

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: P243550

Luminaire Tested: S124DRP-H1020D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243550
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-H1020D935-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

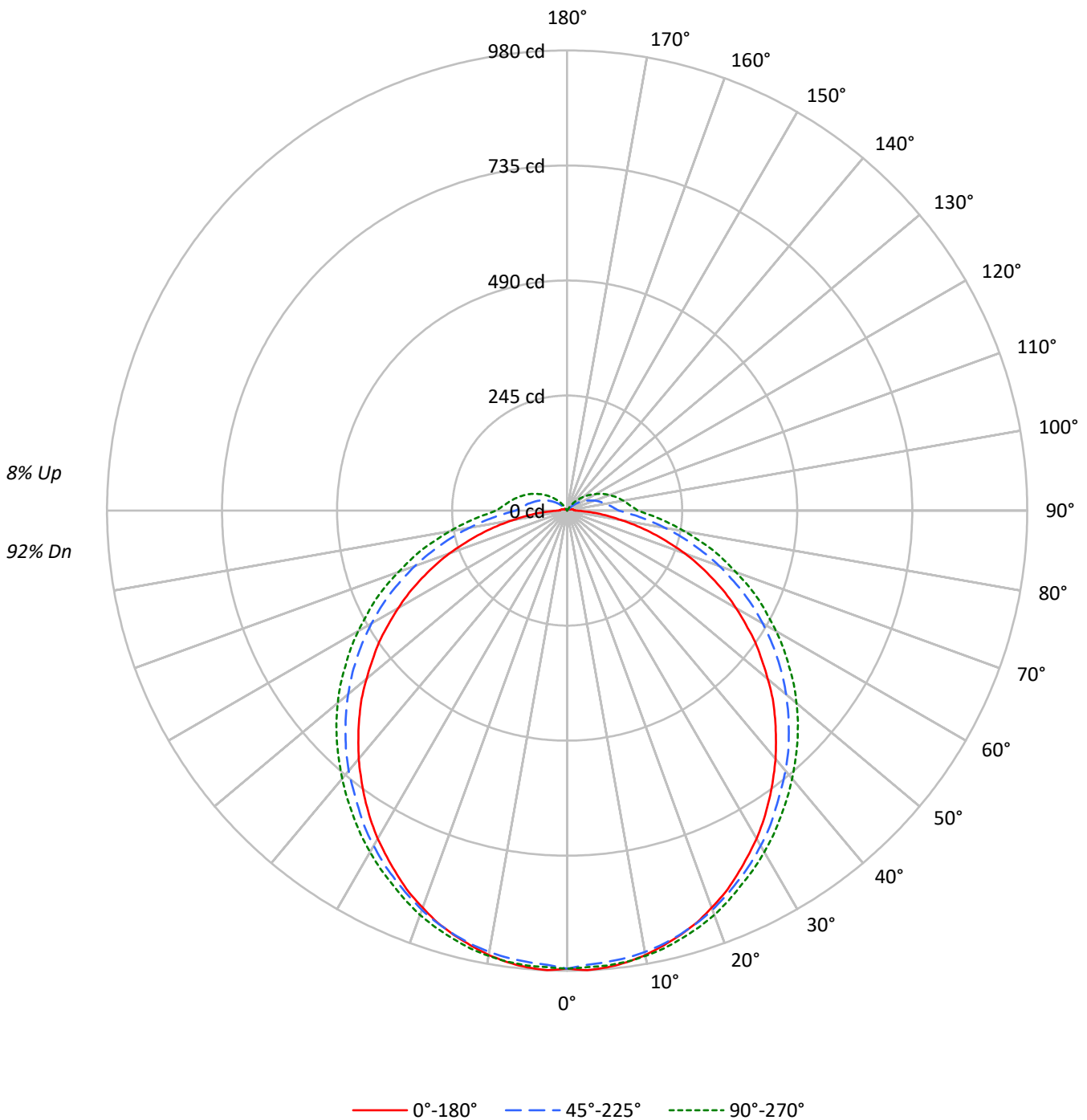
Lumens per Lamp: N/A
Luminaire Lumens: 3334.7 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

