

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: P243565

Luminaire Tested: S124RDRP-H1020D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243565  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-65)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124RDRP-H1020D830-X4F0-XX-UDD-F-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

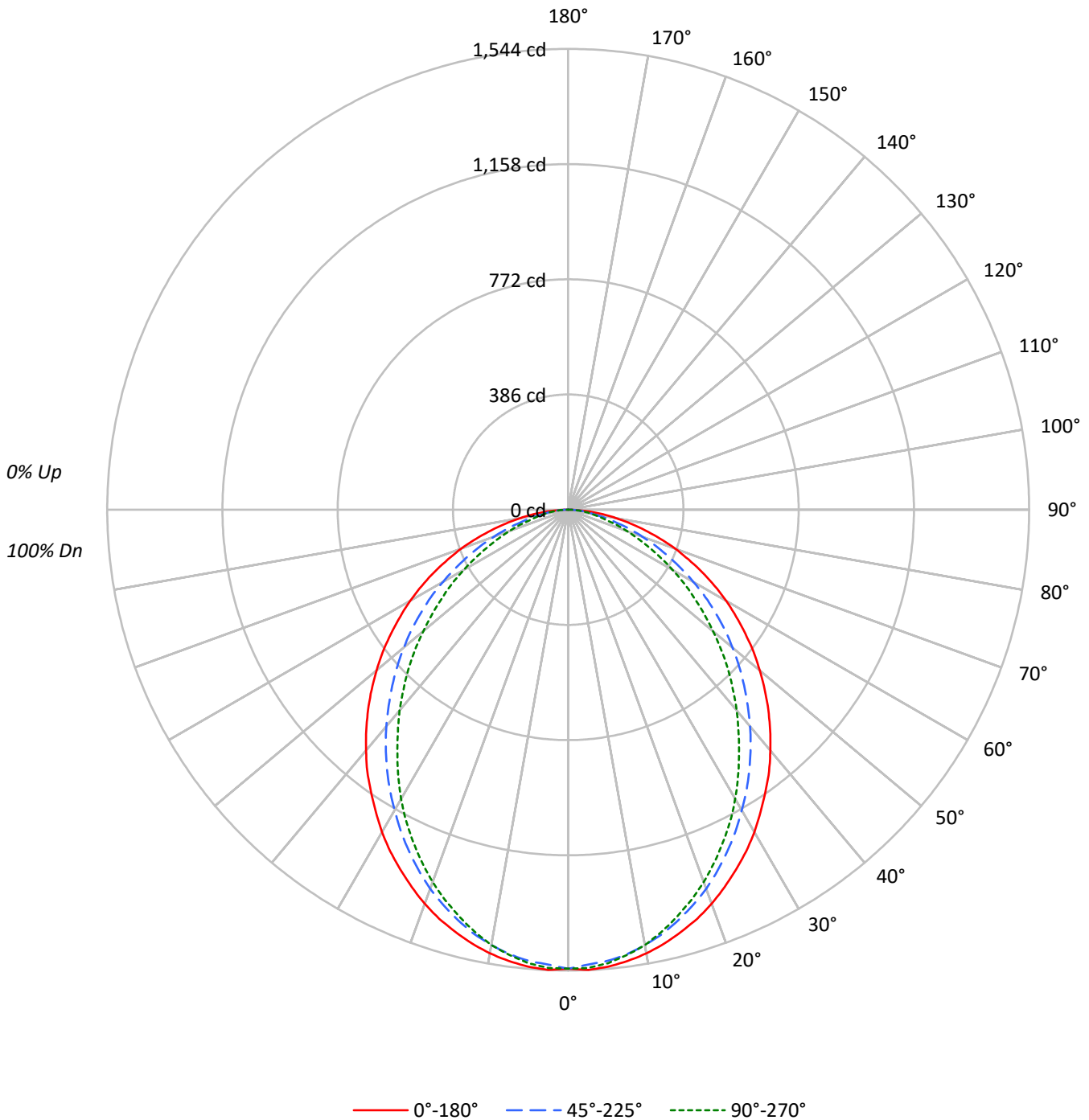
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3626.3 lumens  
Efficiency: N/A  
Efficacy: 115.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.1 / 1.25  
Luminous Opening: Rectangular (W 0.31' 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	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	97	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61					61			
4	84	73	64	58	82	71	64	57	69	62	57	67	61	56	64	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36					36			
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	34	33					33			
9	58	45	37	32	57	45	37	32	44	37	32	42	36	31	41	36	31	30					30			
10	55	42	34	29	54	41	34	29	40	34	29	39	33	29	39	33	29	27					27			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13669	13669	13669
5°	13712	13540	13610
10°	13624	13368	13368
15°	13472	13107	12982
20°	13290	12786	12560
25°	13045	12377	12044
30°	12802	11929	11485
35°	12500	11491	10825
40°	12221	10997	10193
45°	11913	10471	9530
50°	11583	9935	8758
55°	11222	9322	7986
60°	10875	8615	7182
65°	10407	7782	6278
70°	9910	6872	5458
75°	9160	5729	4444
80°	8364	4474	4064
85°	7404	4284	4049

