

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: P243532

Luminaire Tested: S124DRP-H1195D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243532  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-55)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-H1195D830-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

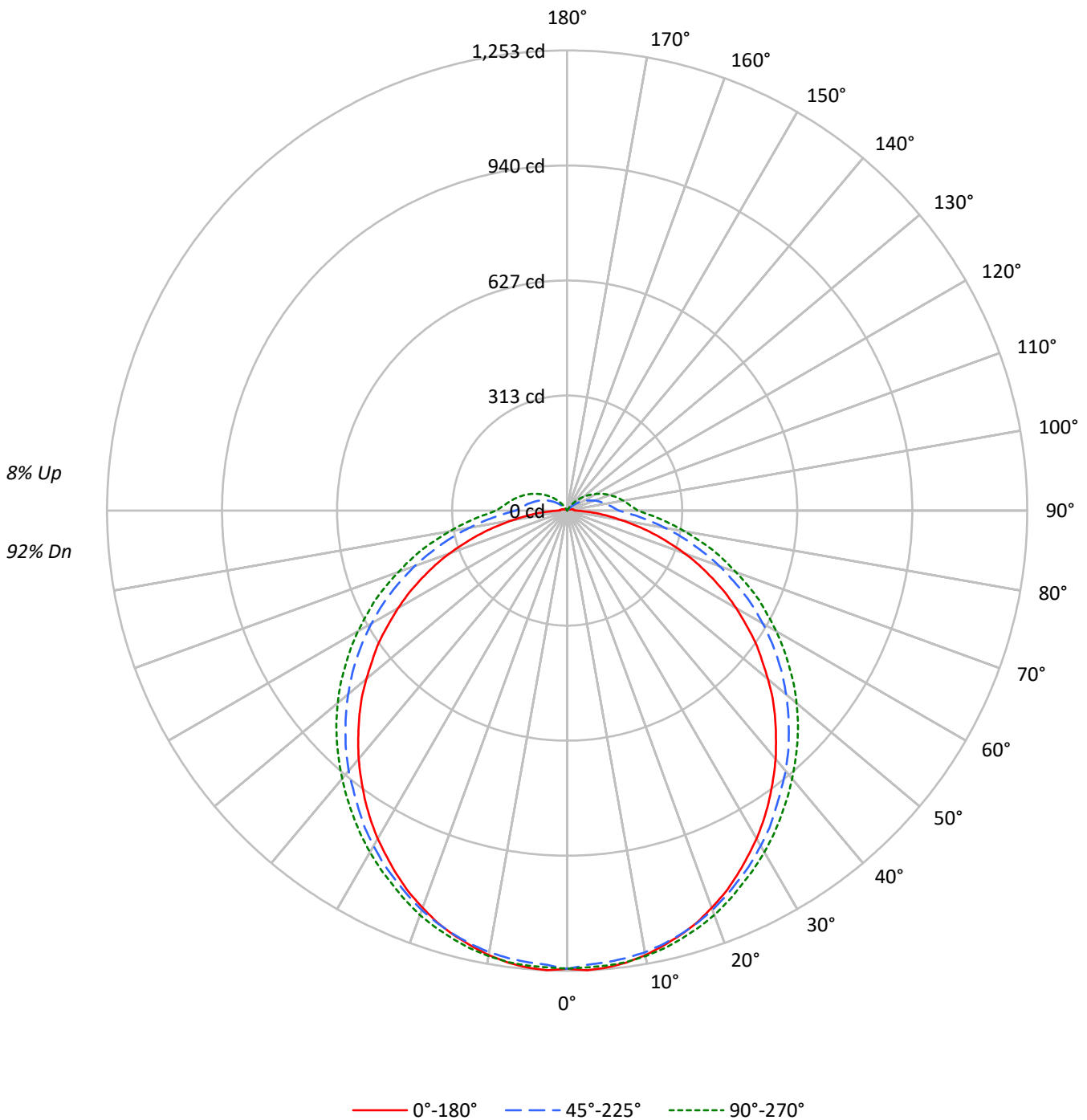
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4264.5 lumens  
Efficiency: N/A  
Efficacy: 113.1 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')  
CIE Type: Direct  
  