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	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°	8672	8672	8672
5°	8698	8462	8480
10°	8641	8319	8303
15°	8556	8151	8103
20°	8446	7971	7903
25°	8315	7763	7669
30°	8177	7569	7470
35°	8024	7354	7261
40°	7870	7170	7068
45°	7706	6973	6884
50°	7521	6772	6691
55°	7357	6559	6469
60°	7125	6320	6253
65°	6858	6055	6035
70°	6537	5752	5722
75°	6031	5381	5496
80°	5347	5023	5175
85°	4838	4733	4989

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7706 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.4	2.8
10°-20°	264.8	7.9
20°-30°	400.8	12.0
30°-40°	485.4	14.6
40°-50°	513.4	15.4
50°-60°	483.7	14.5
60°-70°	401.9	12.1
70°-80°	282.5	8.5
80°-90°	159.1	4.8
90°-100°	94.4	2.8
100°-110°	69.9	2.1
110°-120°	46.6	1.4
120°-130°	26.3	0.8
130°-140°	11.3	0.3
140°-150°	2.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	758.1	22.7
0°-40°	1243.5	37.3
0°-60°	2240.5	67.2
0°-90°	3084.0	92.5
90°-120°	211.0	6.3
90°-150°	250.7	7.5
90°-180°	251.0	7.5
0°-180°	3334.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	976	976	976	976	976	
5°	977	972	965	974	972	93
15°	935	937	934	944	943	264
25°	856	864	867	879	879	395
35°	751	763	774	791	794	470
45°	626	646	668	687	694	483
55°	489	515	546	570	576	436
65°	341	375	414	440	451	338
75°	190	230	276	307	319	201
85°	59	105	154	188	198	61
90°	18	61	110	140	150	12
95°	14	50	95	125	134	11
105°	10	32	73	100	109	11
115°	7	17	51	75	84	7
125°	4	3	30	51	58	4
135°	2	2	9	27	33	2
145°	1	0	0	6	10	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°	975.6	975.6	975.6	975.6	975.6
2.5°	979.7	976.6	968.3	974.5	973.5
5°	976.6	972.5	965.2	973.5	972.5
7.5°	970.4	967.3	961.0	970.4	969.3
10°	961.0	959.0	954.8	963.1	963.1
12.5°	948.6	948.6	945.5	954.8	954.8
15°	935.1	937.2	934.1	944.5	943.4
17.5°	919.6	921.7	920.6	931.0	931.0
20°	899.9	903.0	905.1	916.5	916.5
22.5°	880.2	884.3	886.4	898.8	898.8
25°	856.3	863.6	866.7	879.1	879.1
27.5°	831.5	840.8	847.0	858.4	860.5
30°	806.6	816.9	824.2	836.6	839.8
32.5°	779.6	790.0	801.4	813.8	818.0
35°	750.6	763.0	774.4	791.0	794.1
37.5°	720.5	735.0	748.5	766.1	770.3
40°	690.5	708.1	723.6	740.2	745.4
42.5°	658.3	675.9	696.7	714.3	719.5
45°	626.2	645.9	667.7	687.4	693.6
47.5°	594.0	614.8	638.6	659.4	666.6
50°	557.8	580.6	608.6	629.3	637.6
52.5°	522.5	547.4	578.5	599.2	608.6
55°	489.3	515.3	546.4	570.2	576.4
57.5°	451.0	480.0	514.2	540.1	546.4
60°	415.7	444.8	481.0	507.0	514.2
