

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: P243388

Luminaire Tested: S123RDRP-H1000D927-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243388
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-H1000D927-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

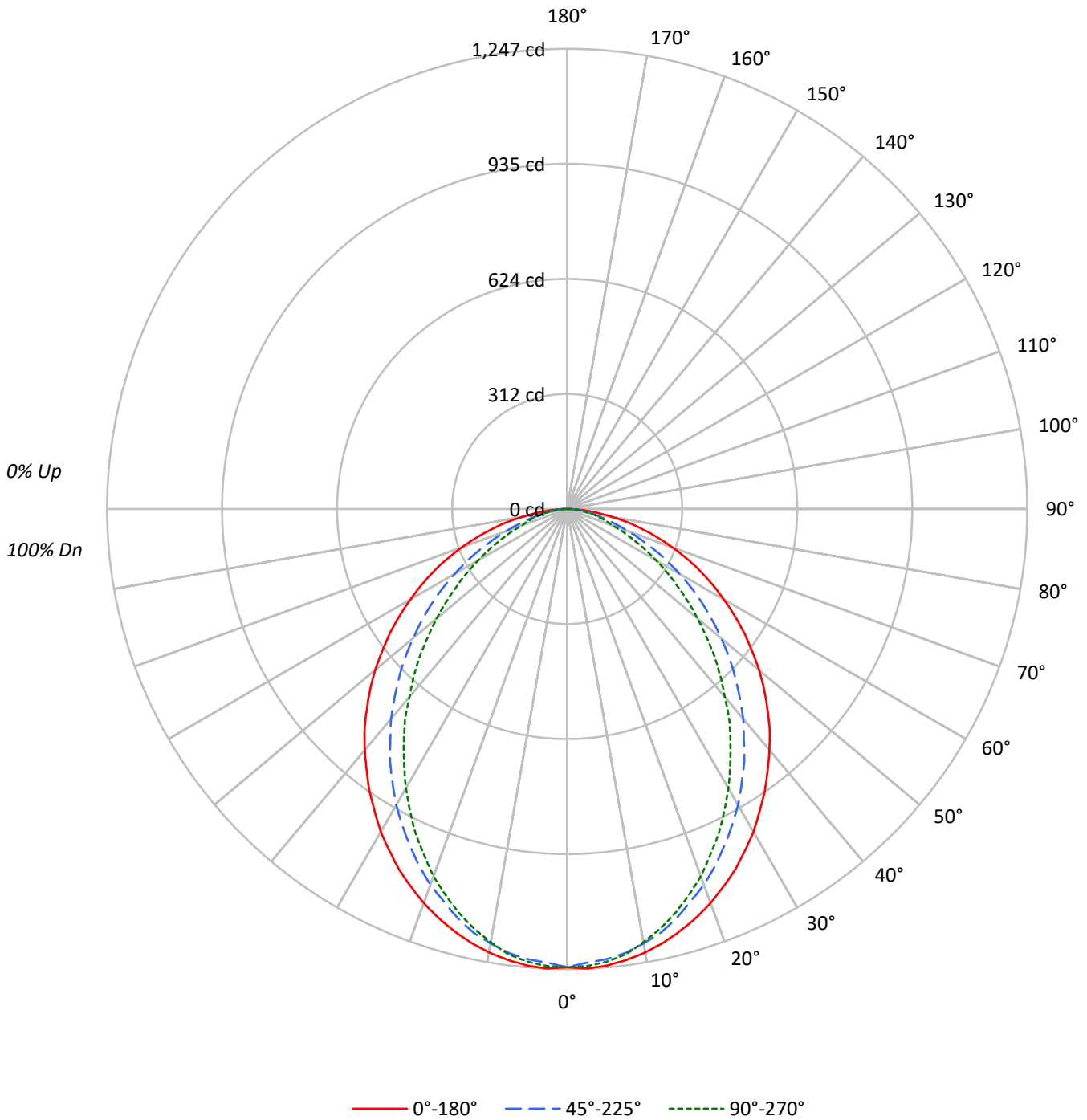
Lumens per Lamp: N/A
Luminaire Lumens: 2804.0 lumens
Efficiency: N/A
Efficacy: 89.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 31.5
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	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°	15053	15053	15053
5°	15111	14903	14983
10°	15016	14711	14675
15°	14854	14400	14220
20°	14655	13978	13658
25°	14416	13472	12986
30°	14138	12963	12229
35°	13818	12378	11419
40°	13494	11742	10519
45°	13163	11038	9680
50°	12808	10272	8706
55°	12377	9474	7720
60°	11886	8533	6730
65°	11409	7469	5745
70°	10749	6255	4597
75°	9919	4960	4379
80°	8656	4398	3993
85°	7301	3852	3713

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13163 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.8	4.2
10°-20°	325.3	11.6
20°-30°	468.3	16.7
30°-40°	527.5	18.8
40°-50°	503.9	18.0
50°-60°	412.0	14.7
60°-70°	276.7	9.9
70°-80°	138.0	4.9
80°-90°	35.7	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°	910.3	32.5
0°-40°	1437.8	51.3
0°-60°	2353.7	83.9
0°-90°	2804.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2804.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1242	1242	1242	1242	1242	
5°	1242	1237	1225	1234	1231	118
15°	1184	1175	1148	1141	1133	334
25°	1078	1054	1007	985	971	496
35°	934	898	836	790	772	584
45°	768	722	644	588	565	593
55°	586	533	448	386	365	523
65°	398	342	260	213	200	393
75°	212	161	106	95	94	224
85°	52	30	28	26	27	61
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°	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9
2.5°	1246.7	1243.8	1240.0	1241.0	1241.9	1242.9	1242.9	1241.9	1239.1	1235.3	1230.5
5°	1241.9	1239.1	1235.3	1235.3	1237.2	1237.2	1237.2	1236.2	1233.3	1229.5	1224.8
7.5°	1232.4	1230.5	1225.7	1226.7	1227.6	1227.6	1227.6	1226.7	1222.9	1218.1	1213.3
