

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: P209090

Luminaire Tested: **LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209090
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: LDSQA6A65935D010TE 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: 5414.7 lumens
Efficiency: N/A
Efficacy: 68.8 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

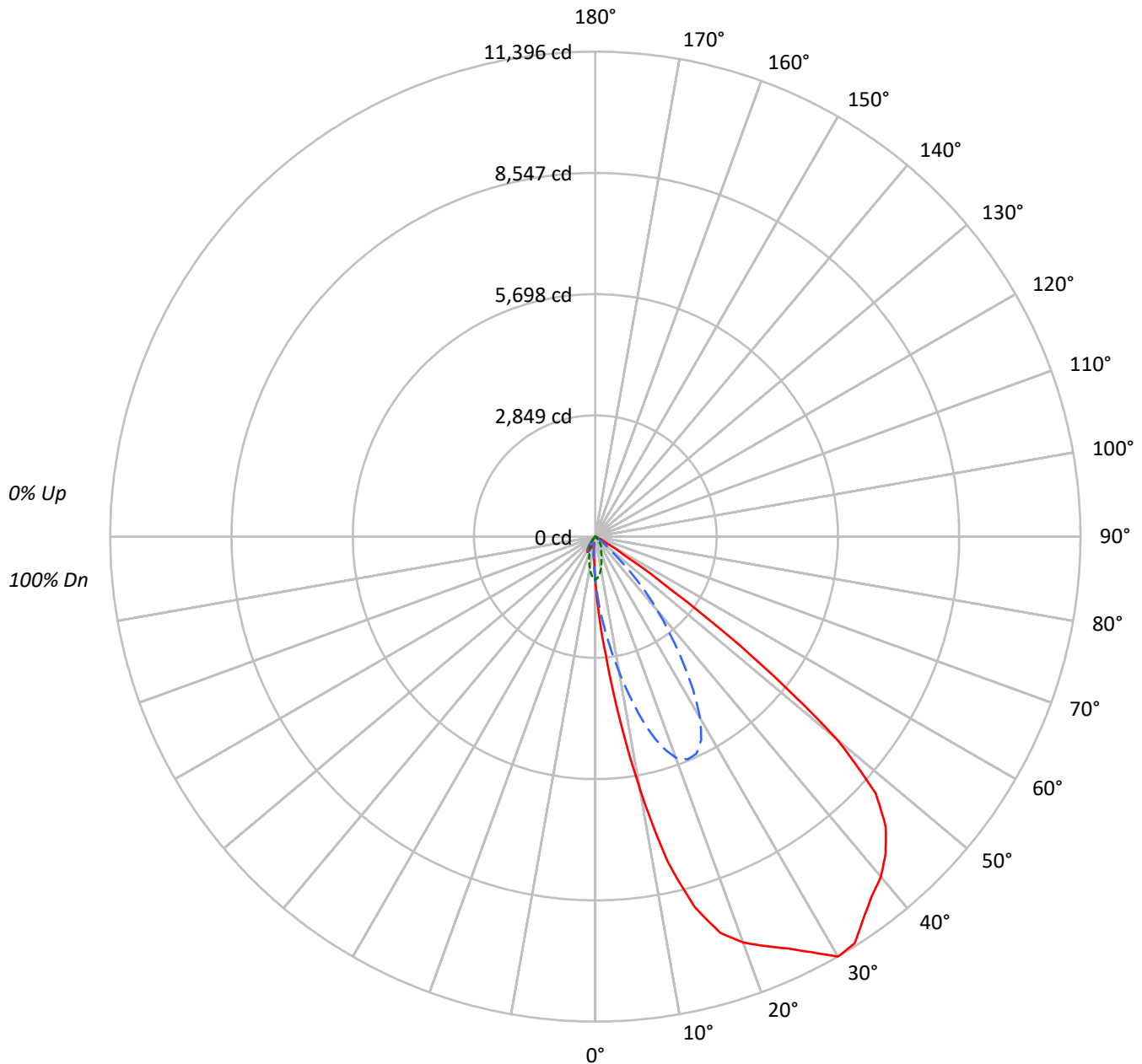
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209090

