

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P912034

Luminaire Tested: DFN2DIP-SQ3F0-100D090US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912034
REPORT IS A COMBINATION OF REPORTS P899964 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D090US850-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

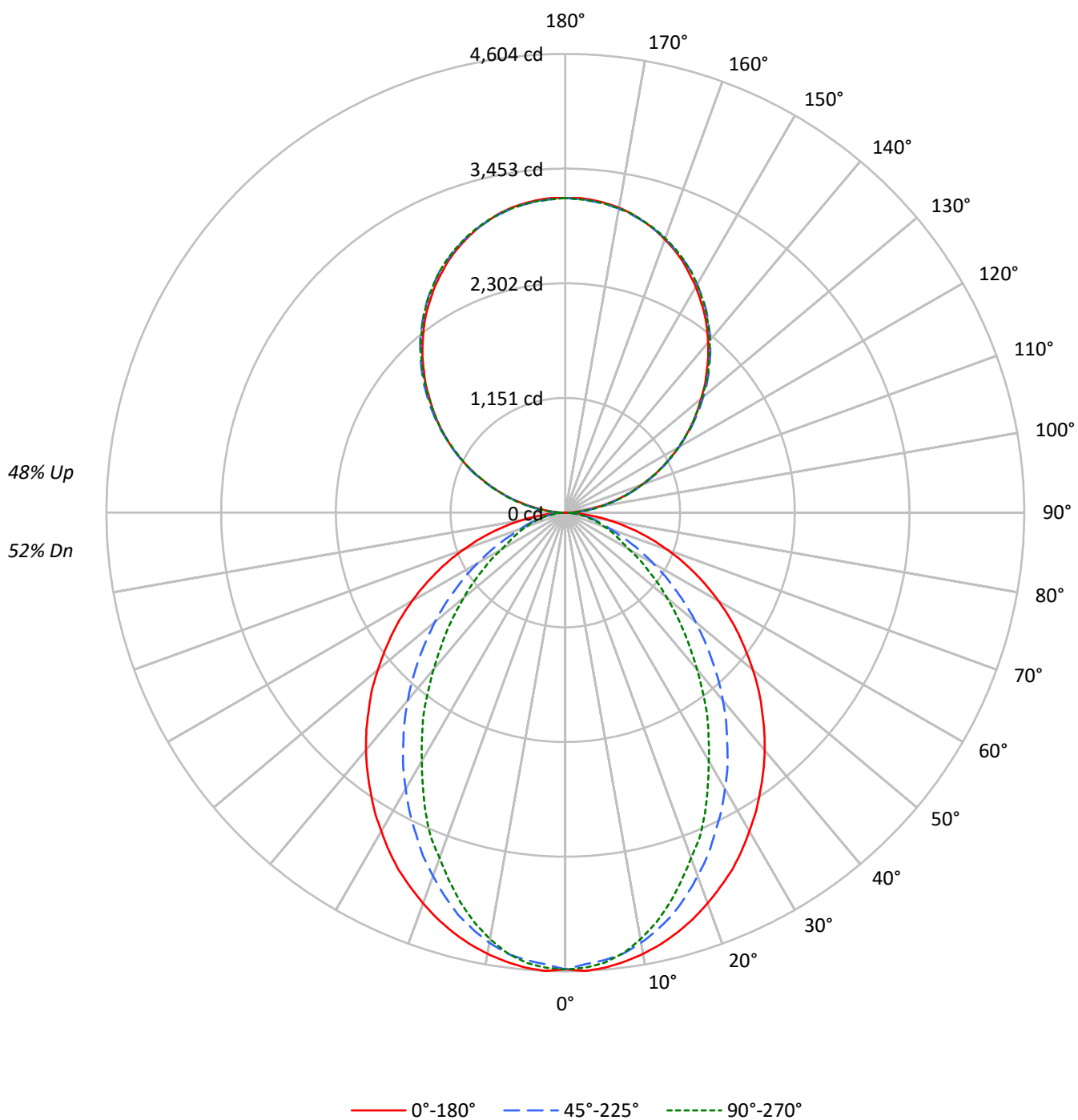
Lumens per Lamp: N/A
Luminaire Lumens: 18259.7 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 167
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58
1	99	94	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43
3	83	73	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	34	32
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28
6	64	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23
8	56	43	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5252	5252	5252
5°	5257	5165	5200
10°	5201	5060	5029
15°	5127	4889	4766
20°	5028	4656	4443
25°	4928	4394	4132
30°	4794	4127	3738
35°	4663	3839	3392
40°	4529	3542	2995
45°	4374	3213	2636
50°	4214	2881	2285
55°	4045	2526	1948
60°	3851	2156	1602
65°	3627	1780	1440
70°	3354	1430	1301
75°	3012	1253	1179
80°	2516	1041	1017
85°	1706	677	754

