

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: P209056

Luminaire Tested: **LDSQA6A65927D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209056
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26687)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A65927D010TE LARH30NF 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 30° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4506.7 lumens
Efficiency: N/A
Efficacy: 57.3 lumens/watt
Spacing Criteria (0/90/45): 2.58 / 0.47 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

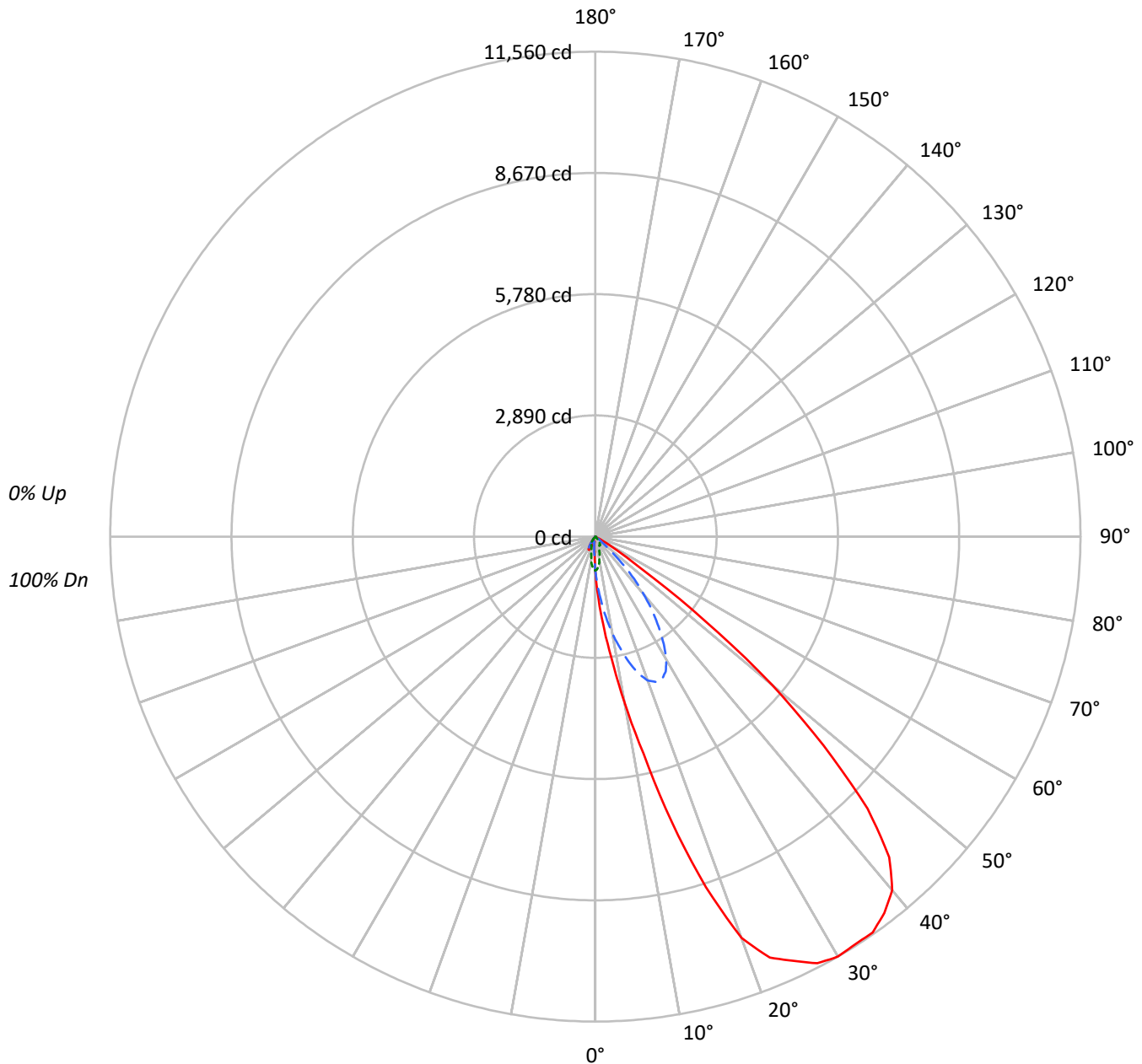
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	109	106	103	110	107	104	102	103	100	98		99	97	95		95
2	105	99	94	90	103	97	93	89	94	90	87		91	88	85		88
3	98	90	84	79	96	89	83	78	86	81	77		83	79	76		81
4	91	82	75	70	89	81	74	69	78	73	68		76	71	67		74
5	85	74	67	62	83	73	67	61	71	65	61		70	64	60		68
6	79	68	60	55	77	67	60	55	65	59	54		64	58	54		62
7	74	62	55	49	72	61	54	49	60	53	49		59	53	49		57
8	69	57	49	44	67	56	49	44	55	49	44		54	48	44		53
9	64	52	45	40	63	52	45	40	51	44	40		50	44	40		49
10	60	48	41	36	59	48	41	36	47	40	36		46	40	36		45

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	35000	35000	35000
5°	89781	31840	9919
10°	175015	24470	4765
15°	314170	16622	6392
20°	466445	12614	10552
25°	530189	10394	16547
30°	574731	11365	15561
35°	605380	7364	9650
40°	618470	3271	4699
45°	558598	1248	1748
50°	367708	496	496
55°	100700	428	0
60°	20107	491	0
65°	1416	672	0
70°	201	831	0
75°	0	1231	0
80°	0	1835	198
85°	0	3656	395



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.6	2.2
10°-20°	529.0	11.7
20°-30°	1199.0	26.6
30°-40°	1439.3	31.9
40°-50°	1014.4	22.5
50°-60°	209.3	4.6
60°-70°	7.4	0.2
70°-80°	4.4	0.1
80°-90°	4.3	0.1
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°	1827.6	40.6
0°-40°	3266.9	72.5
0°-60°	4490.6	99.6
0°-90°	4506.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4506.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	813	813	813	813	813	
5°	2077	1514	737	306	230	256
15°	7048	3101	373	133	143	2092
25°	11160	3751	219	306	348	5150
35°	11518	2626	140	184	184	7160
45°	9174	901	20	28	29	6747
55°	1342	18	6	4	0	1768
65°	14	4	7	4	0	41
75°	0	4	7	5	0	0
85°	0	5	7	5	1	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9