10°	1220.0	1217.1	1213.3	1213.3	1214.3	1214.3	1214.3	1212.4	1207.6	1201.9	1195.2
12.5°	1203.8	1200.9	1197.1	1197.1	1197.1	1197.1	1197.1	1194.2	1186.6	1180.9	1175.2
15°	1183.7	1180.9	1177.1	1177.1	1176.1	1175.2	1173.3	1168.5	1161.8	1155.1	1147.5
17.5°	1161.8	1158.0	1153.2	1152.3	1151.3	1150.4	1147.5	1144.6	1135.1	1125.6	1114.1
20°	1136.1	1132.2	1127.5	1126.5	1123.7	1120.8	1118.9	1113.2	1102.7	1091.2	1083.6
22.5°	1107.4	1103.6	1098.9	1096.9	1091.2	1089.3	1086.5	1077.9	1066.4	1055.9	1047.3
25°	1077.9	1073.1	1067.4	1064.5	1057.8	1054.0	1053.1	1040.7	1029.2	1017.8	1007.3
27.5°	1043.5	1039.7	1034.9	1029.2	1022.5	1017.8	1015.9	1004.4	990.1	976.8	967.2
30°	1010.1	1004.4	999.7	993.0	983.4	978.7	974.8	963.4	951.0	934.8	926.2
32.5°	971.0	967.2	961.5	954.8	945.3	941.5	935.7	921.4	905.2	893.8	880.4
35°	933.8	930.0	921.4	914.8	901.4	897.6	891.9	879.5	861.3	848.0	836.5
37.5°	892.8	888.0	881.4	871.8	860.4	855.6	848.0	835.6	814.6	801.2	786.9
40°	852.8	846.1	838.4	828.0	816.5	811.7	805.1	786.9	769.8	754.5	742.1
42.5°	812.7	805.1	795.5	786.0	773.6	766.9	759.3	742.1	723.0	708.7	691.6
45°	767.9	762.1	752.6	741.2	726.8	722.1	713.5	695.4	676.3	661.0	643.9
47.5°	724.0	717.3	707.8	696.3	682.0	675.3	666.8	648.6	629.6	610.5	595.2
50°	679.2	672.5	661.0	649.6	636.2	627.6	620.0	601.9	580.9	563.7	544.7
52.5°	631.5	625.7	616.2	604.8	587.6	580.9	573.3	553.2	533.2	513.2	496.0
55°	585.7	581.9	570.4	559.0	540.8	533.2	525.6	504.6	484.6	464.5	448.3
57.5°	538.0	535.1	523.7	510.3	494.1	486.5	476.9	455.9	436.9	416.8	399.7
60°	490.3	487.4	476.0	462.6	447.4	437.8	427.3	411.1	389.2	371.1	352.0
62.5°	444.5	440.7	431.1	416.8	399.7	390.1	380.6	361.5	341.5	322.4	305.2
65°	397.8	393.0	381.5	367.2	351.0	342.4	332.9	314.8	294.7	276.6	260.4
67.5°	351.0	346.3	333.9	322.4	303.3	294.7	286.2	268.0	249.0	230.8	215.6
70°	303.3	298.6	289.0	273.8	257.5	249.0	240.4	221.3	204.1	190.8	176.5
72.5°	256.6	252.8	243.2	228.9	213.7	205.1	195.5	179.3	164.1	149.8	139.3
75°	211.8	206.0	197.5	184.1	168.8	161.2	154.5	138.3	124.0	114.5	105.9
