

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: P242305

Luminaire Tested: S122DRP-S485D930-X4F0-XX-UDD-A-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242305
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-S485D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

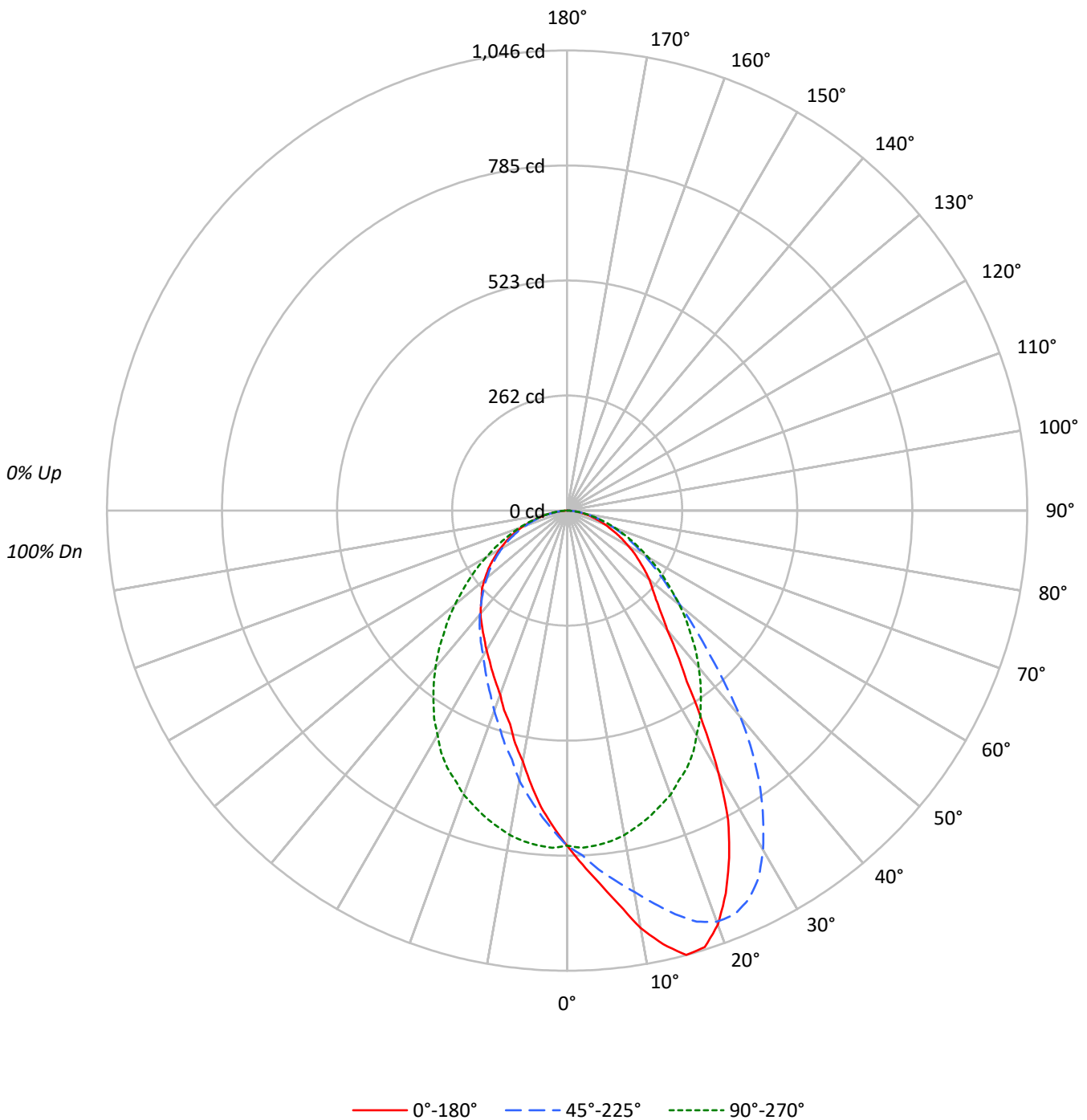
Lumens per Lamp: N/A
Luminaire Lumens: 1680.3 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (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: 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°	14509	14509	14509	14509	14509
5°	16266	15656	14602	13266	12941
10°	18639	17021	14483	12065	11199
15°	20621	18732	14218	10812	9893
20°	20305	20163	13932	9815	9020
25°	18310	20500	13554	9014	8466
30°	15130	19579	12948	8389	8061
35°	11027	17765	12315	8006	7773
40°	8807	15235	11567	7671	7614
45°	7696	12184	10700	7332	7397
50°	7233	9942	9862	7053	7251
55°	6668	8641	9013	6794	7057
60°	6111	7695	8107	6491	6758
65°	5566	6954	7297	6094	6463
70°	5051	6210	6505	5625	6031
75°	4482	5490	5623	5041	5343
80°	3850	4651	4651	4146	4300
85°	3453	3781	3453	2885	2557

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 65°
 Vertical Angle: 45°
 Luminance: 18665 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.6	4.3
10°-20°	211.2	12.6
20°-30°	306.5	18.2
30°-40°	323.1	19.2
40°-50°	285.8	17.0
50°-60°	228.2	13.6
60°-70°	155.0	9.2
70°-80°	79.3	4.7
80°-90°	18.7	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°	590.2	35.1
0°-40°	913.2	54.3
0°-60°	1427.3	84.9
0°-90°	1680.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1680.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	762	762	762	762	762	
5°	851	819	764	694	677	85
15°	1046	950	721	548	502	290
25°	871	975	645	429	403	395
35°	474	764	530	344	334	307
45°	286	452	397	272	275	224
55°	201	260	271	205	212	180
65°	124	154	162	135	143	123
75°	61	75	76	68	73	65
85°	16	17	16	13	12	18
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	805.6	805.9	806.5	801.8	801.2	801.2	797.1	793.6	789.5	783.9	784.5
5°	850.7	853.9	855.1	851.6	846.3	845.7	840.7	832.5	824.9	818.8	814.4
7.5°	902.8	904.0	901.6	897.5	894.0	887.3	879.1	871.2	859.5	848.9	841.3
10°	963.7	965.4	960.5	953.7	948.2	940.0	926.5	912.8	896.1	880.0	867.1
12.5°	1009.9	1014.9	1008.2	1008.8	998.2	986.2	969.5	964.3	939.1	915.1	901.0
15°	1045.7	1045.4	1045.9	1040.4	1033.4	1031.6	1014.6	996.2	963.1	949.9	927.1
