

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: P243531

Luminaire Tested: S124DRP-H1020D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243531
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-H1020D830-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

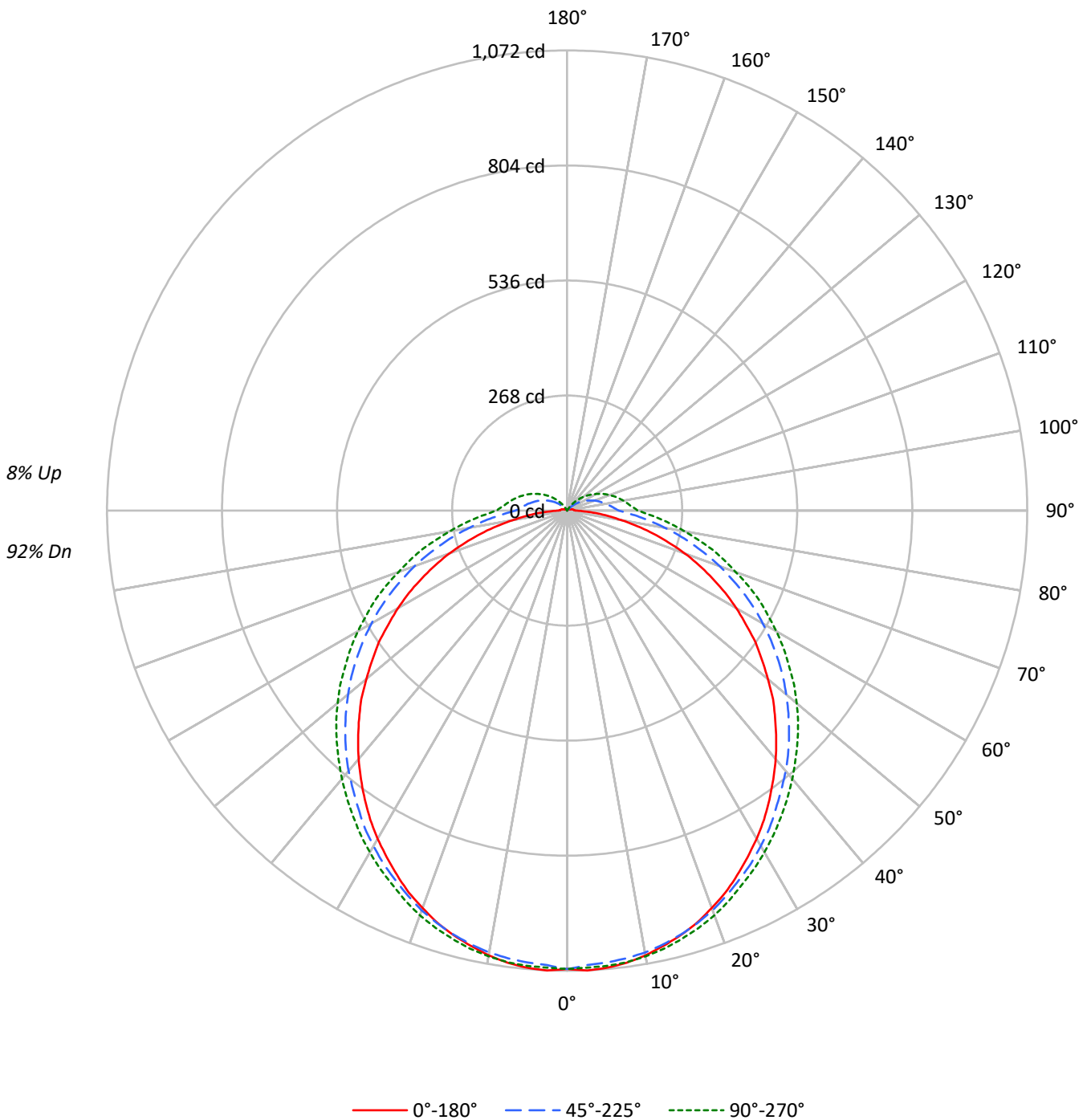
Lumens per Lamp: N/A
Luminaire Lumens: 3650.6 lumens
Efficiency: N/A
Efficacy: 115.9 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