2.5°	1385.7	1343.9	1360.3	1312.0	1301.3	1292.3	1301.3	1248.9	1219.4	1181.7	1151.4
5°	2077.3	2027.4	2038.8	1954.4	1915.9	1889.7	1884.8	1776.6	1695.5	1606.2	1513.6
7.5°	2891.9	2844.4	2837.8	2706.7	2627.2	2582.1	2563.3	2408.4	2268.3	2109.3	1935.6
10°	4003.1	3894.9	3861.3	3671.2	3519.6	3423.7	3305.7	3058.3	2812.4	2572.3	2351.1
12.5°	5296.2	5237.2	5153.6	4818.5	4553.0	4416.9	4240.7	3854.0	3481.9	3085.3	2714.9
15°	7048.2	6838.5	6695.9	6211.6	5783.8	5574.0	5316.7	4725.0	4162.9	3660.6	3100.9
17.5°	8760.1	8650.3	8427.4	7798.9	7140.0	6809.0	6425.4	5621.5	4827.5	4112.9	3429.5
20°	10180.2	10077.0	9823.0	9230.5	8499.5	8011.1	7528.4	6425.4	5388.0	4473.5	3649.1
22.5°	10860.4	10794.8	10587.5	10080.3	9457.5	8992.8	8474.1	7109.7	5802.6	4709.5	3749.1
25°	11160.3	11130.0	10996.4	10596.5	10009.8	9615.6	9125.6	7594.0	6060.8	4819.3	3750.7
27.5°	11464.3	11470.1	11175.1	10858.8	10302.3	9923.7	9451.7	7808.7	6107.5	4757.8	3627.8
30°	11560.2	11499.6	11369.3	10915.3	10386.7	9984.4	9478.0	7709.5	5915.7	4505.4	3382.8
32.5°	11520.9	11497.1	11353.7	10873.5	10243.3	9800.0	9224.7	7316.2	5537.1	4144.9	3035.3
35°	11517.6	11473.4	11144.8	10732.6	9956.5	9409.1	8651.1	6680.3	5001.2	3669.6	2626.4
37.5°	11309.5	11199.7	10953.0	10397.4	9374.7	8680.6	7830.8	5903.4	4345.6	3136.1	2220.8
40°	11003.8	10856.3	10531.8	9691.0	8366.8	7567.0	6737.7	5020.9	3651.5	2610.0	1789.7
42.5°	10365.4	10142.5	9683.6	8527.4	7023.7	6302.5	5612.5	4126.8	2977.9	2126.5	1366.1
45°	9173.9	8869.1	8248.8	6979.4	5674.0	5085.6	4530.8	3320.5	2383.8	1577.5	900.6
47.5°	7373.6	7090.9	6526.2	5556.0	4449.7	3952.3	3509.8	2469.9	1616.0	913.7	430.2
50°	5489.6	5247.0	4806.2	3861.3	2987.0	2596.1	2217.5	1402.9	757.2	434.3	178.6
52.5°	3275.4	3154.9	2764.1	2141.3	1475.0	1271.0	1020.2	594.1	381.9	157.3	48.3
55°	1341.5	1238.2	1091.5	876.0	641.6	544.1	465.5	293.4	118.8	32.8	18.0
57.5°	606.4	583.5	517.1	406.5	295.0	247.5	167.2	55.7	26.2	16.4	10.7
60°	233.5	210.6	180.3	97.5	41.8	35.2	28.7	18.8	13.1	9.0	6.6
62.5°	33.6	32.0	28.7	22.9	18.0	16.4	13.9	9.8	7.4	5.7	4.9
65°	13.9	13.9	12.3	9.8	8.2	7.4	6.6	4.9	4.1	4.1	4.1
67.5°	5.7	5.7	4.9	4.1	3.3	3.3	3.3	2.5	3.3	3.3	4.1
70°	1.6	1.6	1.6	1.6	1.6	1.6	2.5	2.5	3.3	3.3	4.1
72.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.5	3.3	4.1	4.1