Input Watts (W): 37.7  
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	0
RCR																		
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60
3	86	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	46	55	49	45	43
5	72	59	50	43	70	58	49	42	55	47	41	52	45	40	49	43	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	29	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	20

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

	0°	45°	90°
0°	11090	11090	11090
5°	11123	10821	10844
10°	11051	10639	10618
15°	10942	10423	10362
20°	10801	10192	10106
25°	10634	9928	9807
30°	10458	9680	9552
35°	10262	9405	9287
40°	10064	9170	9038
45°	9855	8916	8803
50°	9618	8659	8557
55°	9409	8387	8273
60°	9111	8084	7997
65°	8770	7743	7717
70°	8361	7356	7318
75°	7713	6881	7028
80°	6835	6424	6618
85°	6189	6051	6380

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9855 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.1	2.8
10°-20°	338.7	7.9
20°-30°	512.6	12.0
30°-40°	620.8	14.6
40°-50°	656.6	15.4
50°-60°	618.5	14.5
60°-70°	514.0	12.1
70°-80°	361.3	8.5
80°-90°	203.5	4.8
90°-100°	120.7	2.8
100°-110°	89.4	2.1
110°-120°	59.6	1.4
120°-130°	33.7	0.8
130°-140°	14.4	0.3
140°-150°	2.8	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	969.4	22.7
0°-40°	1590.2	37.3
0°-60°	2865.3	67.2
0°-90°	3944.0	92.5
90°-120°	269.8	6.3
90°-150°	320.6	7.5
90°-180°	321.0	7.5
0°-180°	4264.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1248	1248	1248	1248	1248	
5°	1249	1244	1234	1245	1244	119
15°	1196	1198	1194	1208	1206	337
25°	1095	1104	1108	1124	1124	505
35°	960	976	990	1012	1016	601
45°	801	826	854	879	887	618
55°	626	659	699	729	737	558
65°	436	480	529	562	577	432
75°	243	294	353	392	408	257
85°	76	134	198	240	253	78
90°	22	78	140	179	192	15
95°	19	64	122	160	171	15
105°	13	41	93	127	139	14
115°	9	21	65	96	107	9
125°	5	4	38	65	74	5
135°	3	3	12	34	42	2
145°	1	0	0	8	13	1
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1247.6	1247.6	1247.6	1247.6	1247.6
2.5°	1252.9	1248.9	1238.3	1246.2	1244.9
5°	1248.9	1243.6	1234.3	1244.9	1243.6
7.5°	1240.9	1237.0	1229.0	1240.9	1239.6
10°	1229.0	1226.4	1221.1	1231.7	1231.7
12.5°	1213.1	1213.1	1209.1	1221.1	1221.1
15°	1195.9	1198.5	1194.5	1207.8	1206.5
17.5°	1176.0	1178.6	1177.3	1190.6	1190.6
20°	1150.8	1154.8	1157.4	1172.0	1172.0
22.5°	1125.6	1130.9	1133.6	1149.5	1149.5
25°	1095.1	1104.4	1108.4	1124.3	1124.3
27.5°	1063.3	1075.2	1083.2	1097.8	1100.4
30°	1031.5	1044.7	1054.0	1069.9	1073.9
32.5°	997.0	1010.3	1024.8	1040.8	1046.1
35°	959.9	975.8	990.4	1011.6	1015.6
37.5°	921.4	940.0	957.2	979.8	985.1
40°	883.0	905.5	925.4	946.6	953.2
42.5°	841.9	864.4	890.9	913.5	920.1
45°	800.8	826.0	853.8	879.0	887.0
