

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: P209074

Luminaire Tested: **LDSQA6A45935D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209074
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26688)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A45935D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4206.9 lumens
Efficiency: N/A
Efficacy: 77.3 lumens/watt
Spacing Criteria (0/90/45): 2.63 / 0.54 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

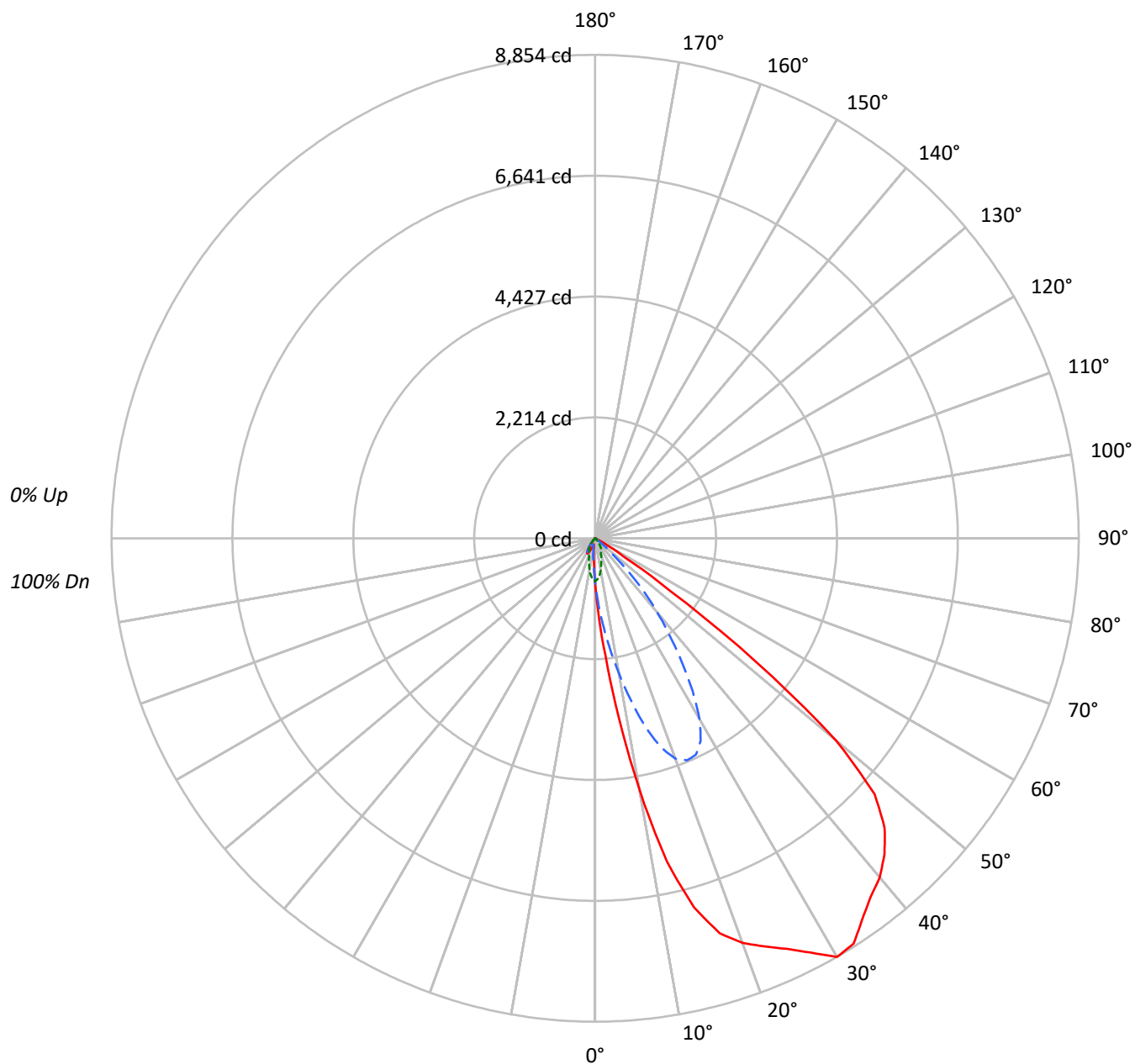
Input Watts (W): 54.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	88	83	78	86	81	77		83	79	76		81
4	91	82	75	70	89	80	74	69	78	73	68		76	71	67		74
5	85	74	67	62	83	73	66	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	41	36		46	40	36		45

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	33945	33945	33945
5°	93174	31278	12763
10°	204185	25598	4866
15°	311888	19484	5706
20°	361355	14497	8866
25°	394187	11919	14304
30°	440184	10813	14607
35°	447864	7416	10018
40°	455734	3518	5070
45°	456473	1461	2216
50°	385908	636	683
55°	124263	435	113
60°	24680	499	0
65°	2516	591	0
70°	277	818	0
75°	0	1081	0
80°	0	1810	174
85°	0	3606	346



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.0	2.5
10°-20°	553.5	13.2
20°-30°	1059.9	25.2
30°-40°	1248.7	29.7
40°-50°	980.8	23.3
50°-60°	239.0	5.7
60°-70°	10.3	0.2
70°-80°	3.9	0.1
80°-90°	3.9	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°	1720.4	40.9
0°-40°	2969.1	70.6
0°-60°	4188.9	99.6
0°-90°	4206.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4206.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	788	788	788	788	788	
5°	2156	1560	724	379	295	285
15°	6997	3594	437	125	128	1953
25°	8298	4370	251	263	301	3867
35°	8521	2762	141	182	191	5343
45°	7497	854	24	34	36	5633
55°	1655	31	6	4	2	1970
65°	25	4	6	4	0	66
75°	0	4	6	4	0	0
85°	0	4	7	4	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°	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4
2.5°	1351.4	1348.5	1328.9	1347.0	1291.8	1289.6	1264.8	1253.9	1221.9	1191.4	1147.7
5°	2155.8	2108.6	2070.0	2071.5	1965.3	1945.6	1890.4	1834.4	1748.5	1668.5	1560.1