75°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.5	3.3	4.1	4.1
77.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.1
80°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.9
82.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.9
85°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.9
87.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.5	2.5	3.3	4.1	4.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9
2.5°	1125.1	1072.7	1057.9	1012.0	973.5	954.7	930.9	877.6	837.5	784.2	752.3
5°	1448.8	1349.7	1271.0	1175.1	1112.0	1071.0	1007.1	909.6	830.9	736.7	669.5
7.5°	1798.7	1617.6	1475.9	1317.7	1226.7	1155.4	1046.5	906.3	790.8	665.4	561.3
10°	2136.4	1865.9	1643.0	1416.0	1296.4	1197.2	1047.3	871.1	717.9	559.7	449.9
12.5°	2433.8	2084.7	1770.9	1479.1	1330.8	1207.1	1019.4	808.0	622.8	460.5	363.8
15°	2682.1	2254.4	1861.0	1502.9	1333.3	1185.8	961.2	717.9	517.1	372.9	304.8
17.5°	2870.6	2343.7	1888.9	1474.2	1285.7	1125.1	871.9	603.9	419.6	316.3	256.5
20°	2968.1	2360.9	1848.7	1396.4	1198.1	1033.3	754.7	490.0	355.6	275.3	214.7
22.5°	2980.4	2312.5	1752.8	1284.9	1087.4	921.9	625.3	408.9	317.1	243.4	189.3
25°	2907.5	2207.6	1616.0	1158.7	966.2	794.1	508.9	366.3	288.5	218.8	218.0
27.5°	2751.8	2027.4	1452.1	1012.0	819.5	645.7	431.9	331.1	257.3	231.9	246.7
30°	2532.2	1796.3	1250.5	826.8	640.0	496.6	363.8	272.9	226.2	228.6	240.9
32.5°	2234.7	1509.5	1013.7	605.6	458.1	373.7	272.9	186.0	187.7	188.5	199.1
35°	1861.0	1210.4	757.2	407.3	322.1	263.0	154.1	136.9	139.3	140.1	147.5
37.5°	1491.4	930.1	503.2	271.2	202.4	138.5	95.9	91.8	93.4	92.6	100.8
40°	1142.3	648.2	301.6	134.4	77.8	64.7	59.0	56.5	57.4	58.2	63.1
42.5°	808.8	351.6	149.1	50.8	41.0	37.7	35.2	33.6	34.4	34.4	37.7
45°	410.6	166.4	50.8	27.9	25.4	22.9	21.3	20.5	20.5	20.5	22.1
47.5°	177.8	54.9	23.8	17.2	15.6	14.8	13.1	12.3	12.3	12.3	13.1
50°	55.7	22.1	14.8	11.5	9.8	9.0	8.2	8.2	8.2	7.4	8.2
52.5°	20.5	13.9	9.8	7.4	6.6	6.6	6.6	5.7	6.6	5.7	6.6
55°	12.3	9.0	6.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
57.5°	8.2	6.6	5.7	5.7	4.9	4.9	5.7	5.7	5.7	5.7	5.7
60°	5.7	5.7	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7	5.7
62.5°	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7	6.6
65°	4.1	4.9	4.9	4.9	4.9	4.9	5.7	5.7	6.6	6.6	6.6
67.5°	4.1	4.9	4.9	5.7	5.7	5.7	5.7	6.6	6.6	6.6	6.6