47.5°	759.7	786.2	816.7	843.2	852.5
50°	713.3	742.4	778.2	804.8	815.4
52.5°	668.2	700.0	739.8	766.3	778.2
55°	625.8	658.9	698.7	729.2	737.1
57.5°	576.7	613.8	657.6	690.7	698.7
60°	531.6	568.8	615.2	648.3	657.6
62.5°	485.2	525.0	572.7	605.9	615.2
65°	436.2	479.9	529.0	562.1	576.7
67.5°	388.5	432.2	483.9	521.0	533.0
70°	340.7	385.8	441.5	478.6	487.9
72.5°	290.3	339.4	396.4	434.9	448.1
75°	242.6	294.3	352.7	392.4	408.3
77.5°	196.2	250.6	311.6	352.7	363.3
80°	149.8	209.5	270.5	311.6	324.8
82.5°	112.7	168.4	232.0	275.8	286.4
85°	75.6	133.9	197.5	240.0	253.2
87.5°	45.1	104.7	165.7	205.5	218.8
90°	22.5	78.2	140.5	179.0	192.2
92.5°	19.9	70.3	129.9	168.4	181.6
95°	18.6	63.6	122.0	160.4	171.0
97.5°	17.2	58.3	114.0	151.1	163.1
100°	15.9	51.7	107.4	143.2	155.1
102.5°	14.6	46.4	99.4	135.2	147.2
105°	13.3	41.1	92.8	127.3	139.2
107.5°	11.9	35.8	86.2	119.3	131.3
110°	10.6	30.5	79.5	111.4	123.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	9.3	26.5	71.6	103.4	115.3
115°	9.3	21.2	65.0	95.5	107.4
117.5°	8.0	15.9	58.3	87.5	98.1
120°	8.0	11.9	51.7	79.5	90.2
122.5°	6.6	8.0	45.1	72.9	82.2
125°	5.3	4.0	38.4	65.0	74.2
127.5°	5.3	4.0	31.8	57.0	66.3
130°	4.0	4.0	25.2	49.1	58.3
132.5°	4.0	2.7	18.6	42.4	50.4
135°	2.7	2.7	11.9	34.5	42.4
137.5°	2.7	1.3	8.0	27.8	35.8
140°	2.7	1.3	2.7	21.2	27.8
142.5°	1.3	1.3	0.0	14.6	19.9
145°	1.3	0.0	0.0	8.0	13.3
147.5°	1.3	0.0	0.0	1.3	6.6
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	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	18.15	19.67	18.62	20.14	20.64	19.73	21.26	20.21	21.72	22.22
	3H	19.80	21.19	20.29	21.66	22.20	22.04	23.43	22.53	23.91	24.44
	4H	20.37	21.69	20.88	22.18	22.73	23.11	24.43	23.62	24.92	25.47
	6H	20.75	21.98	21.28	22.48	23.05	24.16	25.38	24.68	25.89	26.46
	8H	20.86	22.03	21.39	22.56	23.14	24.67	25.85	25.21	26.38	26.95
	12H	20.92	22.05	21.46	22.57	23.17	25.22	26.35	25.77	26.87	27.48
4H	2H	19.01	20.32	19.52	20.82	21.37	20.23	21.55	20.74	22.04	22.59
	3H	20.89	22.01	21.42	22.55	23.12	22.76	23.89	23.29	24.42	24.99
	4H	21.60	22.63	22.15	23.17	23.78	23.99	25.02	24.53	25.56	26.17
	6H	22.12	23.02	22.68	23.60	24.22	25.21	26.12	25.78	26.69	27.31
	8H	22.28	23.13	22.85	23.70	24.33	25.82	26.67	26.39	27.24	27.87
	12H	22.38	23.15	22.97	23.75	24.39	26.48	27.25	27.07	27.85	28.49
8H	4H	22.19	23.04	22.75	23.61	24.24	24.24	25.09	24.81	25.67	26.30
	6H	22.88	23.60	23.48	24.21	24.85	25.63	26.35	26.23	26.96	27.60
	8H	23.13	23.78	23.74	24.40	25.05	26.37	27.01	26.98	27.64	28.29
	12H	23.32	23.90	23.93	24.51	25.22	27.19	27.77	27.81	28.38	29.10
12H	4H	22.32	23.09	22.91	23.69	24.33	24.26	25.03	24.85	25.63	26.27
	6H	23.09	23.74	23.70	24.36	25.01	25.68	26.33	26.29	26.95	27.60
	8H	23.43	24.01	24.04	24.62	25.33	26.48	27.06	27.10	27.67	28.39