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 4374 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	429.6	2.4
10°-20°	1179.3	6.5
20°-30°	1655.6	9.1
30°-40°	1804.7	9.9
40°-50°	1658.8	9.1
50°-60°	1302.7	7.1
60°-70°	847.9	4.6
70°-80°	436.5	2.4
80°-90°	120.4	0.7
90°-100°	195.3	1.1
100°-110°	620.6	3.4
110°-120°	1062.1	5.8
120°-130°	1396.8	7.6
130°-140°	1567.9	8.6
140°-150°	1537.5	8.4
150°-160°	1289.7	7.1
160°-170°	855.3	4.7
170°-180°	299.0	1.6
0°-30°	3264.5	17.9
0°-40°	5069.2	27.8
0°-60°	8030.6	44.0
0°-90°	9435.4	51.7
90°-120°	1878.1	10.3
90°-150°	6380.2	34.9
90°-180°	8824.0	48.3
0°-180°	18259.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4584	4584	4584	4584	4584	
5°	4584	4563	4509	4546	4534	435
15°	4360	4314	4173	4094	4053	1228
25°	3957	3824	3551	3381	3318	1820
35°	3410	3198	2833	2572	2480	2134
45°	2788	2509	2074	1779	1680	2153
55°	2119	1796	1348	1099	1020	1894
65°	1431	1095	722	581	568	1419
75°	763	473	332	303	299	807
85°	178	91	79	79	79	205
90°	3	34	93	88	90	18
95°	139	166	170	170	166	155
105°	573	580	586	591	591	605
115°	1066	1081	1076	1074	1066	1054
125°	1550	1574	1566	1558	1555	1385
135°	2005	2035	2040	2038	2030	1550
145°	2434	2453	2468	2471	2461	1521
155°	2784	2791	2800	2813	2805	1281
165°	3028	3025	3025	3044	3031	854
175°	3151	3143	3138	3157	3140	299
180°	3157	3157	3157	3157	3157	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4583.5	4583.5	4583.5	4583.5	4583.5
2.5°	4604.1	4583.5	4537.7	4579.5	4571.2
5°	4583.5	4562.8	4508.6	4546.1	4533.7
7.5°	4546.1	4521.4	4463.3	4479.6	4459.0
10°	4496.3	4467.3	4384.5	4371.8	4347.2
12.5°	4434.3	4396.9	4284.6	4260.0	4214.2
15°	4359.5	4313.7	4172.8	4094.1	4052.7
17.5°	4272.3	4205.9	4031.7	3940.5	3874.1
20°	4172.8	4089.7	3882.4	3779.0	3687.4
22.5°	4065.0	3969.6	3728.8	3588.1	3526.0
25°	3957.2	3824.4	3550.6	3380.7	3318.2
27.5°	3828.7	3687.4	3384.7	3189.7	3094.2
30°	3691.9	3533.8	3202.0	2990.9	2878.6
32.5°	3559.0	3367.9	3028.2	2779.2	2675.2
35°	3409.7	3198.1	2833.3	2571.9	2480.3
37.5°	3264.6	3036.1	2650.6	2364.2	2260.7
40°	3111.0	2862.3	2459.7	2165.2	2057.4
42.5°	2953.4	2688.0	2269.1	1961.9	1858.5
45°	2787.5	2509.3	2074.2	1779.3	1679.8
47.5°	2630.0	2335.6	1887.5	1592.6	1501.6
50°	2455.7	2161.2	1704.9	1418.4	1331.7
52.5°	2285.3	1974.2	1530.6	1256.8	1178.1
55°	2119.4	1796.0	1348.0	1099.4	1020.5
57.5°	1949.6	1617.7	1186.5	954.1	887.6
60°	1775.3	1443.5	1016.2	804.9	738.5
62.5°	1605.4	1273.6	870.9	672.1	639.0
65°	1431.2	1094.9	721.7	580.9	568.1
67.5°	1265.3	929.0	580.9	510.0	497.7
70°	1090.9	767.5	481.0	439.6	423.0
72.5°	925.0	617.8	402.2	369.2	360.9
75°	763.1	472.7	331.8	302.8	298.8
77.5°	601.6	335.8	261.4	244.6	236.3
80°	451.9	240.8	199.0	182.7	182.7
82.5°	315.1	161.9	136.9	128.5	128.5
85°	178.2	91.0	78.7	78.7	78.7
87.5°	66.4	33.0	33.0	29.1	29.1
90°	2.9	34.3	93.3	87.5	90.4
92.5°	59.0	80.0	82.8	85.6	85.6
95°	139.0	165.6	170.3	170.3	165.6
97.5°	231.2	256.0	266.5	266.5	266.5
100°	337.8	359.8	367.3	367.3	364.5
102.5°	450.1	466.3	476.8	479.6	476.8
105°	572.9	580.5	586.2	591.0	591.0
107.5°	694.7	706.1	706.1	708.0	694.7
110°	812.7	828.0	828.0	828.0	820.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	940.2	956.4	953.5	946.0	940.2
115°	1065.9	1081.1	1076.3	1073.5	1065.9
117.5°	1190.5	1211.5	1198.2	1190.5	1182.9
120°	1316.2	1337.0	1316.2	1316.2	1307.5
122.5°	1430.3	1457.0	1443.7	1436.0	1430.3
125°	1550.3	1574.0	1566.5	1557.8	1555.0
127.5°	1667.3	1696.8	1686.3	1674.9	1667.3
130°	1776.7	1811.0	1806.2	1800.5	1790.0
132.5°	1899.5	1926.1	1928.0	1914.7	1907.1
135°	2005.1	2034.6	2040.3	2037.5	2029.9
137.5°	2123.1	2146.9	2151.7	2149.8	2138.4
140°	2226.9	2250.6	2263.9	2263.9	2253.5
142.5°	2333.4	2357.2	2364.8	2367.7	2357.2
145°	2434.4	2453.3	2468.5	2471.4	2461.0
147.5°	2524.7	2548.5	2559.9	2564.7	2554.2
150°	2618.0	2634.2	2644.6	2653.2	2644.6
152.5°	2700.7	2716.9	2730.2	2740.8	2730.2
155°	2783.6	2791.1	2799.8	2813.1	2804.6
157.5°	2854.9	2860.7	2865.4	2884.4	2871.1
160°	2918.7	2924.4	2927.3	2943.4	2932.0
162.5°	2977.7	2977.7	2980.5	2998.6	2985.3
165°	3028.1	3025.2	3025.2	3044.3	3031.0
167.5°	3073.8	3065.3	3065.3	3084.2	3070.9
170°	3108.1	3100.4	3097.7	3116.6	3100.4
172.5°	3131.8	3124.3	3121.4	3140.5	3124.3
175°	3150.9	3143.2	3137.6	3156.7	3140.5
177.5°	3161.3	3153.8	3148.0	3164.2	3148.0
180°	3156.7	3156.7	3156.7	3156.7	3156.7

