

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: P243589

Luminaire Tested: S124RDRP-H1020D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243589  
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-H1020D940-X4F0-XX-UDD-F-W  
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

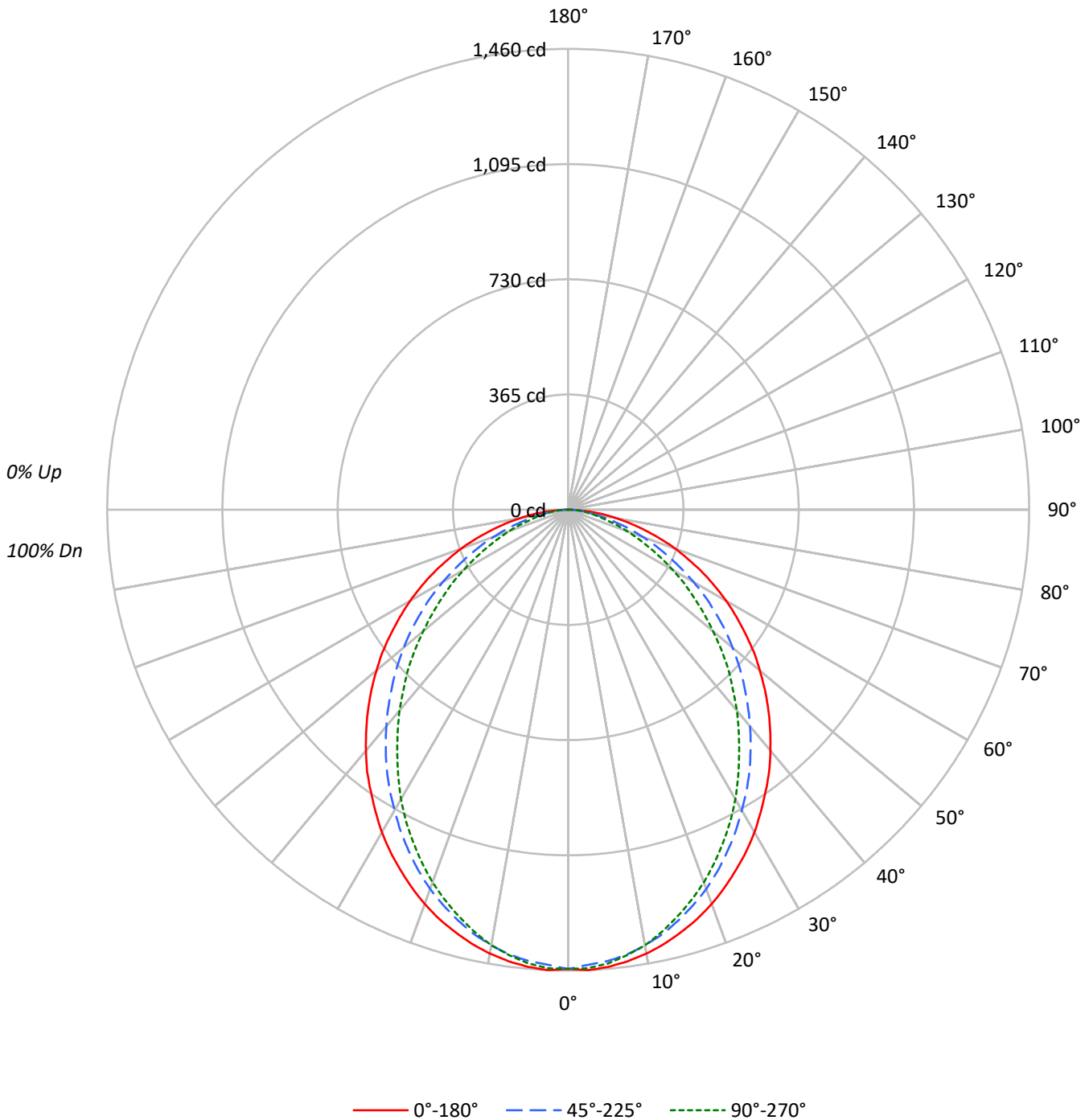
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3430.7 lumens  
Efficiency: N/A  
Efficacy: 108.9 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°	12932	12932	12932
5°	12972	12809	12877
10°	12889	12647	12647
15°	12746	12400	12282
20°	12574	12097	11883
25°	12342	11711	11395
30°	12112	11285	10867
35°	11826	10871	10242
40°	11562	10403	9643
45°	11270	9907	9016
50°	10958	9399	8285
55°	10616	8820	7555
60°	10288	8151	6795
65°	9846	7362	5940
70°	9377	6503	5162
75°	8665	5420	4204
80°	7914	4233	3849
85°	7007	4049	3835