7.5°	3286.1	3230.1	3148.7	3114.5	2911.5	2851.9	2737.7	2588.6	2401.7	2215.5	2014.7
10°	4670.3	4679.0	4573.5	4476.1	4169.1	4048.4	3863.6	3569.8	3215.6	2865.7	2510.1
12.5°	6063.1	6057.3	5931.5	5783.8	5405.6	5235.4	4989.6	4623.0	4153.8	3611.3	3054.8
15°	6997.0	7038.5	6985.4	6867.6	6544.6	6349.7	6072.6	5575.1	5003.4	4344.4	3593.8
17.5°	7583.3	7622.5	7603.6	7511.3	7226.1	7018.1	6786.8	6379.5	5718.4	4889.9	4018.6
20°	7886.6	7948.4	7939.7	7839.3	7624.0	7451.6	7196.3	6818.8	6246.4	5268.9	4293.5
22.5°	8088.8	8136.0	8149.1	8035.7	7813.1	7649.5	7462.5	7079.9	6541.7	5500.2	4402.6
25°	8297.5	8381.2	8299.0	8159.3	7954.9	7797.8	7598.5	7232.0	6682.8	5594.7	4369.9
27.5°	8553.5	8593.5	8407.3	8280.1	8053.1	7882.9	7671.3	7320.0	6707.5	5519.1	4182.9
30°	8853.9	8688.1	8557.9	8305.5	8048.0	7882.2	7666.9	7264.7	6577.4	5268.1	3820.7
32.5°	8804.5	8652.5	8504.8	8237.9	7983.3	7818.9	7578.9	7080.7	6269.7	4848.5	3321.0
35°	8520.8	8553.5	8394.3	8173.1	7885.1	7715.6	7453.8	6818.8	5747.5	4269.5	2762.4
37.5°	8281.5	8353.5	8249.5	8045.1	7752.7	7523.6	7170.1	6398.4	5065.9	3534.9	2232.9
40°	8108.4	8131.7	8075.7	7846.6	7495.3	7164.3	6755.5	5643.4	4238.2	2774.8	1762.3
42.5°	7840.0	7901.8	7802.9	7552.7	7020.3	6645.7	6053.7	4771.4	3291.9	2119.5	1326.7
45°	7496.7	7555.6	7433.4	7017.4	6277.0	5727.8	5005.6	3720.4	2435.1	1562.3	853.9
47.5°	6936.7	6973.0	6736.6	6161.3	5084.8	4567.7	3827.3	2593.7	1568.9	873.5	415.3
50°	5761.3	5743.8	5256.5	4548.8	3401.0	2858.5	2278.0	1406.0	704.8	413.9	259.7
52.5°	3713.1	3673.1	3190.8	2547.2	1722.3	1314.3	987.7	606.6	367.3	231.3	102.6
55°	1655.4	1640.2	1342.7	1043.0	704.8	606.6	463.3	297.5	195.7	80.7	31.3
57.5°	613.9	600.1	528.8	443.7	340.4	282.9	224.7	142.6	50.2	26.9	16.7
60°	286.6	285.8	251.7	207.3	144.0	109.1	63.3	33.5	21.1	14.5	9.5
62.5°	91.6	89.5	62.6	45.8	32.7	28.4	22.5	16.7	10.9	8.0	5.8
65°	24.7	24.7	22.5	18.9	15.3	13.1	10.9	8.0	5.1	4.4	3.6
67.5°	9.5	9.5	8.7	8.0	5.8	5.1	4.4	3.6	2.9	3.6	3.6
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.9	2.9	3.6
72.5°	0.0	0.0	0.7	0.7	1.5	1.5	2.2	2.2	2.9	3.6	3.6
75°	0.0	0.0	0.7	0.7	1.5	1.5	2.2	2.2	2.9	3.6	3.6
77.5°	0.0	0.0	0.7	0.7	1.5	1.5	2.2	2.2	2.9	3.6	3.6
80°	0.0	0.0	0.7	0.7	1.5	1.5	2.2	2.2	2.9	3.6	3.6
