

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242310

Luminaire Tested: S122DRP-S485D935-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242310
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S122DRP-S485D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

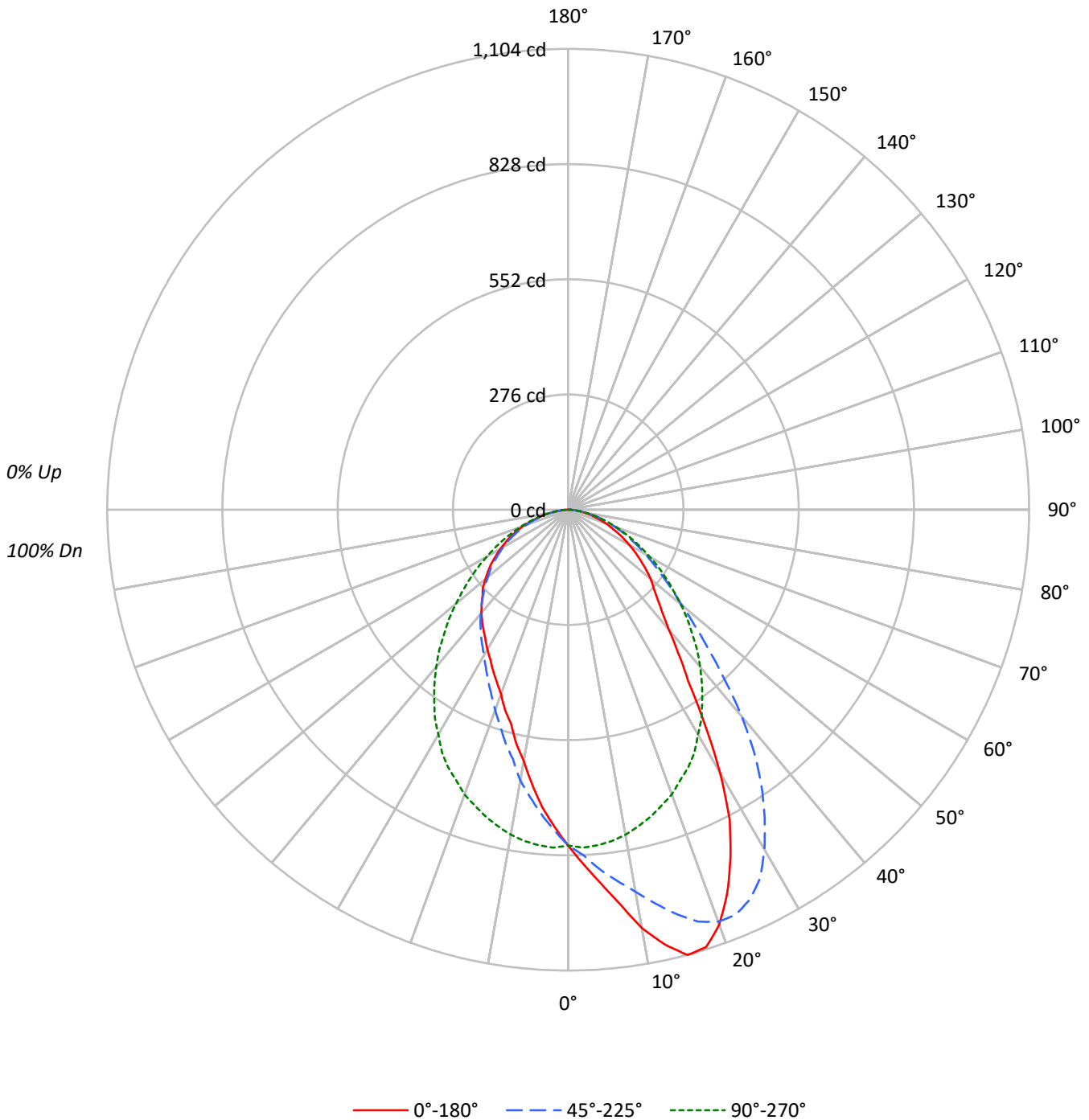
Lumens per Lamp: N/A
Luminaire Lumens: 1774.5 lumens
Efficiency: N/A
Efficacy: 94.4 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
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: 24 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					0
RW	70	50	30	10	70	50	30	10	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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86					86			
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74					74			
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64					64			
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55					55			
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49					49			
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43					43			
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32					32			
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29					29			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	15322	15322	15322	15322	15322
5°	17178	16533	15423	14010	13665
10°	19684	17974	15295	12742	11827
15°	21776	19783	15015	11418	10449
20°	21444	21294	14714	10364	9525
25°	19335	21649	14312	9519	8941
30°	15979	20677	13674	8859	8512
35°	11645	18763	13003	8455	8208
40°	9302	16088	12214	8101	8041
45°	8127	12865	11300	7745	7812
50°	7639	10499	10416	7447	7657
55°	7044	9126	9518	7176	7452
60°	6453	8126	8560	6853	7135
65°	5882	7342	7707	6436	6828
70°	5335	6560	6867	5942	6371
75°	4732	5799	5939	5321	5645
80°	4070	4914	4914	4377	4541
85°	3650	3978	3650	3038	2710

