

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: P243540

Luminaire Tested: S124DRP-H1020D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243540
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-H1020D840-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

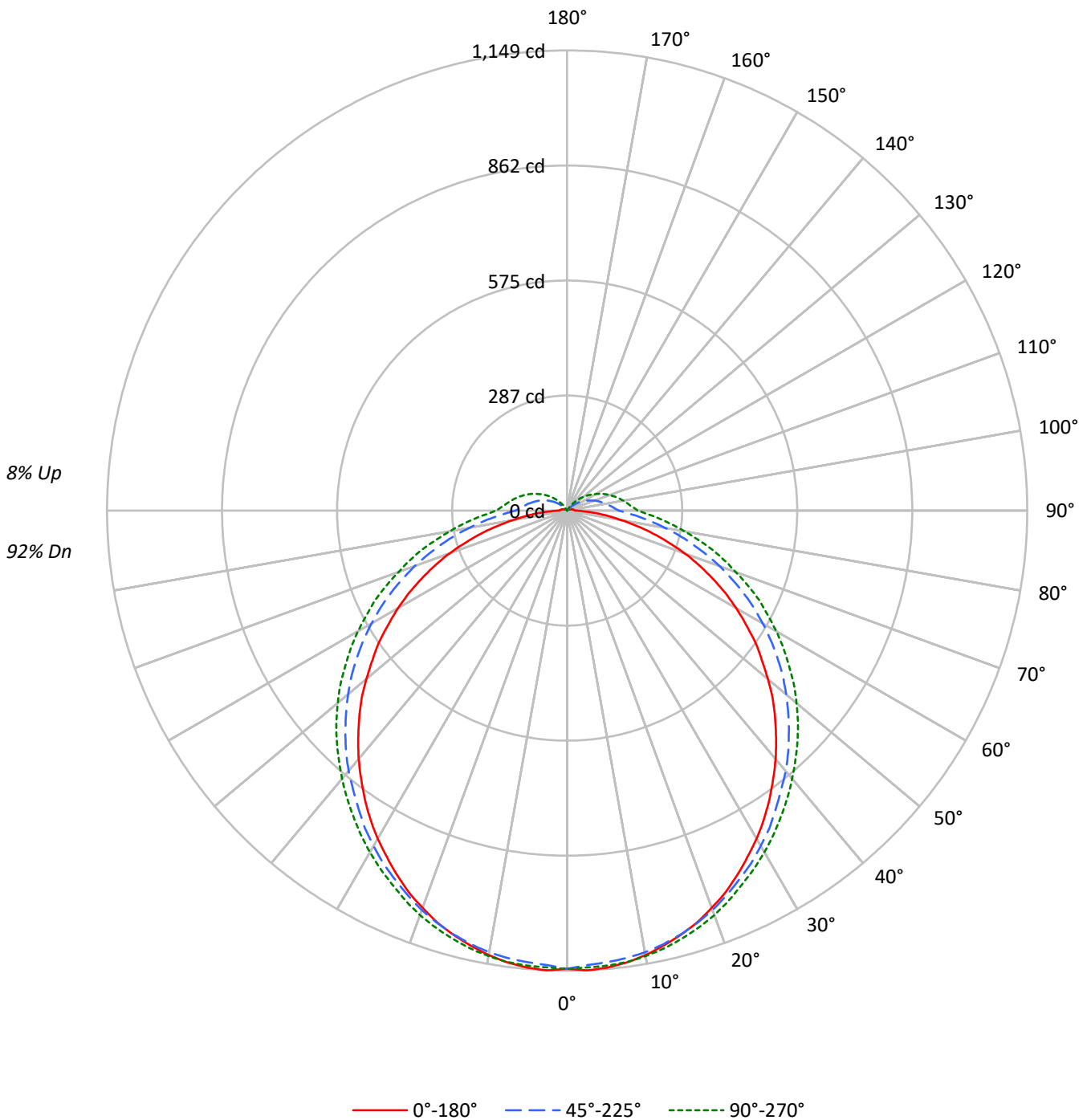
Lumens per Lamp: N/A
Luminaire Lumens: 3911.3 lumens
Efficiency: N/A
Efficacy: 124.2 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 31.5
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