CATALOG NUMBER: LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°

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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91		
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81		
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73		
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65		
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58		
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52		
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46		
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	44	42		
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38		
10	60	48	41	36	59	48	41	36	47	41	36	46	40	36	45	40	36	34		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43693	43693	43693
5°	119927	40260	16428
10°	262804	32947	6261
15°	401433	25078	7346
20°	465098	18657	11409
25°	507357	15345	18414
30°	566563	13916	18803
35°	576445	9545	12893
40°	586574	4525	6525
45°	587527	1881	2850
50°	496697	817	877
55°	159942	563	143
60°	31758	646	0
65°	3240	764	0
70°	352	1057	0
75°	0	1397	0
80°	0	2331	223
85°	0	4644	445



TEST NUMBER: P209090

CATALOG NUMBER: LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.7	2.5
10°-20°	712.5	13.2
20°-30°	1364.1	25.2
30°-40°	1607.2	29.7
40°-50°	1262.4	23.3
50°-60°	307.6	5.7
60°-70°	13.2	0.2
70°-80°	5.0	0.1
80°-90°	5.0	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°	2214.3	40.9
0°-40°	3821.5	70.6
0°-60°	5391.5	99.6
0°-90°	5414.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5414.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1015	1015	1015	1015	1015	
5°	2775	2008	932	488	380	367
15°	9006	4626	563	161	165	2514
25°	10680	5624	323	338	388	4978
35°	10967	3556	182	234	245	6877
45°	9649	1099	31	43	47	7250
55°	2131	40	8	5	2	2536
65°	32	5	8	5	0	84
75°	0	5	8	6	0	0
85°	0	6	9	6	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209090

CATALOG NUMBER: LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8
2.5°	1739.4	1735.6	1710.4	1733.8	1662.6	1659.8	1628.0	1613.9	1572.7	1533.4	1477.3
5°	2774.8	2713.9	2664.3	2666.2	2529.5	2504.2	2433.1	2361.0	2250.5	2147.6	2008.1
7.5°	4229.6	4157.5	4052.6	4008.6	3747.4	3670.7	3523.7	3331.8	3091.2	2851.5	2593.2
10°	6011.1	6022.3	5886.6	5761.1	5366.1	5210.7	4972.9	4594.7	4138.8	3688.5	3230.7
12.5°	7803.8	7796.3	7634.4	7444.3	6957.5	6738.5	6422.1	5950.2	5346.4	4648.0	3931.9
15°	9005.9	9059.2	8990.9	8839.2	8423.6	8172.7	7816.0	7175.7	6439.8	5591.7	4625.6
17.5°	9760.4	9811.0	9786.6	9667.7	9300.7	9033.0	8735.3	8211.1	7360.1	6293.8	5172.3
20°	10150.8	10230.4	10219.1	10089.9	9812.8	9591.0	9262.4	8776.5	8039.7	6781.5	5526.2
22.5°	10411.0	10471.9	10488.7	10342.7	10056.2	9845.6	9605.0	9112.6	8419.8	7079.2	5666.6
25°	10679.7	10787.4	10681.6	10501.8	10238.8	10036.6	9780.1	9308.2	8601.4	7200.9	5624.4
27.5°	11009.2	11060.7	10821.1	10657.2	10365.2	10146.1	9873.7	9421.5	8633.3	7103.6	5383.9
30°	11395.9	11182.4	11014.9	10690.0	10358.6	10145.2	9868.1	9350.4	8465.7	6780.6	4917.6
32.5°	11332.2	11136.6	10946.5	10602.9	10275.3	10063.7	9754.8	9113.5	8069.7	6240.4	4274.5
35°	10967.1	11009.2	10804.2	10519.6	10148.9	9930.8	9593.8	8776.5	7397.5	5495.3	3555.5
37.5°	10659.1	10751.8	10617.9	10354.9	9978.5	9683.6	9228.7	8235.4	6520.4	4549.7	2874.0
40°	10436.3	10466.3	10394.2	10099.3	9647.1	9221.2	8695.1	7263.7	5455.0	3571.4	2268.3
42.5°	10090.9	10170.4	10043.1	9721.1	9035.8	8553.7	7791.7	6141.2	4237.1	2728.0	1707.6
45°	9649.0	9724.8	9567.6	9032.1	8079.1	7372.3	6442.7	4788.5	3134.3	2010.9	1099.1
47.5°	8928.2	8975.0	8670.7	7930.2	6544.7	5879.1	4926.1	3338.3	2019.3	1124.3	534.5
50°	7415.3	7392.9	6765.6	5854.7	4377.5	3679.1	2932.1	1809.6	907.1	532.7	334.2
52.5°	4779.1	4727.6	4106.9	3278.4	2216.8	1691.6	1271.3	780.8	472.8	297.7	132.0
55°	2130.7	2111.0	1728.2	1342.5	907.1	780.8	596.3	382.9	251.8	103.9	40.3
57.5°	790.1	772.3	680.6	571.1	438.1	364.2	289.3	183.5	64.6	34.6	21.5
60°	368.8	367.9	323.9	266.8	185.4	140.4	81.4	43.1	27.1	18.7	12.2
62.5°	118.0	115.1	80.5	59.0	42.1	36.5	29.0	21.5	14.0	10.3	7.5
65°	31.8	31.8	29.0	24.3	19.7	16.9	14.0	10.3	6.6	5.6	4.7
67.5°	12.2	12.2	11.2	10.3	7.5	6.6	5.6	4.7	3.7	4.7	4.7
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.7	3.7	4.7
72.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	4.7
75°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	4.7
77.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	4.7
80°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	4.7
82.5°	0.0	0.0	0.9	1.9	1.9	1.9	2.8	3.7	3.7	4.7	5.6
85°	0.0	0.0	0.9	1.9	1.9	2.8	2.8	3.7	3.7	4.7	5.6
87.5°	0.0	0.0	0.9	1.9	1.9	2.8	2.8	3.7	3.7	4.7	5.6
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: P209090