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 19710 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.6	4.3
10°-20°	223.0	12.6
20°-30°	323.7	18.2
30°-40°	341.2	19.2
40°-50°	301.9	17.0
50°-60°	241.0	13.6
60°-70°	163.7	9.2
70°-80°	83.8	4.7
80°-90°	19.8	1.1
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°	623.3	35.1
0°-40°	964.4	54.3
0°-60°	1507.3	84.9
0°-90°	1774.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1774.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	804	804	804	804	804	
5°	898	865	807	733	715	89
15°	1104	1003	761	579	530	306
25°	920	1030	681	453	425	417
35°	501	807	559	364	353	324
45°	302	478	420	288	290	237
55°	212	275	287	216	224	190
65°	130	163	171	143	152	130
75°	64	79	81	72	77	69
85°	17	18	17	14	12	19
90°	0	0	0	0	0	



TEST NUMBER: P242310

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4
2.5°	850.8	851.1	851.7	846.7	846.1	846.1	841.8	838.1	833.8	827.9	828.5
5°	898.4	901.8	903.0	899.3	893.7	893.1	887.9	879.2	871.2	864.7	860.0
7.5°	953.4	954.6	952.2	947.8	944.1	937.0	928.4	920.0	907.6	896.5	888.5
10°	1017.7	1019.6	1014.3	1007.2	1001.3	992.7	978.4	963.9	946.3	929.3	915.7
12.5°	1066.5	1071.8	1064.7	1065.3	1054.2	1041.5	1023.9	1018.3	991.7	966.4	951.5
15°	1104.3	1104.0	1104.6	1098.7	1091.3	1089.4	1071.5	1052.0	1017.1	1003.2	979.1
17.5°	1098.7	1103.0	1105.5	1103.6	1102.4	1099.6	1091.9	1077.4	1058.2	1034.7	1006.0
20°	1057.9	1064.1	1065.0	1072.1	1076.1	1081.4	1083.6	1080.2	1069.3	1050.5	1026.4
22.5°	994.8	995.4	998.8	1010.9	1020.8	1035.9	1044.0	1059.1	1056.7	1049.9	1030.7
25°	920.0	916.9	927.7	933.3	953.4	974.4	989.6	1006.3	1021.1	1030.1	1024.2
27.5°	837.2	830.7	847.1	861.6	875.8	896.2	919.1	946.3	967.0	995.1	1001.9
30°	726.5	729.3	744.7	760.5	785.2	817.4	844.0	874.6	907.6	940.1	962.7
32.5°	607.2	619.8	628.2	654.5	675.5	712.3	754.3	794.5	837.8	875.8	913.8
35°	500.8	513.2	526.8	544.4	575.0	610.6	648.6	700.2	756.5	806.9	848.3
37.5°	433.4	431.3	439.6	452.6	478.9	509.5	554.6	607.2	674.6	730.5	786.2
40°	374.1	372.8	378.4	390.1	409.0	430.0	468.4	513.2	574.7	647.0	716.6
42.5°	333.3	334.5	337.0	344.4	355.8	372.2	398.5	435.0	490.0	557.1	633.1
45°	301.7	303.9	307.3	311.3	318.7	332.9	349.0	376.2	420.7	477.6	551.2
47.5°	277.0	277.6	281.3	285.0	289.4	298.0	312.2	329.5	363.6	412.1	477.9
50°	257.8	255.7	258.1	260.9	265.6	271.1	279.8	295.9	316.9	354.3	407.1
52.5°	234.3	235.0	237.1	237.7	241.8	247.3	255.0	264.9	283.5	310.7	351.8
55°	212.1	213.6	214.9	216.7	220.4	224.4	230.6	238.0	252.9	274.8	307.0
57.5°	191.1	191.7	192.6	196.6	198.8	202.5	208.7	215.5	225.4	242.4	267.7
60°	169.4	169.4	171.9	173.4	176.5	180.2	184.9	191.4	200.0	213.3	232.8
62.5°	149.6	149.3	149.9	152.7	154.9	158.3	162.9	168.2	176.2	187.7	202.8
65°	130.5	129.8	131.7	132.3	134.8	138.2	141.9	147.8	154.3	162.9	177.1
67.5°	111.3	112.2	113.5	114.7	115.9	119.9	122.4	126.7	132.3	139.7	149.6
70°	95.8	95.8	95.8	96.8	98.6	100.5	102.9	106.3	111.6	117.8	126.4
72.5°	78.5	79.8	81.0	80.1	82.5	83.5	86.6	88.1	93.1	96.5	103.9
75°	64.3	64.3	64.3	65.8	66.8	67.7	69.6	71.4	73.9	78.8	82.9
77.5°	50.7	50.4	50.7	51.0	52.2	53.5	54.1	55.6	58.1	60.6	64.3
80°	37.1	37.7	38.0	38.6	38.6	39.3	39.6	41.7	43.3	44.8	47.0
82.5°	26.6	26.6	26.6	26.6	26.9	27.2	28.1	28.4	28.8	30.0	31.5
85°	16.7	16.4	16.4	17.0	16.7	16.7	17.3	17.9	17.9	18.2	19.2
87.5°	8.0	8.0	8.3	8.0	8.0	8.3	8.3	8.0	8.3	8.7	9.0
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4
2.5°	830.7	828.2	826.7	821.1	816.1	811.2	809.7	810.3	803.5	797.0	794.2
5°	857.6	851.4	845.5	837.2	827.3	816.5	810.9	806.6	795.7	784.0	777.2
7.5°	882.0	874.0	863.4	848.6	835.0	818.9	809.0	800.7	785.5	769.8	760.2
10°	903.9	891.9	877.4	858.2	840.6	819.9	805.3	790.8	772.2	752.5	740.1
12.5°	922.8	905.5	891.3	865.3	843.7	816.5	798.5	776.6	756.8	732.4	720.3
15°	954.9	925.0	897.8	869.9	844.3	808.1	788.9	761.4	735.8	706.7	692.8
17.5°	978.8	946.3	904.2	870.6	842.1	803.5	776.0	743.2	714.1	682.0	663.4
20°	998.5	959.9	913.8	871.8	835.9	790.2	759.6	725.9	690.3	652.9	632.5
22.5°	1010.3	969.2	923.7	867.2	823.6	779.4	738.9	701.1	665.0	623.9	602.2
25°	1010.9	973.8	925.6	865.0	813.7	763.3	716.9	681.0	637.5	599.7	568.5
27.5°	1000.7	971.3	924.7	860.7	802.2	744.4	694.0	654.8	608.7	567.9	536.7
