

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: P243392

Luminaire Tested: S123RDRP-H775D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243392
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-64)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-H775D830-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

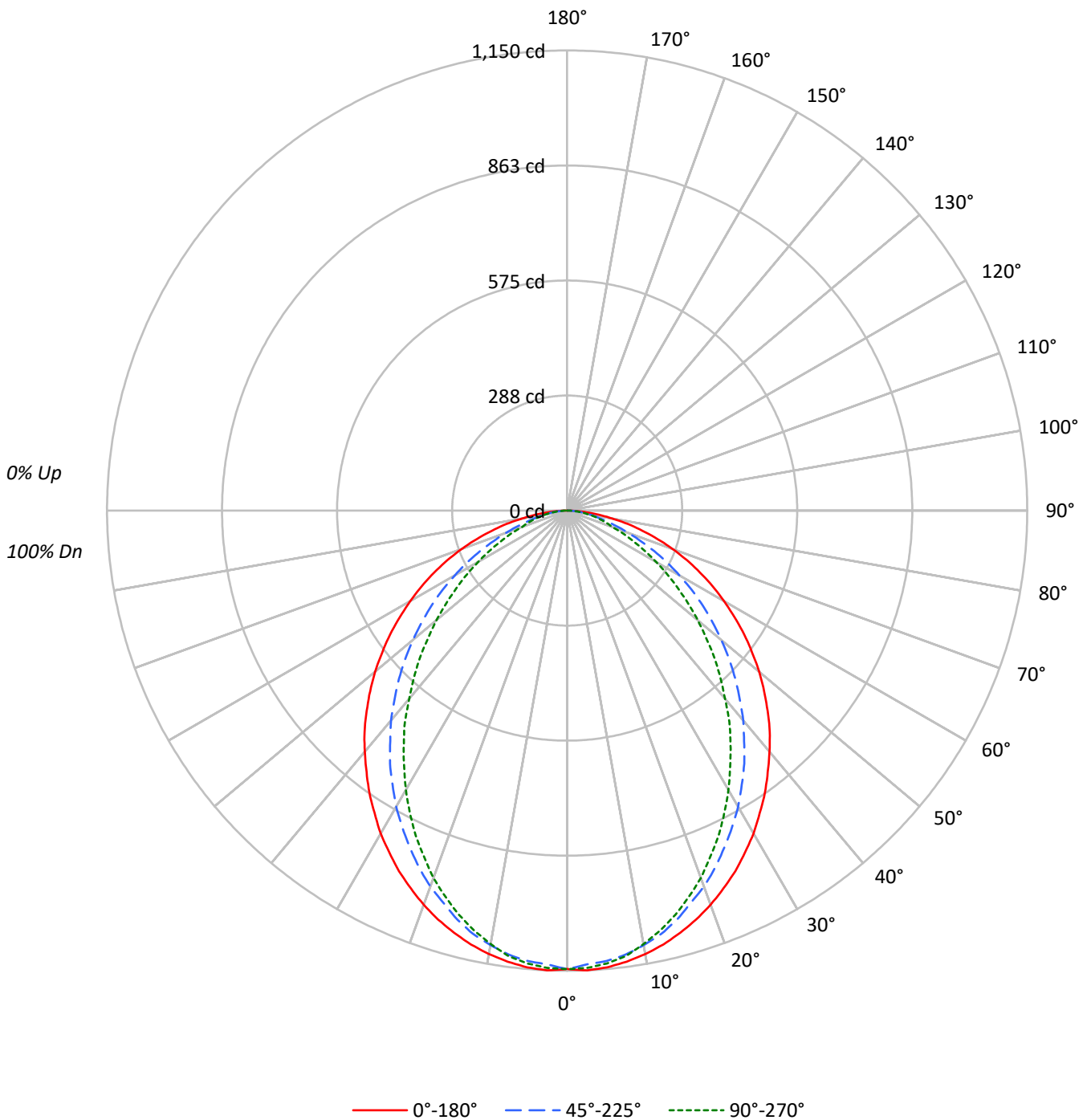
Lumens per Lamp: N/A
Luminaire Lumens: 2587.0 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 23.6
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