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	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°	9493	9493	9493
5°	9522	9263	9283
10°	9460	9108	9089
15°	9367	8923	8871
20°	9246	8725	8651
25°	9103	8498	8395
30°	8952	8286	8177
35°	8784	8051	7949
40°	8616	7850	7737
45°	8436	7633	7536
50°	8233	7413	7325
55°	8055	7180	7082
60°	7800	6920	6845
65°	7507	6628	6606
70°	7158	6296	6264
75°	6603	5890	6018
80°	5849	5497	5666
85°	5297	5181	5462

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8436 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.1	2.8
10°-20°	289.9	7.9
20°-30°	438.8	12.0
30°-40°	531.4	14.6
40°-50°	562.0	15.4
50°-60°	529.5	14.5
60°-70°	440.0	12.1
70°-80°	309.3	8.5
80°-90°	174.2	4.8
90°-100°	103.4	2.8
100°-110°	76.5	2.1
110°-120°	51.0	1.4
120°-130°	28.8	0.8
130°-140°	12.3	0.3
140°-150°	2.4	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	829.9	22.7
0°-40°	1361.2	37.3
0°-60°	2452.8	67.2
0°-90°	3376.2	92.5
90°-120°	230.9	6.3
90°-150°	274.4	7.5
90°-180°	274.0	7.5
0°-180°	3650.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1068	1068	1068	1068	1068	
5°	1069	1065	1057	1066	1065	101
15°	1024	1026	1023	1034	1033	289
25°	937	945	949	962	962	432
35°	822	835	848	866	869	514
45°	686	707	731	752	759	529
55°	536	564	598	624	631	477
65°	373	411	453	481	494	370
75°	208	252	302	336	350	220
85°	65	115	169	205	217	67
90°	19	67	120	153	165	13
95°	16	54	104	137	146	13
105°	11	35	79	109	119	12
115°	8	18	56	82	92	8
125°	4	3	33	56	64	4
135°	2	2	10	30	36	2
145°	1	0	0	7	11	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°	1068.0	1068.0	1068.0	1068.0	1068.0
2.5°	1072.5	1069.1	1060.0	1066.8	1065.7
5°	1069.1	1064.6	1056.6	1065.7	1064.6
7.5°	1062.3	1058.9	1052.1	1062.3	1061.1
10°	1052.1	1049.8	1045.3	1054.3	1054.3
12.5°	1038.4	1038.4	1035.0	1045.3	1045.3
15°	1023.7	1026.0	1022.6	1033.9	1032.8
17.5°	1006.7	1008.9	1007.8	1019.2	1019.2
20°	985.1	988.5	990.8	1003.3	1003.3
22.5°	963.5	968.1	970.4	984.0	984.0
25°	937.4	945.4	948.8	962.4	962.4
27.5°	910.2	920.4	927.2	939.7	942.0
30°	883.0	894.3	902.3	915.9	919.3
32.5°	853.5	864.8	877.3	890.9	895.4
35°	821.7	835.3	847.8	865.9	869.3
37.5°	788.8	804.7	819.4	838.7	843.2
40°	755.9	775.1	792.2	810.3	816.0
42.5°	720.7	740.0	762.7	782.0	787.6
45°	685.5	707.1	730.9	752.4	759.3
47.5°	650.3	673.0	699.1	721.8	729.8
50°	610.6	635.6	666.2	688.9	698.0
52.5°	572.0	599.2	633.3	656.0	666.2
55°	535.7	564.1	598.1	624.2	631.0
57.5°	493.7	525.5	562.9	591.3	598.1