30°	978.1	962.7	917.5	853.2	788.0	724.6	667.8	621.7	575.9	534.5	502.4
32.5°	943.2	942.9	904.6	842.7	772.9	699.6	640.2	593.6	541.6	501.1	470.8
35°	895.3	910.1	885.1	826.0	753.1	676.1	612.4	559.2	506.7	467.7	439.0
37.5°	834.4	868.7	858.8	803.8	727.7	651.1	581.8	526.2	475.8	435.6	407.5
40°	771.0	818.0	824.8	777.5	700.5	621.1	546.6	491.2	442.4	406.5	378.1
42.5°	703.0	759.9	781.5	746.0	670.8	589.5	515.0	457.2	409.0	374.4	350.0
45°	625.4	698.0	731.7	710.1	637.1	554.3	477.6	419.5	375.6	342.8	323.4
47.5°	555.2	634.1	677.0	666.8	601.0	518.7	443.0	386.4	342.8	316.3	298.0
50°	479.8	561.4	616.1	618.6	561.4	480.1	404.1	351.5	312.2	287.8	273.6
52.5°	414.3	491.2	552.1	567.9	517.2	439.9	369.1	316.9	283.5	261.5	249.2
55°	358.9	424.8	490.9	515.0	473.3	399.1	332.6	286.6	254.1	238.7	227.5
57.5°	306.4	364.2	426.9	452.3	425.7	360.5	296.2	255.7	228.1	214.2	205.6
60°	266.5	309.8	364.2	396.0	373.8	317.2	262.8	224.7	203.1	191.1	183.0
62.5°	229.4	266.5	310.4	338.8	329.2	276.7	229.4	196.9	179.0	167.9	162.6
65°	195.4	225.7	261.2	288.1	280.1	239.6	199.7	171.0	156.1	147.2	142.5
67.5°	166.3	189.5	214.9	239.6	232.8	202.8	169.1	145.9	134.5	126.4	123.7
70°	139.1	155.8	177.8	196.6	191.4	167.9	142.5	123.3	113.8	107.3	104.5
72.5°	113.1	126.1	141.6	156.1	153.0	134.5	114.4	101.1	94.3	88.4	86.3
75°	89.3	99.9	110.1	120.3	119.3	104.2	91.8	80.7	74.8	70.2	69.2
77.5°	69.9	76.4	83.8	90.3	88.7	78.8	68.6	61.8	57.2	54.1	53.8
80°	50.4	53.8	58.7	63.1	60.9	57.2	49.5	44.8	41.7	38.6	37.4
82.5°	33.1	36.5	39.0	40.8	39.3	35.9	31.8	29.1	27.5	25.7	25.3
85°	19.2	21.0	22.3	22.9	22.3	20.1	17.9	16.7	15.1	14.2	13.9
87.5°	9.3	9.3	9.3	9.9	9.0	9.0	7.7	6.8	6.5	6.2	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4
2.5°	791.1	789.2	782.8	779.4	773.8	768.5	765.1	766.7	767.9	767.3	766.4
5°	771.0	765.1	756.2	748.4	742.9	732.7	728.3	726.2	724.3	722.2	720.0
7.5°	748.7	740.4	727.7	717.8	707.9	695.0	688.5	684.8	680.7	676.1	671.8
10°	724.6	711.7	698.0	682.6	670.2	658.8	648.6	641.8	635.6	629.7	625.4
12.5°	699.3	683.8	666.2	643.6	629.7	612.1	612.7	599.4	588.9	585.8	580.6
15°	672.1	651.1	629.7	604.7	593.9	579.0	569.8	560.5	552.1	546.3	544.7
17.5°	642.4	614.3	593.6	575.0	557.4	542.2	534.2	526.8	519.7	511.0	510.7
20°	607.5	584.0	560.8	545.0	526.8	511.3	500.8	493.4	487.5	482.9	478.9
22.5°	574.4	548.1	527.4	509.8	491.8	480.1	472.4	465.3	460.6	455.4	451.7
25°	538.5	518.4	495.3	475.8	460.9	452.9	446.1	439.9	436.8	433.4	429.1
27.5°	507.9	485.7	462.8	447.6	434.0	426.9	421.7	417.0	414.3	412.1	409.3
30°	475.2	452.6	435.6	420.7	409.9	402.8	399.7	397.3	393.9	392.6	391.4
32.5°	443.6	423.8	409.9	397.6	387.4	383.3	380.6	378.4	375.9	374.7	371.9
35°	414.3	397.3	383.0	375.9	367.6	363.6	361.4	358.3	355.8	354.6	354.3
37.5°	386.1	370.7	361.1	351.5	347.5	345.3	342.2	340.1	339.1	338.8	338.5
40°	358.9	346.9	338.5	331.1	329.5	325.8	323.4	321.5	321.5	321.8	321.5
42.5°	334.2	323.7	316.6	310.4	308.5	306.7	304.2	304.5	305.1	306.4	305.1
45°	309.1	301.4	296.2	293.1	289.7	287.5	287.2	288.1	288.4	288.7	289.7
47.5°	285.6	280.7	275.8	272.0	270.5	270.2	269.6	271.1	272.7	273.0	274.5
50°	265.2	259.4	255.4	253.2	252.0	251.3	252.0	253.8	255.0	256.6	257.5
52.5°	242.4	238.7	236.2	234.6	234.3	235.0	235.0	237.1	239.3	239.6	239.9
55°	221.7	218.6	217.9	215.2	216.4	216.1	217.6	218.9	220.7	222.6	222.9
57.5°	200.6	197.9	196.0	196.3	196.6	197.9	199.1	201.3	203.4	205.6	205.6
60°	179.6	178.4	177.4	177.4	178.1	179.9	181.5	183.6	184.9	186.1	187.0
62.5°	160.4	159.2	158.3	158.9	160.8	161.7	163.5	164.5	165.7	166.9	167.2
65°	140.0	139.4	140.4	141.0	141.3	142.8	145.0	145.9	147.2	147.8	149.9
67.5°	121.5	121.5	121.2	122.1	124.0	124.3	126.4	128.9	128.9	130.2	131.7
70°	102.6	103.3	103.9	104.5	106.0	106.7	108.2	109.1	110.4	111.3	112.2
72.5°	85.3	85.3	85.9	85.6	86.9	88.4	89.7	90.6	91.8	93.1	94.0
75°	68.3	68.3	68.9	69.2	70.8	72.3	72.0	72.6	73.9	75.1	75.7
77.5°	52.9	52.2	52.9	53.2	53.8	55.0	55.3	56.3	57.8	57.5	58.1
80°	38.0	37.1	38.0	38.3	38.3	39.9	39.9	40.5	41.4	40.5	41.4
82.5°	24.4	24.1	24.7	24.7	25.3	25.0	25.7	25.7	26.6	26.3	26.6
85°	13.6	13.3	13.6	13.3	13.6	13.9	13.9	13.6	13.6	14.2	13.3
87.5°	5.3	4.9	4.6	4.6	4.3	4.0	3.7	3.7	3.7	3.1	3.1
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: P242310