82.5°	0.0	0.0	0.7	1.5	1.5	1.5	2.2	2.9	2.9	3.6	4.4
85°	0.0	0.0	0.7	1.5	1.5	2.2	2.2	2.9	2.9	3.6	4.4
87.5°	0.0	0.0	0.7	1.5	1.5	2.2	2.2	2.9	2.9	3.6	4.4
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°	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4
2.5°	1115.7	1067.7	1001.5	963.0	953.5	933.2	897.5	844.4	800.8	758.6	733.9
5°	1468.5	1355.0	1227.8	1138.3	1101.9	1053.2	966.6	877.2	795.0	723.7	667.7
7.5°	1842.4	1655.4	1449.6	1283.8	1224.1	1147.0	1005.9	872.8	760.1	661.2	586.2
10°	2214.0	1912.9	1633.6	1393.6	1296.1	1191.4	1005.2	832.8	700.4	585.5	502.6
12.5°	2585.7	2152.9	1768.9	1459.8	1333.2	1200.8	975.4	771.7	624.8	507.7	428.4
15°	2929.0	2344.2	1860.5	1482.3	1329.6	1173.2	915.0	697.5	545.5	437.1	363.7
17.5°	3185.0	2444.6	1881.6	1448.1	1272.1	1099.0	822.6	610.2	469.9	374.6	299.7
20°	3310.9	2460.6	1831.4	1350.7	1173.2	993.5	721.5	526.6	405.1	316.4	253.1
22.5°	3310.9	2385.0	1722.3	1228.5	1049.6	872.1	624.1	457.5	354.2	275.7	222.6
25°	3185.0	2234.4	1576.1	1087.4	913.5	752.1	539.7	405.9	314.9	250.9	206.6
27.5°	2940.6	2026.4	1388.5	930.3	779.7	645.2	472.8	358.6	285.1	226.2	226.9
30°	2604.6	1771.1	1173.2	764.4	642.2	530.2	397.9	300.4	228.4	217.5	224.0
32.5°	2216.2	1465.6	929.5	592.8	497.5	417.5	302.6	212.4	181.8	183.3	190.6
35°	1817.6	1153.6	699.7	439.3	370.2	302.6	198.6	139.6	138.2	141.1	146.2
37.5°	1435.0	863.4	506.2	321.5	248.8	186.2	106.9	96.0	96.0	98.9	101.8
40°	1075.0	612.4	348.4	190.6	120.7	85.1	67.6	62.6	61.8	62.6	66.2
42.5°	738.3	387.7	207.3	76.4	58.2	49.5	42.9	39.3	38.5	39.3	41.5
45°	414.6	238.6	80.7	40.7	34.9	31.3	26.9	24.7	24.0	24.0	25.5
47.5°	259.7	94.6	36.4	25.5	21.8	20.4	17.5	16.0	15.3	15.3	16.0
50°	99.6	37.1	22.5	16.7	14.5	13.1	11.6	10.2	9.5	9.5	10.2
52.5°	34.2	21.8	14.5	10.9	9.5	8.7	7.3	6.5	6.5	6.5	6.5
55°	18.9	13.1	8.7	6.5	5.8	5.8	5.8	5.8	5.8	5.8	5.8
57.5°	11.6	8.0	5.8	5.1	5.1	5.1	5.1	5.1	5.1	5.8	5.8
60°	6.5	5.1	4.4	4.4	4.4	4.4	5.1	5.1	5.1	5.8	5.8
62.5°	4.4	4.4	4.4	4.4	4.4	4.4	5.1	5.1	5.8	5.8	5.8
65°	3.6	3.6	3.6	4.4	4.4	4.4	5.1	5.1	5.8	5.8	5.8
67.5°	3.6	3.6	4.4	4.4	4.4	5.1	5.1	5.8	5.8	5.8	5.8
70°	3.6	4.4	4.4	5.1	5.1	5.1	5.8	5.8	5.8	6.5	6.5
72.5°	3.6	4.4	4.4	5.1	5.1	5.1	5.8	5.8	6.5	6.5	6.5