CATALOG NUMBER: LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8
2.5°	1436.1	1374.3	1289.1	1239.5	1227.3	1201.1	1155.2	1086.9	1030.7	976.4	944.6
5°	1890.1	1744.1	1580.2	1465.1	1418.3	1355.6	1244.2	1129.0	1023.2	931.5	859.4
7.5°	2371.3	2130.7	1865.8	1652.3	1575.6	1476.3	1294.7	1123.4	978.3	851.0	754.5
10°	2849.7	2462.1	2102.6	1793.7	1668.2	1533.4	1293.8	1071.9	901.5	753.6	646.9
12.5°	3328.0	2771.0	2276.7	1878.9	1716.0	1545.6	1255.4	993.3	804.2	653.4	551.4
15°	3769.9	3017.2	2394.7	1907.9	1711.3	1510.0	1177.7	897.8	702.1	562.6	468.1
17.5°	4099.4	3146.4	2421.8	1863.9	1637.3	1414.5	1058.8	785.4	604.8	482.1	385.7
20°	4261.4	3167.0	2357.3	1738.4	1510.0	1278.8	928.7	677.8	521.4	407.2	325.8
22.5°	4261.4	3069.7	2216.8	1581.2	1350.9	1122.5	803.2	588.8	455.9	354.8	286.5
25°	4099.4	2875.9	2028.7	1399.6	1175.8	968.0	694.6	522.4	405.4	323.0	265.9
27.5°	3784.9	2608.1	1787.1	1197.3	1003.6	830.4	608.5	461.5	367.0	291.1	292.1
30°	3352.4	2279.5	1510.0	983.9	826.6	682.5	512.1	386.6	294.0	279.9	288.3
32.5°	2852.5	1886.4	1196.4	763.0	640.3	537.4	389.4	273.4	234.0	235.9	245.3
35°	2339.5	1484.7	900.6	565.4	476.5	389.4	255.6	179.7	177.9	181.6	188.2
37.5°	1847.0	1111.2	651.6	413.8	320.2	239.7	137.6	123.6	123.6	127.3	131.1
40°	1383.6	788.2	448.4	245.3	155.4	109.5	87.1	80.5	79.6	80.5	85.2
42.5°	950.2	499.0	266.8	98.3	74.9	63.7	55.2	50.6	49.6	50.6	53.4
45°	533.6	307.1	103.9	52.4	44.9	40.3	34.6	31.8	30.9	30.9	32.8
47.5°	334.2	121.7	46.8	32.8	28.1	26.2	22.5	20.6	19.7	19.7	20.6
50°	128.3	47.7	29.0	21.5	18.7	16.9	15.0	13.1	12.2	12.2	13.1
52.5°	44.0	28.1	18.7	14.0	12.2	11.2	9.4	8.4	8.4	8.4	8.4
55°	24.3	16.9	11.2	8.4	7.5	7.5	7.5	7.5	7.5	7.5	7.5
57.5°	15.0	10.3	7.5	6.6	6.6	6.6	6.6	6.6	6.6	7.5	7.5
60°	8.4	6.6	5.6	5.6	5.6	5.6	6.6	6.6	6.6	7.5	7.5
62.5°	5.6	5.6	5.6	5.6	5.6	5.6	6.6	6.6	7.5	7.5	7.5
65°	4.7	4.7	4.7	5.6	5.6	5.6	6.6	6.6	7.5	7.5	7.5
67.5°	4.7	4.7	5.6	5.6	5.6	6.6	6.6	7.5	7.5	7.5	7.5
70°	4.7	5.6	5.6	6.6	6.6	6.6	7.5	7.5	7.5	8.4	8.4
72.5°	4.7	5.6	5.6	6.6	6.6	6.6	7.5	7.5	8.4	8.4	8.4
75°	5.6	5.6	5.6	6.6	6.6	6.6	7.5	8.4	8.4	8.4	8.4
77.5°	5.6	5.6	6.6	6.6	6.6	7.5	7.5	8.4	8.4	8.4	8.4
80°	5.6	5.6	6.6	6.6	7.5	7.5	8.4	8.4	8.4	9.4	9.4
82.5°	5.6	5.6	6.6	7.5	7.5	7.5	8.4	8.4	9.4	9.4	9.4
85°	5.6	6.6	6.6	7.5	7.5	7.5	8.4	8.4	9.4	9.4	9.4
87.5°	5.6	6.6	6.6	7.5	7.5	7.5	8.4	8.4	9.4	9.4	9.4
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: P209090