77.5°	168.8	162.2	152.6	142.1	127.8	120.2	113.5	100.2	90.6	83.9	82.0
80°	124.0	123.0	113.5	102.1	89.7	83.9	77.3	68.7	65.8	64.9	63.0
82.5°	86.8	83.0	75.4	64.9	55.3	51.5	49.6	47.7	45.8	45.8	43.9
85°	52.5	48.6	42.0	33.4	31.5	30.5	29.6	29.6	28.6	27.7	27.7
87.5°	22.9	19.1	14.3	13.4	12.4	12.4	13.4	13.4	13.4	12.4	12.4
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°
0°	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9	1241.9
2.5°	1232.4	1237.2	1240.0	1241.0	1241.0	1241.0	1241.9	1241.9	1241.0	1240.0
5°	1225.7	1230.5	1232.4	1234.3	1234.3	1234.3	1234.3	1234.3	1233.3	1231.4
7.5°	1215.2	1218.1	1220.9	1220.0	1220.0	1219.0	1218.1	1219.0	1217.1	1217.1
10°	1196.1	1199.0	1200.9	1198.1	1198.1	1199.0	1199.0	1198.1	1195.2	1192.3
12.5°	1174.2	1177.1	1174.2	1175.2	1173.3	1171.3	1170.4	1169.4	1166.6	1164.7
15°	1145.6	1145.6	1143.7	1143.7	1140.8	1137.0	1136.1	1137.0	1133.2	1133.2
17.5°	1114.1	1112.2	1109.3	1107.4	1106.5	1106.5	1102.7	1102.7	1097.9	1096.9
20°	1079.8	1077.9	1075.0	1070.2	1068.3	1069.3	1065.5	1062.6	1059.7	1058.8
22.5°	1043.5	1038.8	1035.9	1031.1	1027.3	1027.3	1024.5	1019.7	1016.8	1014.0
25°	1002.5	997.7	992.0	988.2	985.3	980.6	978.7	974.8	972.0	971.0
27.5°	960.5	952.9	945.3	941.5	939.6	933.8	931.0	929.1	923.3	922.4
30°	915.7	910.0	900.4	893.8	889.0	890.0	883.3	879.5	876.6	873.7
32.5°	872.8	863.2	853.7	845.1	839.4	838.4	831.8	828.0	825.1	822.2
35°	824.1	814.6	803.2	795.5	789.8	786.9	780.3	778.4	773.6	771.7
37.5°	775.5	765.0	753.6	744.0	740.2	733.5	730.7	725.9	722.1	722.1
40°	727.8	715.4	704.0	692.5	687.7	683.9	676.3	672.5	667.7	664.8
42.5°	678.2	663.9	653.4	642.9	636.2	633.4	624.8	620.0	615.2	614.3
45°	628.6	614.3	600.9	590.4	587.6	581.9	573.3	566.6	565.6	564.7
47.5°	578.0	563.7	551.3	539.9	536.1	529.4	523.7	518.9	513.2	510.3
50°	529.4	515.1	501.7	489.3	484.6	478.8	473.1	466.4	464.5	461.7
52.5°	480.7	464.5	450.2	438.8	435.0	430.2	423.5	417.8	414.9	413.0
55°	431.1	414.9	402.5	391.1	386.3	383.5	375.8	371.1	367.2	365.3
57.5°	382.5	366.3	354.8	346.3	339.6	336.7	329.1	324.3	322.4	321.5
60°	336.7	321.5	309.1	300.5	294.7	291.9	286.2	281.4	278.5	277.6