60°	455.1	486.9	526.6	555.0	562.9
62.5°	415.4	449.4	490.3	518.7	526.6
65°	373.4	410.8	452.8	481.2	493.7
67.5°	332.5	370.0	414.2	446.0	456.2
70°	291.7	330.3	377.9	409.7	417.6
72.5°	248.5	290.5	339.3	372.3	383.6
75°	207.7	252.0	301.9	335.9	349.6
77.5°	168.0	214.5	266.7	301.9	311.0
80°	128.2	179.3	231.5	266.7	278.1
82.5°	96.5	144.1	198.6	236.1	245.1
85°	64.7	114.6	169.1	205.4	216.8
87.5°	38.6	89.7	141.9	175.9	187.3
90°	19.3	67.0	120.3	153.2	164.6
92.5°	17.0	60.2	111.2	144.1	155.5
95°	15.9	54.5	104.4	137.3	146.4
97.5°	14.8	49.9	97.6	129.4	139.6
100°	13.6	44.3	91.9	122.6	132.8
102.5°	12.5	39.7	85.1	115.8	126.0
105°	11.3	35.2	79.4	109.0	119.2
107.5°	10.2	30.6	73.8	102.1	112.4
110°	9.1	26.1	68.1	95.3	105.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	7.9	22.7	61.3	88.5	98.7
115°	7.9	18.2	55.6	81.7	91.9
117.5°	6.8	13.6	49.9	74.9	84.0
120°	6.8	10.2	44.3	68.1	77.2
122.5°	5.7	6.8	38.6	62.4	70.4
125°	4.5	3.4	32.9	55.6	63.6
127.5°	4.5	3.4	27.2	48.8	56.7
130°	3.4	3.4	21.6	42.0	49.9
132.5°	3.4	2.3	15.9	36.3	43.1
135°	2.3	2.3	10.2	29.5	36.3
137.5°	2.3	1.1	6.8	23.8	30.6
140°	2.3	1.1	2.3	18.2	23.8
142.5°	1.1	1.1	0.0	12.5	17.0
145°	1.1	0.0	0.0	6.8	11.3
147.5°	1.1	0.0	0.0	1.1	5.7
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	17.61	19.13	18.09	19.60	20.10	19.19	20.72	19.67	21.18	21.68
	3H	19.26	20.65	19.75	21.12	21.66	21.50	22.89	21.99	23.37	23.90
	4H	19.83	21.15	20.34	21.64	22.19	22.57	23.89	23.08	24.38	24.93
	6H	20.21	21.44	20.74	21.94	22.51	23.62	24.84	24.14	25.35	25.92
	8H	20.32	21.49	20.85	22.02	22.60	24.13	25.31	24.67	25.84	26.41
	12H	20.38	21.51	20.92	22.03	22.64	24.68	25.81	25.23	26.33	26.94
4H	2H	18.47	19.78	18.98	20.28	20.83	19.69	21.01	20.20	21.50	22.05
	3H	20.35	21.47	20.88	22.01	22.58	22.22	23.35	22.75	23.88	24.45
	4H	21.06	22.09	21.61	22.64	23.24	23.45	24.48	23.99	25.02	25.63
	6H	21.58	22.48	22.14	23.06	23.68	24.67	25.58	25.24	26.15	26.77
	8H	21.74	22.59	22.31	23.16	23.79	25.28	26.13	25.85	26.70	27.33
	12H	21.84	22.61	22.43	23.21	23.85	25.94	26.71	26.53	27.31	27.95
8H	4H	21.65	22.50	22.21	23.07	23.70	23.70	24.55	24.27	25.13	25.76
	6H	22.34	23.06	22.94	23.67	24.31	25.09	25.81	25.69	26.42	27.06
	8H	22.59	23.24	23.20	23.86	24.51	25.83	26.47	26.44	27.10	27.75
	12H	22.78	23.36	23.39	23.97	24.68	26.65	27.23	27.27	27.84	28.56
12H	4H	21.78	22.55	22.37	23.15	23.79	23.72	24.49	24.31	25.09	25.73
	6H	22.55	23.20	23.16	23.82	24.47	25.14	25.79	25.75	26.41	27.06
	8H	22.89	23.47	23.50	24.08	24.79	25.94	26.52	26.56	27.13	27.85