70°	4.9	4.9	5.7	5.7	5.7	5.7	6.6	6.6	6.6	6.6	7.4
72.5°	4.9	4.9	5.7	5.7	5.7	5.7	6.6	6.6	7.4	7.4	7.4
75°	4.9	5.7	5.7	5.7	5.7	6.6	6.6	6.6	7.4	7.4	7.4
77.5°	4.9	5.7	5.7	6.6	6.6	6.6	6.6	7.4	7.4	7.4	7.4
80°	4.9	5.7	5.7	6.6	6.6	6.6	7.4	7.4	7.4	7.4	8.2
82.5°	4.9	5.7	5.7	6.6	6.6	6.6	7.4	7.4	7.4	7.4	8.2
85°	5.7	5.7	6.6	6.6	6.6	6.6	7.4	7.4	7.4	7.4	8.2
87.5°	5.7	5.7	6.6	6.6	6.6	6.6	7.4	7.4	8.2	7.4	8.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9
2.5°	709.7	662.1	629.4	617.1	593.3	555.6	533.5	513.0	474.5	466.3	445.0
5°	592.5	516.3	462.2	441.7	414.7	382.7	351.6	331.1	306.5	296.6	281.9
7.5°	467.1	390.9	344.2	327.8	308.9	282.7	254.9	234.4	209.0	195.9	183.6
10°	367.1	310.6	271.2	254.9	235.2	207.3	178.6	151.6	129.5	115.5	113.1
12.5°	298.3	251.6	209.8	192.6	169.6	141.8	121.3	120.5	118.8	118.0	119.6
15°	244.2	199.1	154.9	136.0	129.5	128.7	131.1	133.6	132.8	135.2	136.9
17.5°	200.8	152.4	142.6	143.4	144.2	146.7	150.8	157.3	158.2	162.3	165.5
20°	163.9	161.4	165.5	168.8	171.3	176.2	185.2	193.4	195.9	201.6	208.1
22.5°	186.0	193.4	202.4	206.5	209.8	218.8	228.6	241.7	246.7	254.0	263.0
25°	224.5	236.8	250.8	255.7	260.6	275.3	286.8	302.4	306.5	315.5	324.5
27.5°	256.5	269.6	284.4	290.9	295.0	309.8	319.6	329.4	329.4	334.3	340.9
30°	251.6	262.2	274.5	279.4	281.1	291.7	301.6	304.8	303.2	305.7	310.6
32.5°	209.0	217.2	227.0	231.1	232.7	240.1	248.3	248.3	247.5	247.5	250.8
35°	154.9	160.6	165.5	169.6	172.1	177.0	184.4	183.6	183.6	181.9	184.4
37.5°	104.1	107.4	113.1	114.7	115.5	118.8	124.6	124.6	122.9	123.7	125.4
40°	63.1	67.2	70.5	71.3	72.9	75.4	79.5	79.5	79.5	79.5	80.3
42.5°	37.7	40.2	42.6	42.6	43.4	46.7	48.3	48.3	48.3	48.3	49.2
45°	22.1	22.9	24.6	25.4	25.4	27.0	27.9	27.9	27.9	27.9	28.7
47.5°	13.1	13.9	13.9	14.8	14.8	15.6	16.4	16.4	15.6	15.6	15.6
50°	8.2	8.2	8.2	8.2	9.0	9.0	9.0	9.0	9.0	9.0	8.2
52.5°	6.6	6.6	6.6	6.6	5.7	5.7	5.7	5.7	4.9	4.9	4.1
55°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.9	4.1	3.3	2.5
57.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.5
60°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	3.3	2.5
62.5°	6.6	6.6	5.7	5.7	5.7	4.9	4.9	4.1	4.1	3.3	2.5
65°	6.6	6.6	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.3	2.5
67.5°	6.6	6.6	6.6	6.6	5.7	5.7	5.7	4.9	4.1	3.3	2.5
70°	7.4	7.4	6.6	6.6	6.6	5.7	5.7	4.9	4.1	4.1	3.3