CATALOG NUMBER: LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8
2.5°	902.5	863.1	823.8	794.8	780.8	766.7	735.8	695.6	678.7	654.4	640.3
5°	786.4	719.9	667.5	632.8	612.2	585.1	549.5	510.2	487.7	462.5	445.6
7.5°	666.5	588.8	538.3	506.5	485.9	452.2	407.2	360.4	333.3	305.2	285.5
10°	561.7	487.7	430.6	394.1	367.9	328.6	283.7	250.9	227.5	203.1	183.5
12.5°	469.0	389.4	328.6	297.7	279.9	242.5	205.0	168.5	154.5	149.8	149.8
15°	380.1	308.0	256.5	230.3	211.6	171.3	163.8	162.0	161.0	160.1	162.0
17.5°	309.9	249.0	194.7	181.6	179.7	178.8	179.7	179.7	180.7	183.5	188.2
20°	260.3	204.1	200.3	201.3	201.3	205.0	209.7	213.4	217.2	221.9	230.3
22.5°	231.2	230.3	236.8	237.8	242.5	248.1	256.5	262.1	271.5	276.2	288.3
25°	266.8	273.4	285.5	289.3	296.8	306.1	319.2	326.7	338.0	343.6	357.6
27.5°	302.4	312.7	327.7	332.3	338.9	353.9	363.2	369.8	375.4	379.1	387.6
30°	299.6	308.9	323.9	324.8	334.2	344.5	350.1	355.7	359.5	358.5	363.2
32.5°	253.7	262.1	276.2	276.2	286.5	294.9	297.7	302.4	302.4	302.4	304.3
35°	194.7	200.3	209.7	212.5	220.9	226.6	228.4	234.0	234.0	232.2	232.2
37.5°	134.8	142.3	148.8	150.7	156.3	160.1	164.8	165.7	163.8	164.8	164.8
40°	88.0	92.7	97.4	98.3	103.0	105.8	110.5	110.5	111.4	110.5	112.3
42.5°	54.3	58.0	60.9	62.7	64.6	66.5	69.3	70.2	71.1	70.2	72.1
45°	33.7	35.6	37.4	38.4	39.3	40.3	43.1	43.1	43.1	43.1	44.0
47.5°	20.6	21.5	22.5	22.5	23.4	24.3	25.3	25.3	25.3	25.3	26.2
50°	12.2	13.1	13.1	13.1	14.0	14.0	15.0	15.0	15.0	14.0	15.0
52.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	7.5	8.4
55°	7.5	7.5	6.6	6.6	6.6	6.6	6.6	5.6	4.7	4.7	3.7
57.5°	6.6	6.6	6.6	6.6	6.6	5.6	5.6	4.7	4.7	3.7	2.8
60°	6.6	6.6	6.6	6.6	6.6	5.6	5.6	4.7	3.7	3.7	2.8
62.5°	7.5	6.6	6.6	6.6	6.6	5.6	5.6	4.7	3.7	3.7	2.8
65°	7.5	7.5	6.6	6.6	6.6	5.6	5.6	4.7	4.7	3.7	2.8
67.5°	7.5	7.5	7.5	6.6	7.5	6.6	5.6	5.6	4.7	3.7	3.7
70°	8.4	7.5	7.5	7.5	7.5	6.6	6.6	5.6	4.7	3.7	3.7
72.5°	8.4	8.4	7.5	7.5	7.5	6.6	6.6	5.6	4.7	4.7	3.7
75°	8.4	8.4	7.5	7.5	7.5	6.6	6.6	5.6	5.6	4.7	3.7
77.5°	8.4	8.4	8.4	7.5	7.5	7.5	6.6	6.6	5.6	4.7	3.7
80°	8.4	8.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	4.7	3.7
82.5°	9.4	8.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	4.7	4.7
85°	9.4	9.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	5.6	4.7
87.5°	9.4	8.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	4.7	4.7
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: P209090