62.5°	290.9	277.6	266.1	257.5	253.7	249.9	245.1	241.3	238.5	238.5
65°	247.1	233.7	223.2	216.5	212.7	210.8	205.1	203.2	200.3	200.3
67.5°	204.1	194.6	187.0	178.4	175.5	175.5	169.8	167.9	166.0	166.0
70°	166.9	158.3	149.8	145.0	142.1	141.2	136.4	133.5	131.6	129.7
72.5°	130.7	123.0	115.4	114.5	114.5	113.5	113.5	111.6	111.6	112.6
75°	100.2	98.2	96.3	96.3	95.4	94.4	94.4	93.5	93.5	93.5
77.5°	80.1	79.2	78.2	77.3	77.3	76.3	75.4	75.4	75.4	75.4
80°	61.0	60.1	60.1	59.1	58.2	59.1	58.2	58.2	57.2	57.2
82.5°	42.9	42.9	42.9	42.0	42.0	42.0	42.0	41.0	41.0	42.0
85°	26.7	26.7	26.7	26.7	25.8	26.7	25.8	25.8	25.8	26.7
87.5°	11.4	12.4	11.4	12.4	12.4	11.4	11.4	11.4	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



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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	20.95	22.50	21.31	22.81	23.13	18.14	19.69	18.50	20.01	20.32
	3H	22.77	24.17	23.15	24.50	24.86	19.21	20.61	19.59	20.94	21.30
	4H	23.46	24.77	23.86	25.12	25.50	19.61	20.92	20.01	21.27	21.65
	6H	23.96	25.17	24.37	25.54	25.93	19.93	21.15	20.35	21.51	21.90
	8H	24.12	25.27	24.54	25.66	26.06	20.04	21.20	20.47	21.59	21.99
	12H	24.21	25.32	24.64	25.70	26.13	20.12	21.22	20.55	21.61	22.03
4H	2H	21.19	22.50	21.59	22.85	23.22	18.86	20.17	19.26	20.52	20.89
	3H	23.18	24.27	23.59	24.67	25.07	20.08	21.17	20.49	21.57	21.97
	4H	23.97	24.95	24.40	25.36	25.80	20.57	21.55	21.00	21.96	22.40
	6H	24.58	25.44	25.04	25.88	26.34	20.99	21.84	21.44	22.28	22.74
	8H	24.79	25.58	25.25	26.03	26.49	21.13	21.93	21.60	22.37	22.84
	12H	24.93	25.64	25.41	26.12	26.59	21.24	21.96	21.73	22.44	22.91
8H	4H	24.00	24.80	24.47	25.25	25.71	20.88	21.68	21.35	22.13	22.59
	6H	24.67	25.33	25.17	25.82	26.30	21.40	22.06	21.89	22.55	23.03
	8H	24.91	25.50	25.42	26.01	26.50	21.60	22.20	22.12	22.71	23.19
	12H	25.10	25.63	25.61	26.12	26.68	21.78	22.30	22.29	22.79	23.36
12H	4H	23.99	24.71	24.47	25.18	25.65	20.92	21.64	21.40	22.11	22.58
	6H	24.65	25.25	25.17	25.76	26.24	21.45	22.05	21.97	22.56	23.04
	8H	24.93	25.45	25.44	25.95	26.51	21.71	22.24	22.22	22.73	23.29