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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	13.03	13.87	13.98	14.83	16.08	8.99	9.83	9.94	10.79	12.04
	3H	14.70	15.46	15.66	16.43	17.70	10.17	10.93	11.13	11.90	13.17
	4H	15.31	16.02	16.28	17.00	18.28	10.62	11.33	11.59	12.31	13.59
	6H	15.73	16.38	16.71	17.36	18.66	10.94	11.59	11.92	12.57	13.87
	8H	15.85	16.48	16.85	17.47	18.76	11.02	11.65	12.02	12.64	13.93
	12H	15.91	16.51	16.91	17.50	18.81	11.06	11.66	12.06	12.65	13.96
4H	2H	13.05	13.76	14.03	14.73	16.02	9.58	10.30	10.57	11.27	12.55
	3H	14.87	15.47	15.86	16.47	17.76	10.93	11.52	11.92	12.53	13.82
	4H	15.56	16.10	16.56	17.10	18.42	11.47	12.01	12.47	13.01	14.33
	6H	16.07	16.54	17.08	17.56	18.88	11.89	12.35	12.89	13.37	14.69
	8H	16.25	16.68	17.26	17.69	19.02	12.01	12.44	13.02	13.46	14.79
	12H	16.34	16.73	17.37	17.76	19.10	12.07	12.46	13.10	13.49	14.83
8H	4H	15.53	15.96	16.54	16.98	18.31	11.75	12.18	12.76	13.20	14.53
	6H	16.09	16.45	17.13	17.50	18.83	12.26	12.62	13.30	13.67	15.00
	8H	16.30	16.62	17.35	17.66	19.01	12.45	12.76	13.49	13.80	15.15
	12H	16.44	16.72	17.48	17.75	19.14	12.56	12.84	13.61	13.87	15.27
12H	4H	15.48	15.87	16.51	16.90	18.24	11.75	12.15	12.78	13.18	14.51
	6H	16.06	16.38	17.11	17.42	18.77	12.31	12.62	13.35	13.67	15.01
	8H	16.28	16.56	17.33	17.60	18.99	12.51	12.79	13.56	13.83	15.22