75°	4.4	4.4	4.4	5.1	5.1	5.1	5.8	6.5	6.5	6.5	6.5
77.5°	4.4	4.4	5.1	5.1	5.1	5.8	5.8	6.5	6.5	6.5	6.5
80°	4.4	4.4	5.1	5.1	5.8	5.8	6.5	6.5	6.5	7.3	7.3
82.5°	4.4	4.4	5.1	5.8	5.8	5.8	6.5	6.5	7.3	7.3	7.3
85°	4.4	5.1	5.1	5.8	5.8	5.8	6.5	6.5	7.3	7.3	7.3
87.5°	4.4	5.1	5.1	5.8	5.8	5.8	6.5	6.5	7.3	7.3	7.3
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°	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4
2.5°	701.2	670.6	640.1	617.5	606.6	595.7	571.7	540.4	527.3	508.4	497.5
5°	611.0	559.3	518.6	491.7	475.7	454.6	426.9	396.4	378.9	359.3	346.2
7.5°	517.9	457.5	418.2	393.5	377.5	351.3	316.4	280.0	258.9	237.1	221.8
10°	436.4	378.9	334.6	306.2	285.8	255.3	220.4	194.9	176.7	157.8	142.6
12.5°	364.4	302.6	255.3	231.3	217.5	188.4	159.3	130.9	120.0	116.4	116.4
15°	295.3	239.3	199.3	178.9	164.4	133.1	127.3	125.8	125.1	124.4	125.8
17.5°	240.8	193.5	151.3	141.1	139.6	138.9	139.6	139.6	140.4	142.6	146.2
20°	202.2	158.6	155.7	156.4	156.4	159.3	162.9	165.8	168.7	172.4	178.9
22.5°	179.7	178.9	184.0	184.7	188.4	192.7	199.3	203.7	210.9	214.6	224.0
25°	207.3	212.4	221.8	224.7	230.6	237.8	248.0	253.8	262.6	266.9	277.8
27.5°	234.9	242.9	254.6	258.2	263.3	274.9	282.2	287.3	291.7	294.6	301.1
30°	232.7	240.0	251.7	252.4	259.7	267.7	272.0	276.4	279.3	278.6	282.2
32.5°	197.1	203.7	214.6	214.6	222.6	229.1	231.3	234.9	234.9	234.9	236.4
35°	151.3	155.7	162.9	165.1	171.7	176.0	177.5	181.8	181.8	180.4	180.4
37.5°	104.7	110.6	115.6	117.1	121.5	124.4	128.0	128.7	127.3	128.0	128.0
40°	68.4	72.0	75.6	76.4	80.0	82.2	85.8	85.8	86.6	85.8	87.3
42.5°	42.2	45.1	47.3	48.7	50.2	51.6	53.8	54.6	55.3	54.6	56.0
45°	26.2	27.6	29.1	29.8	30.5	31.3	33.5	33.5	33.5	33.5	34.2
47.5°	16.0	16.7	17.5	17.5	18.2	18.9	19.6	19.6	19.6	19.6	20.4
50°	9.5	10.2	10.2	10.2	10.9	10.9	11.6	11.6	11.6	10.9	11.6
52.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.8	6.5
55°	5.8	5.8	5.1	5.1	5.1	5.1	5.1	4.4	3.6	3.6	2.9
57.5°	5.1	5.1	5.1	5.1	5.1	4.4	4.4	3.6	3.6	2.9	2.2
60°	5.1	5.1	5.1	5.1	5.1	4.4	4.4	3.6	2.9	2.9	2.2
62.5°	5.8	5.1	5.1	5.1	5.1	4.4	4.4	3.6	2.9	2.9	2.2
65°	5.8	5.8	5.1	5.1	5.1	4.4	4.4	3.6	3.6	2.9	2.2
67.5°	5.8	5.8	5.8	5.1	5.8	5.1	4.4	4.4	3.6	2.9	2.9
70°	6.5	5.8	5.8	5.8	5.8	5.1	5.1	4.4	3.6	2.9	2.9
