

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: P907750

Luminaire Tested: DFN2DIP-4P4F0-030D080US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907750
REPORT IS A COMBINATION OF REPORTS P899139 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D080US840-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

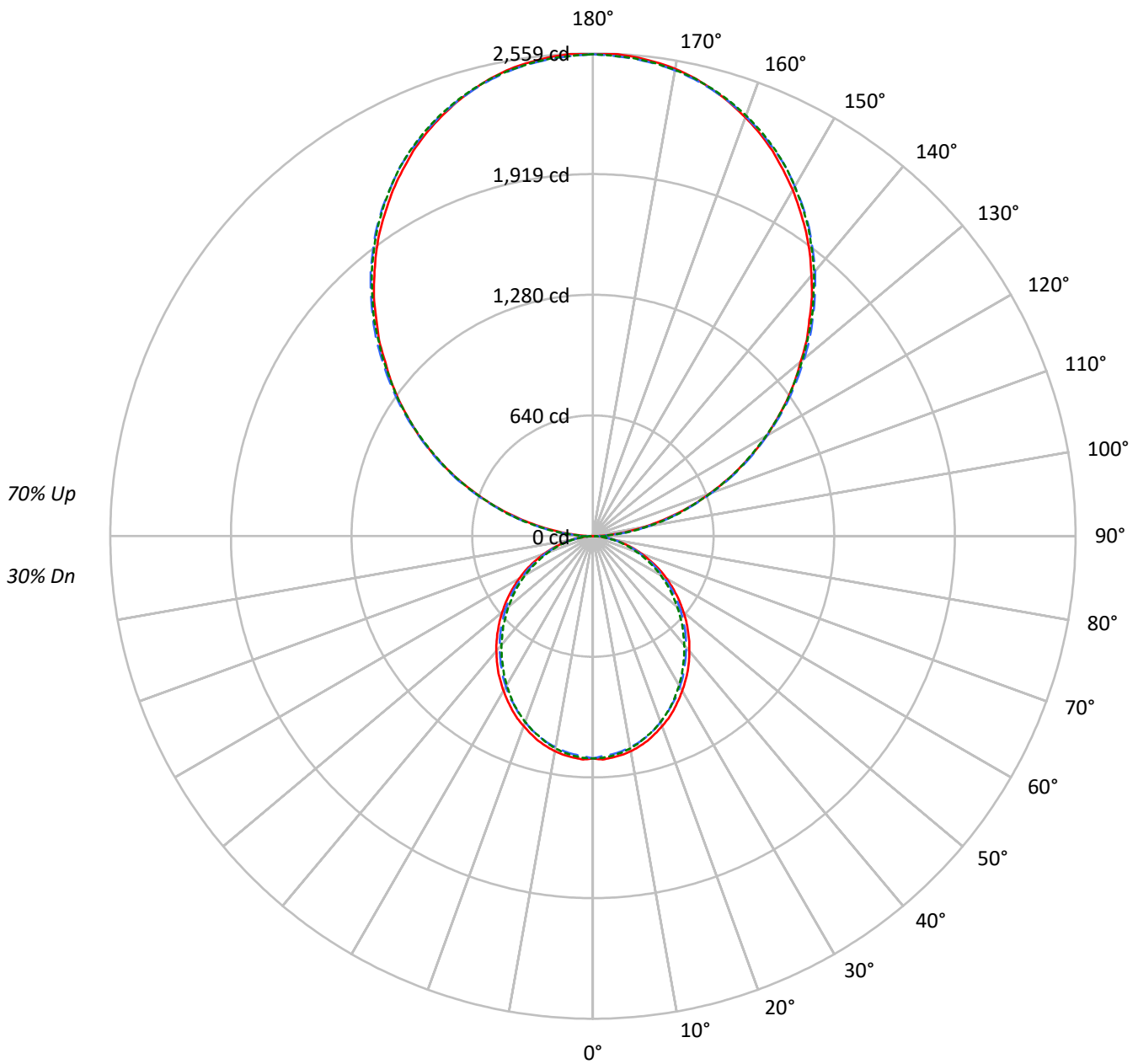
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10149.2 lumens
Efficiency: N/A
Efficacy: 100.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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