CATALOG NUMBER: LDSQA6A65935D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8	1014.8
2.5°	626.3	618.8	618.8	605.7	603.8	593.5	602.0	596.3
5°	426.9	414.7	411.0	397.9	393.2	381.0	384.8	380.1
7.5°	268.7	256.5	252.8	243.4	237.8	228.4	229.4	226.6
10°	163.8	152.6	149.8	147.0	144.2	143.2	144.2	143.2
12.5°	148.8	147.9	146.0	147.0	145.1	146.0	147.0	146.0
15°	162.0	163.8	162.0	162.9	162.0	163.8	164.8	164.8
17.5°	190.0	193.8	191.9	194.7	193.8	198.5	198.5	198.5
20°	233.1	239.7	237.8	241.5	241.5	247.1	247.1	249.0
22.5°	293.0	301.4	300.5	308.9	307.1	313.6	313.6	315.5
25°	365.1	373.5	374.5	380.1	379.1	385.7	385.7	387.6
27.5°	395.1	399.7	398.8	401.6	402.5	406.3	409.1	407.2
30°	370.7	374.5	373.5	375.4	375.4	378.2	381.0	378.2
32.5°	311.7	314.5	314.5	318.3	315.5	316.4	321.1	318.3
35°	238.7	240.6	238.7	240.6	241.5	241.5	246.2	245.3
37.5°	170.4	171.3	171.3	174.1	171.3	171.3	176.0	176.9
40°	114.2	115.1	114.2	118.0	116.1	116.1	118.9	116.1
42.5°	73.0	74.0	73.0	75.8	74.0	75.8	76.8	77.7
45°	44.9	44.9	44.0	45.9	44.9	45.9	46.8	46.8
47.5°	26.2	26.2	25.3	27.1	26.2	26.2	26.2	27.1
50°	14.0	14.0	14.0	15.0	14.0	14.0	14.0	13.1
52.5°	7.5	7.5	6.6	7.5	6.6	6.6	6.6	6.6
55°	3.7	2.8	2.8	2.8	1.9	1.9	1.9	1.9
57.5°	2.8	1.9	1.9	0.9	0.9	0.9	0.0	0.0
60°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.9	1.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.8	1.9	1.9	0.9	0.9	0.0	0.0	0.0
70°	2.8	1.9	1.9	0.9	0.9	0.0	0.0	0.0
72.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.0	0.0
75°	2.8	2.8	1.9	1.9	0.9	0.9	0.0	0.0
77.5°	3.7	2.8	1.9	1.9	0.9	0.9	0.0	0.0
80°	3.7	2.8	1.9	1.9	1.9	0.9	0.9	0.9
82.5°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
85°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
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)