72.5°	6.5	6.5	5.8	5.8	5.8	5.1	5.1	4.4	3.6	3.6	2.9
75°	6.5	6.5	5.8	5.8	5.8	5.1	5.1	4.4	4.4	3.6	2.9
77.5°	6.5	6.5	6.5	5.8	5.8	5.8	5.1	5.1	4.4	3.6	2.9
80°	6.5	6.5	6.5	6.5	6.5	5.8	5.8	5.1	4.4	3.6	2.9
82.5°	7.3	6.5	6.5	6.5	6.5	5.8	5.8	5.1	4.4	3.6	3.6
85°	7.3	7.3	6.5	6.5	6.5	5.8	5.8	5.1	4.4	4.4	3.6
87.5°	7.3	6.5	6.5	6.5	6.5	5.8	5.8	5.1	4.4	3.6	3.6
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: LDSQA6A45935D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	788.4	788.4	788.4	788.4	788.4	788.4	788.4	788.4
2.5°	486.6	480.8	480.8	470.6	469.1	461.1	467.7	463.3
5°	331.7	322.2	319.3	309.1	305.5	296.0	298.9	295.3
7.5°	208.7	199.3	196.4	189.1	184.7	177.5	178.2	176.0
10°	127.3	118.6	116.4	114.2	112.0	111.3	112.0	111.3
12.5°	115.6	114.9	113.5	114.2	112.7	113.5	114.2	113.5
15°	125.8	127.3	125.8	126.6	125.8	127.3	128.0	128.0
17.5°	147.7	150.6	149.1	151.3	150.6	154.2	154.2	154.2
20°	181.1	186.2	184.7	187.7	187.7	192.0	192.0	193.5
22.5°	227.7	234.2	233.5	240.0	238.6	243.7	243.7	245.1
25°	283.7	290.2	290.9	295.3	294.6	299.7	299.7	301.1
27.5°	306.9	310.6	309.8	312.0	312.8	315.7	317.8	316.4
30°	288.0	290.9	290.2	291.7	291.7	293.8	296.0	293.8
32.5°	242.2	244.4	244.4	247.3	245.1	245.8	249.5	247.3
35°	185.5	186.9	185.5	186.9	187.7	187.7	191.3	190.6
37.5°	132.4	133.1	133.1	135.3	133.1	133.1	136.7	137.5
40°	88.7	89.5	88.7	91.6	90.2	90.2	92.4	90.2
42.5°	56.7	57.5	56.7	58.9	57.5	58.9	59.6	60.4
45°	34.9	34.9	34.2	35.6	34.9	35.6	36.4	36.4
47.5°	20.4	20.4	19.6	21.1	20.4	20.4	20.4	21.1
50°	10.9	10.9	10.9	11.6	10.9	10.9	10.9	10.2
52.5°	5.8	5.8	5.1	5.8	5.1	5.1	5.1	5.1
55°	2.9	2.2	2.2	2.2	1.5	1.5	1.5	1.5
57.5°	2.2	1.5	1.5	0.7	0.7	0.7	0.0	0.0
60°	1.5	1.5	0.7	0.7	0.0	0.0	0.0	0.0
62.5°	1.5	1.5	0.7	0.7	0.0	0.0	0.0	0.0
65°	1.5	1.5	0.7	0.7	0.0	0.0	0.0	0.0
67.5°	2.2	1.5	1.5	0.7	0.7	0.0	0.0	0.0
70°	2.2	1.5	1.5	0.7	0.7	0.0	0.0	0.0
72.5°	2.2	1.5	1.5	1.5	0.7	0.7	0.0	0.0
75°	2.2	2.2	1.5	1.5	0.7	0.7	0.0	0.0
77.5°	2.9	2.2	1.5	1.5	0.7	0.7	0.0	0.0
80°	2.9	2.2	1.5	1.5	1.5	0.7	0.7	0.7
82.5°	2.9	2.2	2.2	1.5	1.5	0.7	0.7	0.7
85°	2.9	2.2	2.2	1.5	1.5	0.7	0.7	0.7
87.5°	2.9	2.2	2.2	1.5	1.5	0.7	0.7	0.7
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)