17.5°	1040.4	1044.5	1046.8	1045.1	1043.9	1041.3	1033.9	1020.2	1002.0	979.8	952.6
20°	1001.7	1007.6	1008.5	1015.2	1019.0	1024.0	1026.0	1022.8	1012.6	994.7	971.9
22.5°	942.0	942.6	945.8	957.2	966.6	981.0	988.6	1002.9	1000.6	994.1	976.0
25°	871.2	868.3	878.5	883.8	902.8	922.7	937.0	952.9	966.9	975.4	969.8
27.5°	792.7	786.6	802.1	815.9	829.3	848.6	870.3	896.1	915.7	942.3	948.8
30°	687.9	690.6	705.2	720.1	743.5	774.0	799.2	828.1	859.5	890.2	911.6
32.5°	574.9	586.9	594.8	619.7	639.6	674.5	714.3	752.3	793.3	829.3	865.3
35°	474.2	485.9	498.8	515.5	544.5	578.2	614.2	663.0	716.3	764.0	803.3
37.5°	410.4	408.4	416.3	428.6	453.4	482.4	525.2	574.9	638.7	691.7	744.4
40°	354.2	353.0	358.3	369.4	387.3	407.2	443.5	485.9	544.2	612.7	678.6
42.5°	315.6	316.7	319.1	326.1	336.9	352.5	377.3	411.9	464.0	527.5	599.5
45°	285.7	287.8	291.0	294.8	301.8	315.3	330.5	356.3	398.4	452.3	521.9
47.5°	262.3	262.9	266.4	269.9	274.0	282.2	295.7	312.1	344.3	390.2	452.6
50°	244.1	242.1	244.4	247.1	251.5	256.7	264.9	280.1	300.1	335.5	385.5
52.5°	221.9	222.5	224.5	225.1	228.9	234.2	241.5	250.9	268.4	294.2	333.1
55°	200.8	202.3	203.5	205.2	208.7	212.5	218.4	225.4	239.5	260.2	290.7
57.5°	180.9	181.5	182.4	186.2	188.2	191.7	197.6	204.0	213.4	229.5	253.5
60°	160.4	160.4	162.8	164.2	167.2	170.7	175.1	181.2	189.4	202.0	220.4
62.5°	141.7	141.4	142.0	144.6	146.7	149.9	154.3	159.2	166.9	177.7	192.0
65°	123.5	122.9	124.7	125.3	127.6	130.9	134.4	139.9	146.1	154.3	167.7
67.5°	105.4	106.3	107.4	108.6	109.8	113.6	115.9	120.0	125.3	132.3	141.7
70°	90.7	90.7	90.7	91.6	93.4	95.1	97.5	100.7	105.7	111.5	119.7
72.5°	74.4	75.5	76.7	75.8	78.2	79.0	82.0	83.4	88.1	91.3	98.4
75°	60.9	60.9	60.9	62.4	63.2	64.1	65.9	67.6	70.0	74.6	78.5
77.5°	48.0	47.7	48.0	48.3	49.5	50.6	51.2	52.7	55.0	57.4	60.9
80°	35.1	35.7	36.0	36.6	36.6	37.2	37.5	39.5	41.0	42.4	44.5
82.5°	25.2	25.2	25.2	25.2	25.5	25.8	26.6	26.9	27.2	28.4	29.9
85°	15.8	15.5	15.5	16.1	15.8	15.8	16.4	17.0	17.0	17.3	18.1
87.5°	7.6	7.6	7.9	7.6	7.6	7.9	7.9	7.6	7.9	8.2	8.5
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°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	786.6	784.2	782.8	777.5	772.8	768.1	766.7	767.3	760.8	754.7	752.0
5°	812.0	806.2	800.6	792.7	783.4	773.1	767.8	763.7	753.5	742.4	735.9
7.5°	835.2	827.6	817.6	803.6	790.7	775.5	766.1	758.2	743.8	728.9	719.8
10°	856.0	844.5	830.8	812.6	795.9	776.3	762.6	748.8	731.3	712.5	700.8