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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°	10171	10171	10171
5°	10202	9925	9945
10°	10136	9758	9738
15°	10035	9560	9504
20°	9907	9348	9268
25°	9753	9105	8994
30°	9591	8878	8760
35°	9412	8626	8517
40°	9230	8411	8290
45°	9039	8178	8074
50°	8821	7942	7847
55°	8629	7692	7588
60°	8357	7414	7334
65°	8044	7102	7079
70°	7669	6746	6712
75°	7074	6311	6446
80°	6269	5892	6070
85°	5673	5551	5853

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9039 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.3	2.8
10°-20°	310.6	7.9
20°-30°	470.2	12.0
30°-40°	569.3	14.6
40°-50°	602.2	15.4
50°-60°	567.3	14.5
60°-70°	471.4	12.1
70°-80°	331.3	8.5
80°-90°	186.6	4.8
90°-100°	110.8	2.8
100°-110°	82.0	2.1
110°-120°	54.7	1.4
120°-130°	30.9	0.8
130°-140°	13.2	0.3
140°-150°	2.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	889.1	22.7
0°-40°	1458.5	37.3
0°-60°	2627.9	67.2
0°-90°	3617.3	92.5
90°-120°	247.4	6.3
90°-150°	294.0	7.5
90°-180°	294.0	7.5
0°-180°	3911.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1144	1144	1144	1144	1144	
5°	1146	1141	1132	1142	1141	109
15°	1097	1099	1096	1108	1106	309
25°	1004	1013	1017	1031	1031	463
35°	880	895	908	928	931	551
45°	734	758	783	806	814	567
55°	574	604	641	669	676	511
65°	400	440	485	516	529	396
75°	222	270	324	360	374	236
85°	69	123	181	220	232	71
90°	21	72	129	164	176	14
95°	17	58	112	147	157	13
105°	12	38	85	117	128	13
115°	8	20	60	88	98	8
125°	5	4	35	60	68	5
135°	2	2	11	32	39	2
145°	1	0	0	7	12	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°	1144.2	1144.2	1144.2	1144.2	1144.2
2.5°	1149.1	1145.5	1135.7	1143.0	1141.8
5°	1145.5	1140.6	1132.1	1141.8	1140.6
7.5°	1138.2	1134.5	1127.2	1138.2	1136.9
10°	1127.2	1124.8	1119.9	1129.6	1129.6
12.5°	1112.6	1112.6	1109.0	1119.9	1119.9
15°	1096.8	1099.2	1095.6	1107.8	1106.5
17.5°	1078.6	1081.0	1079.8	1091.9	1091.9
20°	1055.5	1059.1	1061.5	1074.9	1074.9
22.5°	1032.4	1037.2	1039.7	1054.3	1054.3
25°	1004.4	1012.9	1016.6	1031.1	1031.1
27.5°	975.2	986.2	993.5	1006.8	1009.3
30°	946.0	958.2	966.7	981.3	984.9
32.5°	914.4	926.6	940.0	954.5	959.4
35°	880.4	895.0	908.3	927.8	931.4
37.5°	845.1	862.1	877.9	898.6	903.5
40°	809.8	830.5	848.8	868.2	874.3
42.5°	772.1	792.8	817.1	837.8	843.9
45°	734.5	757.6	783.1	806.2	813.5
47.5°	696.8	721.1	749.0	773.4	781.9
50°	654.2	680.9	713.8	738.1	747.8
52.5°	612.9	642.0	678.5	702.8	713.8
55°	573.9	604.3	640.8	668.8	676.1
57.5°	529.0	563.0	603.1	633.5	640.8