72.5°	7.4	7.4	6.6	6.6	6.6	6.6	5.7	4.9	4.9	4.1	3.3
75°	7.4	7.4	7.4	7.4	6.6	6.6	5.7	5.7	4.9	4.1	3.3
77.5°	7.4	7.4	7.4	7.4	6.6	6.6	6.6	5.7	4.9	4.1	3.3
80°	7.4	7.4	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.1	3.3
82.5°	8.2	8.2	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.1	4.1
85°	8.2	8.2	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.9	4.1
87.5°	8.2	8.2	7.4	7.4	7.4	6.6	6.6	5.7	4.9	4.9	4.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: LDSQA6A65927D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	812.9	812.9	812.9	812.9	812.9	812.9	812.9	812.9
2.5°	431.9	407.3	399.1	404.8	398.3	393.3	386.8	383.5
5°	270.4	252.4	246.7	248.3	242.6	237.6	231.1	229.5
7.5°	166.4	149.1	142.6	142.6	136.0	130.3	126.2	123.7
10°	111.4	108.2	109.0	109.8	109.0	109.8	107.4	109.0
12.5°	119.6	118.0	119.6	120.5	120.5	122.1	118.8	121.3
15°	139.3	137.7	140.1	141.8	141.8	144.2	140.9	143.4
17.5°	170.4	169.6	173.7	175.4	176.2	180.3	176.2	179.5
20°	215.5	214.7	220.4	222.9	222.1	230.3	224.5	230.3
22.5°	273.7	272.1	280.3	282.7	283.5	294.2	289.3	293.4
25°	331.9	333.5	337.6	341.7	342.5	351.6	344.2	348.3
27.5°	344.2	341.7	344.2	349.1	349.9	354.0	347.5	350.7
30°	311.4	307.3	308.1	313.9	315.5	317.1	311.4	313.0
32.5°	253.2	246.7	246.7	252.4	254.0	256.5	246.7	250.8
35°	186.8	181.1	181.1	185.2	186.0	187.7	180.3	183.6
37.5°	127.8	122.9	124.6	126.2	127.0	128.7	127.8	127.0
40°	81.9	78.7	81.1	81.1	81.9	82.8	82.8	83.6
42.5°	50.0	47.5	49.2	49.2	50.0	50.0	50.0	50.8
45°	28.7	27.9	27.9	28.7	28.7	28.7	27.9	28.7
47.5°	15.6	14.8	15.6	15.6	15.6	15.6	15.6	15.6
50°	8.2	7.4	7.4	7.4	7.4	7.4	7.4	7.4
52.5°	4.1	3.3	3.3	3.3	2.5	3.3	2.5	2.5
55°	2.5	1.6	1.6	1.6	0.8	0.8	0.0	0.0
57.5°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
60°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
62.5°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
65°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
67.5°	2.5	1.6	0.8	0.8	0.8	0.0	0.0	0.0
70°	2.5	1.6	1.6	0.8	0.8	0.0	0.0	0.0
72.5°	2.5	1.6	1.6	1.6	0.8	0.8	0.0	0.0
75°	2.5	1.6	1.6	1.6	0.8	0.8	0.0	0.0
77.5°	2.5	2.5	1.6	1.6	0.8	0.8	0.8	0.0
80°	3.3	2.5	1.6	1.6	1.6	0.8	0.8	0.8
82.5°	3.3	2.5	1.6	1.6	1.6	0.8	0.8	0.8
85°	3.3	2.5	2.5	1.6	1.6	0.8	0.8	0.8
87.5°	3.3	2.5	2.5	1.6	1.6	0.8	0.8	0.8
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)