12.5°	873.8	857.4	844.0	819.4	798.9	773.1	756.1	735.4	716.6	693.5	682.1
15°	904.3	875.9	850.1	823.8	799.5	765.2	747.1	721.0	696.7	669.2	656.0
17.5°	926.8	896.1	856.3	824.3	797.4	760.8	734.8	703.7	676.2	645.8	628.2
20°	945.5	908.9	865.3	825.5	791.6	748.2	719.3	687.3	653.7	618.3	598.9
22.5°	956.7	917.7	874.7	821.1	779.8	738.0	699.6	663.9	629.7	590.7	570.2
25°	957.2	922.1	876.5	819.1	770.5	722.8	678.9	644.9	603.6	567.9	538.3
27.5°	947.6	919.8	875.6	815.0	759.6	704.9	657.2	620.0	576.4	537.8	508.2
30°	926.2	911.6	868.8	808.0	746.2	686.2	632.3	588.7	545.4	506.1	475.7
32.5°	893.1	892.8	856.5	798.0	731.8	662.5	606.3	562.1	512.9	474.5	445.8
35°	847.8	861.8	838.1	782.2	713.1	640.2	579.9	529.6	479.8	442.9	415.7
37.5°	790.1	822.6	813.2	761.1	689.1	616.5	550.9	498.2	450.5	412.5	385.8
40°	730.1	774.6	781.0	736.2	663.3	588.1	517.6	465.2	418.9	384.9	358.0
42.5°	665.7	719.5	740.0	706.4	635.2	558.2	487.7	433.0	387.3	354.5	331.4
45°	592.2	661.0	692.9	672.4	603.3	524.9	452.3	397.2	355.7	324.6	306.2
47.5°	525.8	600.4	641.1	631.4	569.1	491.2	419.5	365.9	324.6	299.5	282.2
50°	454.3	531.6	583.4	585.8	531.6	454.6	382.6	332.8	295.7	272.5	259.1
52.5°	392.3	465.2	522.8	537.8	489.7	416.6	349.5	300.1	268.4	247.7	235.9
55°	339.9	402.2	464.9	487.7	448.2	377.9	315.0	271.4	240.6	226.0	215.5
57.5°	290.1	344.8	404.3	428.3	403.1	341.3	280.4	242.1	216.0	202.9	194.7
60°	252.3	293.3	344.8	375.0	353.9	300.3	248.8	212.8	192.3	180.9	173.3
62.5°	217.2	252.3	293.9	320.8	311.8	262.0	217.2	186.5	169.5	159.0	154.0
65°	185.0	213.7	247.4	272.8	265.2	226.9	189.1	161.9	147.8	139.3	135.0
67.5°	157.5	179.4	203.5	226.9	220.4	192.0	160.1	138.2	127.3	119.7	117.1
70°	131.7	147.5	168.3	186.2	181.2	159.0	135.0	116.8	107.7	101.6	98.9
72.5°	107.1	119.4	134.1	147.8	144.9	127.3	108.3	95.7	89.3	83.7	81.7
75°	84.6	94.6	104.2	113.9	113.0	98.7	86.9	76.4	70.8	66.5	65.6
77.5°	66.2	72.3	79.3	85.5	84.0	74.6	65.0	58.5	54.2	51.2	50.9
80°	47.7	50.9	55.6	59.7	57.7	54.2	46.8	42.4	39.5	36.6	35.4
82.5°	31.3	34.5	36.9	38.6	37.2	34.0	30.2	27.5	26.1	24.3	24.0
85°	18.1	19.9	21.1	21.7	21.1	19.0	17.0	15.8	14.3	13.5	13.2
87.5°	8.8	8.8	8.8	9.4	8.5	8.5	7.3	6.4	6.1	5.9	5.3
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	749.1	747.4	741.2	738.0	732.7	727.7	724.5	726.0	727.2	726.6	725.7
5°	730.1	724.5	716.0	708.7	703.4	693.8	689.7	687.6	685.9	683.8	681.8
7.5°	709.0	701.1	689.1	679.7	670.4	658.1	651.9	648.4	644.6	640.2	636.1