TEST NUMBER: P243392

CATALOG NUMBER: S123RDRP-H775D830-X4F0-XX-UDD-F-W

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	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																												
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86																												
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73																												
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62																												
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54																												
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47																												
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42																												
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37																												
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34																												
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30																												
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13888	13888	13888
5°	13942	13749	13824
10°	13854	13572	13539
15°	13705	13285	13120
20°	13520	12895	12600
25°	13299	12429	11982
30°	13045	11960	11282
35°	12749	11421	10534
40°	12448	10834	9706
45°	12143	10182	8931
50°	11816	9476	8031
55°	11418	8740	7124
60°	10965	7872	6208
65°	10526	6889	5300
70°	9920	5770	4242
75°	9151	4576	4037
80°	7986	4056	3686
85°	6731	3546	3421

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 12143 cd/sqm



TEST NUMBER: P243392

CATALOG NUMBER: S123RDRP-H775D830-X4F0-XX-UDD-F-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.8	4.2
10°-20°	300.1	11.6
20°-30°	432.0	16.7
30°-40°	486.6	18.8
40°-50°	464.9	18.0
50°-60°	380.1	14.7
60°-70°	255.3	9.9
70°-80°	127.3	4.9
80°-90°	32.9	1.3
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°	839.9	32.5
0°-40°	1326.5	51.3
0°-60°	2171.5	83.9
0°-90°	2587.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2587.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1146	1146	1146	1146	1146	
5°	1146	1141	1130	1139	1136	109
15°	1092	1084	1059	1052	1046	308
25°	994	972	929	909	896	458
35°	862	828	772	729	712	539
45°	708	666	594	542	521	547
55°	540	492	414	356	337	483
65°	367	316	240	196	185	363
75°	195	149	98	88	86	207
85°	48	28	26	24	25	56
90°	0	0	0	0	0	



TEST NUMBER: P243392

CATALOG NUMBER: S123RDRP-H775D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8
2.5°	1150.2	1147.6	1144.0	1144.9	1145.8	1146.7	1146.7	1145.8	1143.2	1139.6	1135.2