CATALOG NUMBER: S122DRP-S485D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	804.4	804.4	804.4	804.4
2.5°	763.3	762.7	762.7	759.9
5°	715.7	714.7	713.2	714.7
7.5°	670.5	666.5	665.9	662.8
10°	620.1	617.7	617.4	611.5
12.5°	581.8	575.0	576.6	573.8
15°	536.4	536.4	535.1	529.9
17.5°	503.9	503.6	500.8	502.7
20°	475.5	473.6	469.9	469.9
22.5°	448.6	448.9	444.9	446.4
25°	428.8	426.3	424.5	425.4
27.5°	408.4	407.5	407.1	404.4
30°	391.1	388.0	388.6	387.0
32.5°	371.3	370.7	369.7	368.5
35°	353.7	354.0	352.4	353.0
37.5°	337.9	339.1	338.2	338.2
40°	322.4	322.4	322.4	323.4
42.5°	307.6	307.0	306.4	306.1
45°	290.3	291.2	291.5	290.0
47.5°	275.1	275.4	275.1	277.0
50°	259.1	258.4	259.1	258.4
52.5°	242.1	242.4	241.8	241.8
55°	224.1	224.7	224.4	224.4
57.5°	205.9	206.2	206.8	205.3
60°	186.7	188.3	188.0	187.3
62.5°	169.1	169.4	169.4	169.4
65°	150.9	151.5	150.6	151.5
67.5°	131.1	131.4	132.0	132.3
70°	112.8	112.5	113.5	114.4
72.5°	93.7	94.6	94.0	94.6
75°	75.1	76.0	75.7	76.7
77.5°	57.5	57.8	57.8	58.1
80°	41.4	40.8	40.2	41.4
82.5°	25.7	26.3	25.7	25.3
85°	13.3	13.0	12.4	12.4
87.5°	3.1	2.8	2.8	2.5
90°	0.0	0.0	0.0	0.0