10°	686.2	673.9	661.0	646.4	634.7	623.8	614.2	607.7	601.9	596.3	592.2
12.5°	662.2	647.5	630.8	609.5	596.3	579.6	580.2	567.6	557.7	554.7	549.8
15°	636.4	616.5	596.3	572.6	562.3	548.3	539.5	530.7	522.8	517.3	515.8
17.5°	608.3	581.7	562.1	544.5	527.8	513.5	505.8	498.8	492.1	483.9	483.6
20°	575.2	553.0	531.0	516.1	498.8	484.2	474.2	467.2	461.6	457.3	453.4
22.5°	543.9	519.0	499.4	482.7	465.7	454.6	447.3	440.6	436.2	431.2	427.7
25°	509.9	490.9	469.0	450.5	436.5	428.9	422.4	416.6	413.6	410.4	406.3
27.5°	481.0	459.9	438.2	423.9	411.0	404.3	399.3	394.9	392.3	390.2	387.6
30°	449.9	428.6	412.5	398.4	388.2	381.4	378.5	376.2	372.9	371.8	370.6
32.5°	420.1	401.3	388.2	376.5	366.8	363.0	360.4	358.3	356.0	354.8	352.2
35°	392.3	376.2	362.7	356.0	348.1	344.3	342.2	339.3	336.9	335.8	335.5
37.5°	365.6	351.0	341.9	332.8	329.0	327.0	324.1	322.0	321.1	320.8	320.5
40°	339.9	328.4	320.5	313.5	312.1	308.5	306.2	304.4	304.4	304.7	304.4
42.5°	316.4	306.5	299.8	293.9	292.2	290.4	288.1	288.3	288.9	290.1	288.9
45°	292.7	285.4	280.4	277.5	274.3	272.2	272.0	272.8	273.1	273.4	274.3
47.5°	270.5	265.8	261.1	257.6	256.1	255.9	255.3	256.7	258.2	258.5	259.9
50°	251.2	245.6	241.8	239.8	238.6	238.0	238.6	240.3	241.5	243.0	243.8
52.5°	229.5	226.0	223.7	222.2	221.9	222.5	222.5	224.5	226.6	226.9	227.2
55°	209.9	207.0	206.4	203.7	204.9	204.6	206.1	207.3	209.0	210.8	211.1
57.5°	190.0	187.4	185.6	185.9	186.2	187.4	188.5	190.6	192.6	194.7	194.7
60°	170.1	168.9	168.0	168.0	168.6	170.4	171.8	173.9	175.1	176.2	177.1
62.5°	151.9	150.8	149.9	150.5	152.2	153.1	154.9	155.7	156.9	158.1	158.4
65°	132.6	132.0	132.9	133.5	133.8	135.2	137.3	138.2	139.3	139.9	142.0
67.5°	115.0	115.0	114.8	115.6	117.4	117.7	119.7	122.1	122.1	123.2	124.7
70°	97.2	97.8	98.4	98.9	100.4	101.0	102.5	103.3	104.5	105.4	106.3
72.5°	80.8	80.8	81.4	81.1	82.3	83.7	84.9	85.8	86.9	88.1	89.0
75°	64.7	64.7	65.3	65.6	67.0	68.5	68.2	68.8	70.0	71.1	71.7
77.5°	50.1	49.5	50.1	50.4	50.9	52.1	52.4	53.3	54.7	54.4	55.0
80°	36.0	35.1	36.0	36.3	36.3	37.8	37.8	38.3	39.2	38.3	39.2
82.5°	23.1	22.8	23.4	23.4	24.0	23.7	24.3	24.3	25.2	24.9	25.2
85°	12.9	12.6	12.9	12.6	12.9	13.2	13.2	12.9	12.9	13.5	12.6
87.5°	5.0	4.7	4.4	4.4	4.1	3.8	3.5	3.5	3.5	2.9	2.9
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: P242305

CATALOG NUMBER: S122DRP-S485D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	761.7	761.7	761.7	761.7