5°	1145.8	1143.2	1139.6	1139.6	1141.4	1141.4	1141.4	1140.5	1137.9	1134.4	1130.0
7.5°	1137.0	1135.2	1130.8	1131.7	1132.6	1132.6	1132.6	1131.7	1128.2	1123.8	1119.4
10°	1125.6	1122.9	1119.4	1119.4	1120.3	1120.3	1120.3	1118.5	1114.1	1108.8	1102.7
12.5°	1110.6	1108.0	1104.4	1104.4	1104.4	1104.4	1104.4	1101.8	1094.8	1089.5	1084.2
15°	1092.1	1089.5	1086.0	1086.0	1085.1	1084.2	1082.4	1078.0	1071.9	1065.7	1058.7
17.5°	1071.9	1068.4	1064.0	1063.1	1062.2	1061.3	1058.7	1056.0	1047.2	1038.4	1027.9
20°	1048.1	1044.6	1040.2	1039.3	1036.7	1034.0	1032.3	1027.0	1017.3	1006.8	999.7
22.5°	1021.7	1018.2	1013.8	1012.0	1006.8	1005.0	1002.4	994.4	983.9	974.2	966.3
25°	994.4	990.0	984.8	982.1	976.0	972.4	971.6	960.1	949.6	939.0	929.3
27.5°	962.8	959.2	954.8	949.6	943.4	939.0	937.2	926.7	913.5	901.2	892.4
30°	932.0	926.7	922.3	916.1	907.3	902.9	899.4	888.8	877.4	862.4	854.5
32.5°	895.9	892.4	887.1	880.9	872.1	868.6	863.3	850.1	835.2	824.6	812.3
35°	861.6	858.0	850.1	844.0	831.6	828.1	822.8	811.4	794.7	782.3	771.8
37.5°	823.7	819.3	813.1	804.3	793.8	789.4	782.3	770.9	751.5	739.2	726.0
40°	786.7	780.6	773.5	763.9	753.3	748.9	742.7	726.0	710.2	696.1	684.7
42.5°	749.8	742.7	733.9	725.1	713.7	707.5	700.5	684.7	667.1	653.9	638.0
45°	708.4	703.1	694.3	683.8	670.6	666.2	658.3	641.5	623.9	609.9	594.0
47.5°	667.9	661.8	653.0	642.4	629.2	623.1	615.1	598.4	580.8	563.2	549.1
50°	626.6	620.4	609.9	599.3	587.0	579.1	572.0	555.3	535.9	520.1	502.5
52.5°	582.6	577.3	568.5	557.9	542.1	535.9	528.9	510.4	491.9	473.5	457.6
55°	540.3	536.8	526.3	515.7	499.0	491.9	484.9	465.5	447.1	428.6	413.6
57.5°	496.3	493.7	483.1	470.8	455.9	448.8	440.0	420.7	403.1	384.6	368.7
60°	452.3	449.7	439.1	426.8	412.7	403.9	394.3	379.3	359.1	342.3	324.7
62.5°	410.1	406.6	397.8	384.6	368.7	359.9	351.1	333.5	315.1	297.5	281.6
65°	367.0	362.6	352.0	338.8	323.9	315.9	307.1	290.4	271.9	255.2	240.2
67.5°	323.9	319.5	308.0	297.5	279.9	271.9	264.0	247.3	229.7	213.0	198.9
70°	279.9	275.5	266.6	252.6	237.6	229.7	221.8	204.2	188.3	176.0	162.8
72.5°	236.7	233.2	224.4	211.2	197.1	189.2	180.4	165.4	151.4	138.2	128.5
75°	195.4	190.1	182.2	169.8	155.8	148.7	142.6	127.6	114.4	105.6	97.7
77.5°	155.8	149.6	140.8	131.1	117.9	110.9	104.7	92.4	83.6	77.4	75.7
80°	114.4	113.5	104.7	94.2	82.7	77.4	71.3	63.4	60.7	59.8	58.1
82.5°	80.1	76.6	69.5	59.8	51.0	47.5	45.8	44.0	42.2	42.2	40.5
85°	48.4	44.9	38.7	30.8	29.0	28.2	27.3	27.3	26.4	25.5	25.5
87.5°	21.1	17.6	13.2	12.3	11.4	11.4	12.3	12.3	12.3	11.4	11.4
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: P243392