62.5°	379.4	410.5	447.9	473.8	481.0
65°	341.1	375.3	413.7	439.6	451.0
67.5°	303.8	338.0	378.4	407.4	416.8
70°	266.4	301.7	345.2	374.3	381.5
72.5°	227.0	265.4	310.0	340.0	350.4
75°	189.7	230.2	275.8	306.9	319.3
77.5°	153.4	195.9	243.6	275.8	284.1
80°	117.2	163.8	211.5	243.6	254.0
82.5°	88.1	131.7	181.4	215.6	223.9
85°	59.1	104.7	154.5	187.6	198.0
87.5°	35.2	81.9	129.6	160.7	171.1
90°	17.6	61.2	109.9	140.0	150.3
92.5°	15.6	54.9	101.6	131.7	142.0
95°	14.5	49.8	95.4	125.4	133.7
97.5°	13.5	45.6	89.2	118.2	127.5
100°	12.4	40.4	84.0	112.0	121.3
102.5°	11.4	36.3	77.8	105.7	115.1
105°	10.4	32.1	72.6	99.5	108.9
107.5°	9.3	28.0	67.4	93.3	102.6
110°	8.3	23.8	62.2	87.1	96.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.3	20.7	56.0	80.9	90.2
115°	7.3	16.6	50.8	74.6	84.0
117.5°	6.2	12.4	45.6	68.4	76.7
120°	6.2	9.3	40.4	62.2	70.5
122.5°	5.2	6.2	35.2	57.0	64.3
125°	4.1	3.1	30.1	50.8	58.1
127.5°	4.1	3.1	24.9	44.6	51.8
130°	3.1	3.1	19.7	38.4	45.6
132.5°	3.1	2.1	14.5	33.2	39.4
135°	2.1	2.1	9.3	27.0	33.2
137.5°	2.1	1.0	6.2	21.8	28.0
140°	2.1	1.0	2.1	16.6	21.8
142.5°	1.0	1.0	0.0	11.4	15.6
145°	1.0	0.0	0.0	6.2	10.4
147.5°	1.0	0.0	0.0	1.0	5.2
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	17.29	18.82	17.77	19.29	19.78	18.87	20.40	19.35	20.87	21.36
	3H	18.94	20.33	19.43	20.81	21.35	21.19	22.58	21.68	23.05	23.59
	4H	19.51	20.83	20.02	21.33	21.88	22.26	23.57	22.77	24.07	24.62
	6H	19.90	21.12	20.42	21.63	22.20	23.30	24.53	23.83	25.04	25.60
	8H	20.00	21.18	20.54	21.71	22.28	23.82	24.99	24.35	25.52	26.09
	12H	20.07	21.19	20.61	21.72	22.32	24.37	25.50	24.91	26.02	26.62
4H	2H	18.15	19.47	18.66	19.96	20.51	19.38	20.69	19.89	21.19	21.74
	3H	20.04	21.16	20.56	21.70	22.27	21.91	23.03	22.43	23.57	24.14
	4H	20.75	21.78	21.29	22.32	22.93	23.14	24.16	23.68	24.71	25.31
	6H	21.27	22.17	21.83	22.74	23.36	24.36	25.26	24.92	25.83	26.45
	8H	21.42	22.27	21.99	22.84	23.48	24.97	25.82	25.54	26.39	27.02
	12H	21.53	22.30	22.12	22.90	23.53	25.63	26.40	26.22	27.00	27.64
8H	4H	21.33	22.18	21.90	22.75	23.38	23.39	24.24	23.96	24.81	25.44
	6H	22.02	22.74	22.63	23.36	23.99	24.77	25.49	25.38	26.11	26.74
	8H	22.28	22.92	22.89	23.55	24.20	25.51	26.16	26.13	26.78	27.43
	12H	22.46	23.04	23.08	23.65	24.37	26.34	26.92	26.95	27.53	28.24
12H	4H	21.47	22.24	22.06	22.84	23.47	23.41	24.18	24.00	24.78	25.41
	6H	22.24	22.89	22.85	23.51	24.16	24.82	25.47	25.44	26.10	26.75
	8H	22.57	23.15	23.19	23.76	24.48	25.63	26.21	26.24	26.82	27.54