2.5°	722.8	722.2	722.2	719.5
5°	677.7	676.8	675.3	676.8
7.5°	634.9	631.1	630.6	627.6
10°	587.2	584.9	584.6	579.0
12.5°	550.9	544.5	546.0	543.3
15°	507.9	507.9	506.7	501.7
17.5°	477.2	476.9	474.2	476.0
20°	450.2	448.5	445.0	445.0
22.5°	424.8	425.1	421.2	422.7
25°	406.0	403.7	401.9	402.8
27.5°	386.7	385.8	385.5	382.9
30°	370.3	367.4	368.0	366.5
32.5°	351.6	351.0	350.1	348.9
35°	334.9	335.2	333.7	334.3
37.5°	320.0	321.1	320.3	320.3
40°	305.3	305.3	305.3	306.2
42.5°	291.3	290.7	290.1	289.8
45°	274.9	275.8	276.0	274.6
47.5°	260.5	260.8	260.5	262.3
50°	245.3	244.7	245.3	244.7
52.5°	229.2	229.5	228.9	228.9
55°	212.2	212.8	212.5	212.5
57.5°	195.0	195.3	195.8	194.4
60°	176.8	178.3	178.0	177.4
62.5°	160.1	160.4	160.4	160.4
65°	142.9	143.4	142.6	143.4
67.5°	124.1	124.4	125.0	125.3
70°	106.8	106.6	107.4	108.3
72.5°	88.7	89.6	89.0	89.6
75°	71.1	72.0	71.7	72.6
77.5°	54.4	54.7	54.7	55.0
80°	39.2	38.6	38.1	39.2
82.5°	24.3	24.9	24.3	24.0
85°	12.6	12.3	11.7	11.7
87.5°	2.9	2.6	2.6	2.3
90°	0.0	0.0	0.0	0.0



TEST NUMBER: P242305
 CATALOG NUMBER: S122DRP-S485D930-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	17.59	19.10	17.95	19.42	19.73	20.84	22.36	21.21	22.67	22.99
	3H	19.00	20.36	19.37	20.68	21.05	21.85	23.21	22.23	23.54	23.90
	4H	19.50	20.78	19.90	21.12	21.50	22.17	23.45	22.57	23.80	24.17
	6H	19.85	21.03	20.27	21.40	21.79	22.37	23.54	22.78	23.91	24.30
	8H	19.96	21.09	20.39	21.48	21.88	22.41	23.53	22.84	23.92	24.32
	12H	20.04	21.11	20.47	21.49	21.92	22.43	23.50	22.86	23.88	24.31
4H	2H	18.45	19.72	18.85	20.07	20.45	21.05	22.33	21.45	22.68	23.06
	3H	20.00	21.06	20.41	21.46	21.86	22.39	23.45	22.80	23.85	24.26
	4H	20.59	21.55	21.03	21.96	22.40	22.90	23.86	23.33	24.27	24.71
	6H	21.04	21.87	21.50	22.31	22.77	23.23	24.06	23.69	24.51	24.97
	8H	21.18	21.96	21.64	22.40	22.87	23.31	24.08	23.77	24.53	25.00
	12H	21.28	21.98	21.77	22.45	22.93	23.35	24.04	23.83	24.52	24.99
8H	4H	21.03	21.80	21.49	22.25	22.71	23.03	23.80	23.49	24.25	24.71
	6H	21.56	22.20	22.06	22.69	23.17	23.47	24.11	23.96	24.60	25.07
	8H	21.75	22.33	22.27	22.84	23.33	23.60	24.17	24.11	24.68	25.17
	12H	21.91	22.42	22.42	22.91	23.48	23.69	24.20	24.20	24.69	25.25
12H	4H	21.08	21.78	21.57	22.25	22.73	23.02	23.71	23.50	24.19	24.66
	6H	21.64	22.21	22.15	22.72	23.21	23.47	24.04	23.98	24.55	25.04
	8H	21.88	22.39	22.39	22.88	23.44	23.64	24.15	24.15	24.64	25.21