TEST NUMBER: P242310
 CATALOG NUMBER: S122DRP-S485D935-X4F0-XX-UDD-A-W

CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	17.78	19.30	18.14	19.61	19.92	21.03	22.55	21.40	22.86	23.18
	3H	19.19	20.55	19.56	20.87	21.24	22.04	23.40	22.42	23.73	24.09
	4H	19.69	20.97	20.09	21.31	21.69	22.36	23.64	22.76	23.99	24.36
	6H	20.04	21.22	20.46	21.59	21.98	22.56	23.73	22.97	24.10	24.49
	8H	20.16	21.28	20.58	21.67	22.07	22.60	23.72	23.03	24.11	24.51
	12H	20.23	21.30	20.66	21.68	22.11	22.62	23.69	23.05	24.07	24.50
4H	2H	18.64	19.91	19.04	20.26	20.64	21.24	22.52	21.64	22.87	23.25
	3H	20.19	21.25	20.60	21.65	22.05	22.58	23.64	22.99	24.04	24.44
	4H	20.78	21.74	21.22	22.15	22.59	23.09	24.04	23.52	24.46	24.90
	6H	21.23	22.06	21.69	22.50	22.96	23.42	24.25	23.88	24.70	25.16
	8H	21.37	22.15	21.83	22.59	23.06	23.50	24.27	23.96	24.72	25.19
	12H	21.47	22.17	21.96	22.64	23.12	23.54	24.23	24.02	24.71	25.18
8H	4H	21.22	21.99	21.68	22.44	22.90	23.22	23.99	23.68	24.44	24.90
	6H	21.75	22.39	22.25	22.88	23.36	23.66	24.30	24.15	24.79	25.26
	8H	21.94	22.52	22.46	23.03	23.51	23.79	24.36	24.30	24.87	25.36
	12H	22.10	22.61	22.61	23.10	23.67	23.88	24.39	24.39	24.88	25.44
12H	4H	21.27	21.97	21.76	22.44	22.92	23.21	23.90	23.69	24.38	24.85
	6H	21.83	22.40	22.34	22.91	23.40	23.66	24.23	24.17	24.74	25.23
	8H	22.07	22.58	22.58	23.07	23.63	23.83	24.34	24.34	24.83	25.40