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11270 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	4.0
10°-20°	382.1	11.1
20°-30°	554.1	16.2
30°-40°	631.6	18.4
40°-50°	614.5	17.9
50°-60°	516.2	15.0
60°-70°	359.6	10.5
70°-80°	185.7	5.4
80°-90°	50.2	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°	1073.0	31.3
0°-40°	1704.6	49.7
0°-60°	2835.2	82.6
0°-90°	3430.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3430.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1455	1455	1455	1455	1455	
5°	1454	1450	1436	1446	1443	138
15°	1385	1374	1348	1345	1335	391
25°	1258	1235	1194	1177	1162	580
35°	1090	1056	1002	964	944	682
45°	896	854	788	738	717	692
55°	685	641	569	511	488	613
65°	468	423	350	300	282	463
75°	252	214	158	132	122	269
85°	69	44	40	38	38	79
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1454.9	1454.9	1454.9	1454.9	1454.9
2.5°	1460.2	1455.9	1443.1	1454.9	1453.8
5°	1453.8	1449.5	1435.5	1446.3	1443.1
7.5°	1443.1	1437.7	1421.6	1429.1	1423.7
10°	1428.0	1422.7	1401.2	1406.6	1401.2
12.5°	1408.7	1401.2	1377.6	1378.6	1370.1
15°	1385.1	1374.3	1347.5	1345.4	1334.6
17.5°	1359.3	1345.4	1314.2	1308.8	1297.0
20°	1329.3	1312.1	1278.8	1267.0	1256.2
22.5°	1294.9	1274.5	1238.0	1224.0	1210.1
25°	1258.4	1234.8	1194.0	1176.8	1161.8
27.5°	1220.8	1192.9	1148.9	1127.4	1112.4
30°	1180.0	1147.8	1099.5	1074.8	1058.7
32.5°	1134.9	1102.7	1052.2	1022.2	1001.8
35°	1089.8	1056.5	1001.8	964.2	943.8
37.5°	1045.8	1008.2	949.2	910.5	886.9
40°	996.4	956.7	896.5	852.5	831.0
42.5°	947.0	906.2	841.8	795.6	772.0
45°	896.5	853.6	788.1	737.6	717.2
47.5°	845.0	802.1	734.4	681.8	658.2
50°	792.4	749.4	679.7	621.7	599.1
52.5°	740.9	695.8	626.0	566.9	543.3
55°	685.0	641.0	569.1	511.1	487.5
57.5°	631.3	585.2	515.4	456.3	437.0
60°	578.7	532.6	458.5	401.6	382.2
62.5°	522.9	476.7	403.7	349.0	331.8
65°	468.1	423.0	350.0	299.6	282.4
67.5°	412.3	371.5	300.6	252.3	238.4
70°	360.8	314.6	250.2	208.3	198.6
72.5°	306.0	265.2	202.9	168.6	161.1
75°	252.3	213.7	157.8	132.1	122.4
77.5°	202.9	165.4	119.2	97.7	97.7
80°	154.6	121.3	82.7	77.3	75.2
82.5°	109.5	78.4	61.2	56.9	55.8
85°	68.7	44.0	39.7	37.6	37.6
87.5°	33.3	20.4	20.4	19.3	19.3
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	20.34	21.92	20.71	22.23	22.55	18.45	20.02	18.81	20.34	20.65
	3H	22.16	23.58	22.54	23.91	24.27	19.71	21.13	20.09	21.46	21.82
	4H	22.84	24.18	23.24	24.53	24.90	20.11	21.44	20.51	21.79	22.17
	6H	23.36	24.59	23.77	24.96	25.35	20.38	21.62	20.80	21.98	22.38
	8H	23.53	24.70	23.95	25.09	25.49	20.49	21.66	20.91	22.05	22.45
	12H	23.65	24.77	24.08	25.15	25.58	20.57	21.69	21.00	22.07	22.50
4H	2H	20.70	22.03	21.10	22.38	22.76	19.15	20.48	19.55	20.83	21.21
	3H	22.72	23.83	23.13	24.23	24.63	20.60	21.71	21.01	22.11	22.51
	4H	23.52	24.53	23.96	24.94	25.38	21.08	22.08	21.51	22.50	22.93
	6H	24.17	25.04	24.62	25.48	25.94	21.45	22.32	21.90	22.76	23.22
	8H	24.38	25.20	24.85	25.64	26.11	21.58	22.40	22.04	22.84	23.31
	12H	24.55	25.28	25.03	25.76	26.23	21.70	22.43	22.18	22.91	23.38
8H	4H	23.63	24.45	24.09	24.89	25.36	21.41	22.23	21.87	22.67	23.14
	6H	24.36	25.03	24.85	25.52	26.00	21.86	22.54	22.36	23.03	23.51
	8H	24.63	25.24	25.14	25.74	26.23	22.06	22.66	22.57	23.17	23.66
	12H	24.86	25.39	25.37	25.89	26.45	22.24	22.78	22.75	23.27	23.83
12H	4H	23.62	24.36	24.10	24.83	25.30	21.46	22.19	21.94	22.67	23.14
	6H	24.35	24.96	24.86	25.47	25.95	21.93	22.53	22.44	23.04	23.53
	8H	24.66	25.20	25.17	25.69	26.26	22.17	22.71	22.68	23.20	23.76