.8	158.5	148.0	141.8	135.5	127.6	122.4	116.6	110.4	106.7
47.5°	151.7	144.4	133.9	124.5	118.2	115.1	106.2	100.4	95.7	91.5	88.9
50°	128.2	119.3	113.5	103.0	102.0	94.7	87.4	82.6	80.0	76.4	72.7
52.5°	110.4	102.0	94.2	86.3	82.1	79.5	72.7	68.0	64.3	61.7	59.6
55°	93.1	85.8	79.5	71.7	69.0	65.4	57.5	56.5	52.8	49.2	46.6
57.5°	80.0	73.2	65.9	60.7	56.0	53.4	47.1	42.9	40.8	37.7	35.0
60°	68.0	60.7	54.9	48.6	46.6	42.9	38.2	34.5	31.9	29.3	26.7
62.5°	57.0	50.7	44.5	39.2	36.1	34.0	30.3	27.2	24.6	22.5	20.4
65°	47.1	41.3	36.1	30.9	29.3	26.7	24.1	21.4	19.4	16.7	14.6
67.5°	38.7	33.5	28.2	24.6	23.0	22.0	18.8	16.2	14.6	13.1	11.0
70°	30.3	26.7	22.5	19.4	17.8	16.2	14.1	12.6	10.5	9.4	7.8
72.5°	23.5	20.4	16.7	14.1	13.1	12.0	9.9	8.4	7.3	6.3	5.2
75°	16.7	14.1	12.0	9.4	8.9	8.4	6.8	5.8	4.7	3.7	3.1
77.5°	11.5	9.4	7.3	6.3	5.8	4.7	4.2	3.1	2.6	2.1	1.6
80°	6.3	4.7	3.7	3.1	2.6	2.1	2.1	1.6	1.0	1.0	0.5
82.5°	2.1	1.6	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5
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°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	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: P219489

CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2
2.5°	435.7	430.0	431.5	431.5	430.5	430.5	429.4	427.9	428.4	425.3	418.5
5°	431.0	423.7	422.6	423.7	419.5	418.5	416.4	419.5	410.1	413.8	409.6
7.5°	417.4	410.6	409.0	412.7	407.5	404.3	403.8	408.0	399.6	395.4	390.7
10°	402.2	399.6	394.9	392.3	390.7	391.3	387.1	381.8	380.3	379.2	375.0
12.5°	388.6	382.9	378.7	375.6	374.5	374.5	367.7	366.7	362.0	360.9	354.6
15°	372.4	365.6	363.0	358.8	355.2	357.3	349.4	347.3	345.8	339.0	340.0
17.5°	358.3	351.0	344.7	342.1	339.0	335.8	328.5	330.1	326.4	326.4	317.0
20°	340.0	332.2	327.4	322.2	322.2	318.0	312.8	313.3	308.6	303.9	295.5
22.5°	320.6	312.3	306.5	304.4	299.2	298.2	291.9	290.3	284.0	284.6	277.2
25°	300.2	291.9	284.0	284.6	279.8	277.8	274.1	266.8	264.2	261.0	258.9
27.5°	276.2	270.4	263.6	263.1	254.2	254.7	250.0	247.9	241.7	243.2	238.5
30°	254.2	245.8	239.6	238.0	234.3	233.3	226.0	222.8	223.9	219.7	217.1
32.5°	231.7	219.2	216.6	213.4	211.3	208.7	203.5	205.6	200.9	201.9	197.7
35°	201.9	196.7	189.9	189.9	187.8	185.7	182.0	184.1	179.4	177.3	173.1
37.5°	176.8	172.1	165.3	167.4	163.7	160.6	157.4	158.0	153.8	153.3	149.1
40°	149.6	147.0	142.3	142.3	139.7	139.7	138.1	136.5	133.9	130.8	126.1
42.5°	124.0	121.9	119.8	120.3	116.6	119.8	115.6	118.2	109.8	109.3	106.2
45°	105.1	100.4	101.0	98.9	96.8	97.8	94.2	95.2	90.5	89.4	86.3
47.5°	85.3	83.7	80.6	79.5	79.5	77.9	76.4	75.8	73.8	71.1	67.0
50°	70.1	64.3	63.3	61.7	60.7	60.7	58.6	55.4	56.0	53.4	49.2
52.5°	54.9	50.2	48.1	47.6	45.5	44.5	41.8	39.8	38.2	37.1	34.5
55°	42.4	38.2	35.6	35.6	32.4	32.4	28.8	27.2	25.1	23.0	21.4
57.5°	31.9	29.8	27.2	25.1	24.1	21.4	19.4	16.7	15.2	12.0	9.9
60°	24.1	22.0	19.4	17.8	16.7	14.1	11.5	9.4	5.8	4.7	4.2
62.5°	17.8	15.7	13.1	12.0	11.0	8.9	6.3	3.1	1.6	1.6	1.6
65°	13.1	10.5	8.4	7.3	6.3	4.7	2.1	1.0	0.5	0.5	0.5
67.5°	8.9	6.8	4.7	4.2	3.1	1.6	0.5	0.5	0.5	0.5	0.5
70°	5.8	4.2	2.1	1.6	1.0	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	3.7	2.1	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.5	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	0.5	0.5	0.5
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: P219489

CATALOG NUMBER: LDSQ4B10D010 EU4B10209730 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	436.2	436.2	436.2	436.2	436.2	436.2	436.2	436.2
2.5°	425.8	422.1	424.2	419.5	421.6	425.3	422.6	423.7
5°	411.1	409.0	406.4	399.6	404.9	409.0	407.0	406.4
7.5°	395.4	388.1	391.8	389.7	388.6	392.8	388.1	393.4
10°	379.2	374.0	373.5	369.8	369.8	373.0	373.5	370.3
12.5°	355.2	352.6	352.6	352.0	351.5	354.6	355.2	353.6
15°	337.9	336.9	334.2	333.7	330.6	335.3	335.8	335.3
17.5°	317.0	317.5	314.9	314.9	317.0	318.6	314.4	318.6
20°	302.9	300.2	299.2	294.5	297.1	299.7	299.7	300.2
22.5°	282.5	278.3	279.8	277.2	275.7	279.3	279.3	280.9
25°	259.4	259.4	260.5	258.9	260.0	262.1	260.5	264.2
27.5°	237.5	239.6	239.6	237.5	238.5	244.8	247.4	243.2
30°	217.1	217.6	219.2	218.1	221.3	223.4	222.8	226.0
32.5°	194.1	196.7	197.7	196.2	197.2	201.9	199.3	198.8
35°	176.3	171.6	171.0	171.6	173.7	174.7	173.7	177.3
37.5°	150.6	149.1	147.0	147.5	149.1	151.2	152.2	154.8
40°	126.1	124.0	124.0	123.4	121.9	127.6	127.6	127.6
42.5°	104.6	104.1	101.5	101.5	103.6	105.1	104.1	107.8
45°	85.8	83.7	82.1	82.1	83.7	83.7	85.3	84.7
47.5°	67.5	65.4	65.9	64.3	65.9	68.0	65.4	65.9
50°	50.7	50.7	49.7	50.7	50.2	50.7	49.7	48.6
52.5°	34.5	39.2	39.8	37.7	33.0	28.8	26.2	28.2
55°	19.9	17.8	17.8	17.3	16.2	15.7	14.1	15.7
57.5°	9.9	8.9	8.9	8.9	8.4	7.8	6.8	6.8
60°	4.2	3.7	3.7	3.1	2.6	2.1	1.6	2.1
62.5°	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
65°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
67.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)