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11913 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.6	4.0
10°-20°	403.9	11.1
20°-30°	585.7	16.2
30°-40°	667.6	18.4
40°-50°	649.5	17.9
50°-60°	545.6	15.0
60°-70°	380.1	10.5
70°-80°	196.3	5.4
80°-90°	53.1	1.5
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°	1134.2	31.3
0°-40°	1801.7	49.7
0°-60°	2996.8	82.6
0°-90°	3626.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3626.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1538	1538	1538	1538	1538	
5°	1537	1532	1517	1529	1525	146
15°	1464	1453	1424	1422	1411	413
25°	1330	1305	1262	1244	1228	613
35°	1152	1117	1059	1019	998	721
45°	948	902	833	780	758	731
55°	724	678	602	540	515	648
65°	495	447	370	317	298	490
75°	267	226	167	140	129	284
85°	73	46	42	40	40	83
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1537.8	1537.8	1537.8	1537.8	1537.8
2.5°	1543.5	1538.9	1525.3	1537.8	1536.7
5°	1536.7	1532.1	1517.4	1528.7	1525.3
7.5°	1525.3	1519.6	1502.6	1510.6	1504.9
10°	1509.4	1503.8	1481.1	1486.7	1481.1
12.5°	1489.0	1481.1	1456.1	1457.2	1448.2
15°	1464.0	1452.7	1424.3	1422.0	1410.7
17.5°	1436.8	1422.0	1389.1	1383.5	1371.0
20°	1405.0	1386.9	1351.7	1339.2	1327.8
22.5°	1368.7	1347.1	1308.6	1293.8	1279.0
25°	1330.1	1305.2	1262.0	1243.9	1228.0
27.5°	1290.4	1260.9	1214.4	1191.7	1175.8
30°	1247.3	1213.2	1162.2	1136.0	1119.0
32.5°	1199.6	1165.6	1112.2	1080.4	1058.9
35°	1151.9	1116.8	1058.9	1019.2	997.6
37.5°	1105.4	1065.7	1003.3	962.4	937.4
40°	1053.2	1011.2	947.7	901.1	878.4
42.5°	1001.0	957.9	889.8	841.0	816.0
45°	947.7	902.3	833.0	779.7	758.1
47.5°	893.2	847.8	776.3	720.7	695.7
50°	837.6	792.2	718.4	657.1	633.3
52.5°	783.1	735.4	661.7	599.2	574.3
55°	724.1	677.5	601.5	540.2	515.3
57.5°	667.3	618.5	544.8	482.3	461.9
60°	611.7	562.9	484.6	424.5	404.0
62.5°	552.7	503.9	426.7	368.8	350.7
65°	494.8	447.2	370.0	316.6	298.5
67.5°	435.8	392.7	317.8	266.7	252.0
70°	381.3	332.5	264.4	220.2	210.0
72.5°	323.5	280.3	214.5	178.2	170.2
75°	266.7	225.8	166.8	139.6	129.4
77.5°	214.5	174.8	126.0	103.3	103.3
80°	163.4	128.2	87.4	81.7	79.4
82.5°	115.8	82.8	64.7	60.2	59.0
85°	72.6	46.5	42.0	39.7	39.7
87.5°	35.2	21.6	21.6	20.4	20.4
90°	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	20.54	22.11	20.90	22.43	22.74	18.64	20.22	19.00	20.53	20.84
	3H	22.35	23.77	22.73	24.10	24.46	19.90	21.32	20.28	21.65	22.01
	4H	23.04	24.37	23.43	24.72	25.09	20.30	21.63	20.70	21.98	22.36
	6H	23.55	24.78	23.96	25.15	25.54	20.58	21.81	20.99	22.18	22.57
	8H	23.72	24.90	24.15	25.29	25.69	20.68	21.85	21.10	22.24	22.64
	12H	23.84	24.96	24.27	25.35	25.78	20.76	21.88	21.19	22.27	22.70
4H	2H	20.89	22.22	21.29	22.57	22.95	19.34	20.68	19.74	21.02	21.40
	3H	22.91	24.02	23.32	24.42	24.82	20.79	21.90	21.20	22.30	22.70
	4H	23.72	24.72	24.15	25.13	25.57	21.27	22.27	21.70	22.69	23.13
	6H	24.36	25.23	24.81	25.67	26.13	21.64	22.51	22.09	22.95	23.41
	8H	24.58	25.39	25.04	25.84	26.30	21.77	22.59	22.24	23.03	23.50
	12H	24.74	25.47	25.22	25.95	26.42	21.89	22.62	22.37	23.10	23.57
8H	4H	23.82	24.64	24.29	25.08	25.55	21.60	22.42	22.07	22.86	23.33
	6H	24.55	25.22	25.04	25.71	26.19	22.06	22.73	22.55	23.22	23.70
	8H	24.82	25.43	25.33	25.94	26.42	22.25	22.86	22.76	23.36	23.85
	12H	25.05	25.59	25.56	26.08	26.64	22.43	22.97	22.94	23.46	24.02
12H	4H	23.82	24.55	24.30	25.02	25.49	21.65	22.38	22.13	22.86	23.33
	6H	24.54	25.15	25.05	25.66	26.14	22.12	22.73	22.63	23.23	23.72
	8H	24.86	25.39	25.36	25.88	26.45	22.37	22.90	22.87	23.39	23.96