60°	487.6	521.7	564.2	594.6	603.1
62.5°	445.0	481.5	525.3	555.7	564.2
65°	400.1	440.2	485.2	515.6	529.0
67.5°	356.3	396.4	443.8	477.9	488.8
70°	312.5	353.8	404.9	439.0	447.5
72.5°	266.3	311.3	363.6	398.8	411.0
75°	222.5	269.9	323.5	359.9	374.5
77.5°	180.0	229.8	285.8	323.5	333.2
80°	137.4	192.1	248.1	285.8	297.9
82.5°	103.4	154.4	212.8	252.9	262.7
85°	69.3	122.8	181.2	220.1	232.3
87.5°	41.3	96.1	152.0	188.5	200.6
90°	20.7	71.7	128.9	164.2	176.3
92.5°	18.2	64.4	119.2	154.4	166.6
95°	17.0	58.4	111.9	147.1	156.9
97.5°	15.8	53.5	104.6	138.6	149.6
100°	14.6	47.4	98.5	131.3	142.3
102.5°	13.4	42.6	91.2	124.0	135.0
105°	12.2	37.7	85.1	116.7	127.7
107.5°	10.9	32.8	79.0	109.4	120.4
110°	9.7	28.0	73.0	102.1	113.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.5	24.3	65.7	94.8	105.8
115°	8.5	19.5	59.6	87.6	98.5
117.5°	7.3	14.6	53.5	80.3	90.0
120°	7.3	10.9	47.4	73.0	82.7
122.5°	6.1	7.3	41.3	66.9	75.4
125°	4.9	3.6	35.3	59.6	68.1
127.5°	4.9	3.6	29.2	52.3	60.8
130°	3.6	3.6	23.1	45.0	53.5
132.5°	3.6	2.4	17.0	38.9	46.2
135°	2.4	2.4	10.9	31.6	38.9
137.5°	2.4	1.2	7.3	25.5	32.8
140°	2.4	1.2	2.4	19.5	25.5
142.5°	1.2	1.2	0.0	13.4	18.2
145°	1.2	0.0	0.0	7.3	12.2
147.5°	1.2	0.0	0.0	1.2	6.1
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	17.85	19.37	18.33	19.84	20.34	19.43	20.96	19.91	21.42	21.92
	3H	19.50	20.89	19.99	21.36	21.90	21.74	23.13	22.23	23.61	24.14
	4H	20.07	21.39	20.58	21.88	22.43	22.81	24.13	23.32	24.62	25.17
	6H	20.45	21.68	20.98	22.18	22.75	23.86	25.08	24.38	25.59	26.16
	8H	20.56	21.73	21.09	22.26	22.84	24.37	25.55	24.91	26.08	26.65
	12H	20.62	21.75	21.16	22.27	22.87	24.92	26.05	25.47	26.57	27.18
4H	2H	18.71	20.02	19.22	20.52	21.07	19.93	21.25	20.44	21.74	22.29
	3H	20.59	21.71	21.12	22.25	22.82	22.46	23.58	22.99	24.12	24.69
	4H	21.30	22.33	21.85	22.87	23.48	23.69	24.72	24.23	25.26	25.87
	6H	21.82	22.72	22.38	23.30	23.92	24.91	25.82	25.48	26.39	27.01
	8H	21.98	22.83	22.55	23.40	24.03	25.52	26.37	26.09	26.94	27.57
	12H	22.08	22.85	22.67	23.45	24.09	26.18	26.95	26.77	27.55	28.19
8H	4H	21.89	22.73	22.45	23.31	23.94	23.94	24.79	24.51	25.36	26.00
	6H	22.58	23.30	23.18	23.91	24.55	25.33	26.05	25.93	26.66	27.30
	8H	22.83	23.48	23.44	24.10	24.75	26.07	26.71	26.68	27.34	27.99
	12H	23.02	23.60	23.63	24.21	24.92	26.89	27.47	27.51	28.08	28.80
12H	4H	22.02	22.79	22.61	23.39	24.03	23.96	24.73	24.55	25.33	25.97
	6H	22.79	23.44	23.40	24.06	24.71	25.38	26.03	25.99	26.65	27.30
	8H	23.13	23.71	23.74	24.32	25.03	26.18	26.76	26.80	27.37	28.09