CATALOG NUMBER: S123RDRP-H775D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8	1145.8
2.5°	1137.0	1141.4	1144.0	1144.9	1144.9	1144.9	1145.8	1145.8	1144.9	1144.0
5°	1130.8	1135.2	1137.0	1138.8	1138.8	1138.8	1138.8	1138.8	1137.9	1136.1
7.5°	1121.2	1123.8	1126.4	1125.6	1125.6	1124.7	1123.8	1124.7	1122.9	1122.9
10°	1103.6	1106.2	1108.0	1105.3	1105.3	1106.2	1106.2	1105.3	1102.7	1100.0
12.5°	1083.3	1086.0	1083.3	1084.2	1082.4	1080.7	1079.8	1078.9	1076.3	1074.5
15°	1056.9	1056.9	1055.2	1055.2	1052.5	1049.0	1048.1	1049.0	1045.5	1045.5
17.5°	1027.9	1026.1	1023.5	1021.7	1020.8	1020.8	1017.3	1017.3	1012.9	1012.0
20°	996.2	994.4	991.8	987.4	985.6	986.5	983.0	980.4	977.7	976.8
22.5°	962.8	958.4	955.7	951.3	947.8	947.8	945.2	940.8	938.1	935.5
25°	924.9	920.5	915.2	911.7	909.1	904.7	902.9	899.4	896.8	895.9
27.5°	886.2	879.2	872.1	868.6	866.8	861.6	858.9	857.2	851.9	851.0
30°	844.8	839.6	830.8	824.6	820.2	821.1	814.9	811.4	808.7	806.1
32.5°	805.2	796.4	787.6	779.7	774.4	773.5	767.4	763.9	761.2	758.6
35°	760.3	751.5	741.0	733.9	728.7	726.0	719.9	718.1	713.7	711.9
37.5°	715.5	705.8	695.2	686.4	682.9	676.7	674.1	669.7	666.2	666.2
40°	671.5	660.0	649.5	638.9	634.5	631.0	623.9	620.4	616.0	613.4
42.5°	625.7	612.5	602.8	593.1	587.0	584.3	576.4	572.0	567.6	566.7
45°	579.9	566.7	554.4	544.7	542.1	536.8	528.9	522.7	521.9	521.0
47.5°	533.3	520.1	508.7	498.1	494.6	488.4	483.1	478.7	473.5	470.8
50°	488.4	475.2	462.9	451.5	447.1	441.8	436.5	430.3	428.6	425.9
52.5°	443.5	428.6	415.4	404.8	401.3	396.9	390.7	385.5	382.8	381.1
55°	397.8	382.8	371.4	360.8	356.4	353.8	346.7	342.3	338.8	337.1
57.5°	352.9	337.9	327.4	319.5	313.3	310.7	303.6	299.2	297.5	296.6
60°	310.7	296.6	285.1	277.2	271.9	269.3	264.0	259.6	257.0	256.1
62.5°	268.4	256.1	245.5	237.6	234.1	230.6	226.2	222.6	220.0	220.0
65°	227.9	215.6	205.9	199.8	196.2	194.5	189.2	187.4	184.8	184.8
67.5°	188.3	179.5	172.5	164.6	161.9	161.9	156.6	154.9	153.1	153.1
70°	154.0	146.1	138.2	133.8	131.1	130.2	125.8	123.2	121.4	119.7
72.5°	120.6	113.5	106.5	105.6	105.6	104.7	104.7	103.0	103.0	103.8
75°	92.4	90.6	88.9	88.9	88.0	87.1	87.1	86.2	86.2	86.2
77.5°	73.9	73.0	72.2	71.3	71.3	70.4	69.5	69.5	69.5	69.5
80°	56.3	55.4	55.4	54.6	53.7	54.6	53.7	53.7	52.8	52.8
82.5°	39.6	39.6	39.6	38.7	38.7	38.7	38.7	37.8	37.8	38.7
85°	24.6	24.6	24.6	24.6	23.8	24.6	23.8	23.8	23.8	24.6
87.5°	10.6	11.4	10.6	11.4	11.4	10.6	10.6	10.6	10.6	10.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243392
 CATALOG NUMBER: S123RDRP-H775D830-X4F0-XX-UDD-F-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	20.67	22.22	21.03	22.53	22.85	17.86	19.41	18.23	19.73	20.04
	3H	22.49	23.89	22.87	24.22	24.58	18.93	20.33	19.31	20.66	21.02
	4H	23.18	24.49	23.58	24.84	25.22	19.33	20.64	19.73	20.99	21.37
	6H	23.68	24.89	24.09	25.26	25.65	19.65	20.86	20.06	21.23	21.62
	8H	23.84	24.99	24.26	25.38	25.78	19.76	20.92	20.19	21.31	21.71
	12H	23.93	25.04	24.36	25.42	25.85	19.84	20.94	20.27	21.32	21.75
4H	2H	20.91	22.22	21.31	22.57	22.94	18.58	19.89	18.98	20.24	20.61
	3H	22.90	23.99	23.31	24.39	24.79	19.80	20.89	20.21	21.29	21.69
	4H	23.69	24.67	24.12	25.08	25.52	20.29	21.27	20.72	21.68	22.12
	6H	24.30	25.16	24.76	25.60	26.06	20.71	21.56	21.16	22.00	22.46
	8H	24.51	25.30	24.97	25.75	26.21	20.85	21.65	21.31	22.09	22.56
	12H	24.65	25.36	25.13	25.84	26.31	20.96	21.68	21.45	22.16	22.63
8H	4H	23.72	24.52	24.19	24.97	25.43	20.60	21.40	21.07	21.85	22.31
	6H	24.39	25.05	24.89	25.54	26.02	21.12	21.78	21.61	22.27	22.75
	8H	24.63	25.22	25.14	25.73	26.22	21.32	21.92	21.84	22.42	22.91
	12H	24.82	25.35	25.33	25.84	26.40	21.50	22.02	22.01	22.51	23.08
12H	4H	23.71	24.43	24.19	24.90	25.37	20.64	21.36	21.12	21.83	22.30
	6H	24.37	24.97	24.89	25.48	25.96	21.17	21.77	21.69	22.28	22.76
	8H	24.65	25.17	25.16	25.67	26.23	21.43	21.96	21.94	22.45	23.01