— 0°-180° - - 45°-225° - - - 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	37	37	37	30
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	32	32	32	32	25
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27	27	27	27	21
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	23	23	23	23	18
4	71	60	53	47	63	54	48	43	43	38	35	33	30	27	23	21	19	19	19	19	15
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	21	19	17	17	17	17	13
6	60	48	40	34	53	43	37	32	35	30	26	26	23	20	19	17	15	15	15	15	12
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13	13	13	13	10
8	51	39	32	26	46	35	29	24	28	24	20	22	18	16	16	13	12	12	12	12	9
9	47	35	28	23	42	32	26	22	26	21	18	20	17	14	14	12	11	11	11	11	8
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10	10	10	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	765	765	765
5°	766	754	759
10°	760	744	750
15°	749	732	734
20°	734	716	717
25°	719	695	699
30°	700	677	675
35°	682	655	649
40°	660	632	626
45°	639	610	601
50°	615	587	572
55°	590	559	546
60°	561	527	516
65°	531	494	481
70°	491	454	443
75°	437	405	409
80°	372	343	342
85°	270	236	231

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1934 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.0	1.1
10°-20°	312.2	3.1
20°-30°	458.8	4.5
30°-40°	532.8	5.3
40°-50°	532.2	5.2
50°-60°	464.1	4.6
60°-70°	343.1	3.4
70°-80°	194.1	1.9
80°-90°	58.5	0.6
90°-100°	158.1	1.6
100°-110°	502.4	4.9
110°-120°	859.7	8.5
120°-130°	1130.6	11.1
130°-140°	1269.1	12.5
140°-150°	1244.5	12.3
150°-160°	1043.9	10.3
160°-170°	692.3	6.8
170°-180°	242.0	2.4
0°-30°	881.9	8.7
0°-40°	1414.7	13.9
0°-60°	2411.0	23.8
0°-90°	3006.6	29.6
90°-120°	1520.1	15.0
90°-150°	5164.3	50.9
90°-180°	7143.0	70.4
0°-180°	10149.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1179	1179	1179	1179	1179	
5°	1179	1174	1162	1171	1169	112
15°	1122	1116	1101	1105	1100	316
25°	1016	1007	987	990	987	467
35°	876	865	847	840	834	547
45°	713	705	688	676	671	550
55°	540	533	519	506	500	482
65°	364	357	346	336	330	360
75°	190	188	182	176	178	203
85°	46	45	44	41	40	52
90°	2	28	76	71	73	10
95°	112	134	138	138	134	125
105°	464	470	474	478	478	489
115°	863	875	871	869	863	853
125°	1255	1274	1268	1261	1259	1121
135°	1623	1647	1652	1649	1643	1254
145°	1970	1986	1998	2000	1992	1231
155°	2253	2259	2266	2277	2270	1037
165°	2451	2449	2449	2464	2453	691
175°	2550	2544	2540	2555	2542	242
180°	2555	2555	2555	2555	2555	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1178.8	1178.8	1178.8	1178.8	1178.8
2.5°	1185.7	1180.0	1167.5	1178.8	1176.7
5°	1178.8	1174.4	1161.9	1170.9	1168.7
7.5°	1170.9	1164.2	1151.7	1160.8	1158.5
10°	1158.5	1150.5	1137.0	1146.0	1142.7
12.5°	1141.5	1134.7	1121.2	1126.7	1124.5
15°	1122.2	1115.5	1100.7	1105.2	1099.5
17.5°	1098.3	1091.7	1076.8	1082.5	1076.8
20°	1072.3	1065.5	1049.7	1053.0	1048.5
22.5°	1046.3	1036.1	1021.3	1021.3	1019.0
25°	1015.6	1006.6	987.3	989.6	987.3
27.5°	981.6	973.6	959.0	955.6	950.0
30°	947.7	938.6	921.6	918.2	913.6
32.5°	911.4	904.6	886.5	879.6	875.0
35°	876.3	864.9	846.8	839.9	834.2
37.5°	836.6	826.4	808.2	800.2	794.6
40°	795.8	786.7	768.5	758.4	753.9
42.5°	756.1	747.0	728.9	717.5	710.7
45°	713.1	705.1	688.0	675.6	671.1
47.5°	671.1	663.2	645.0	632.5	625.7
50°	626.8	621.2	605.3	589.5	583.8
52.5°	583.8	575.8	561.2	548.7	540.7
55°	539.7	532.8	519.2	505.6	500.0
57.5°	495.3	489.7	474.9	461.3	456.8
60°	451.1	446.7	430.8	418.3	415.0
62.5°	408.1	400.1	388.8	377.5	372.9
65°	364.0	357.1	345.8	335.6	329.9
67.5°	318.6	312.9	302.7	294.8	290.2
70°	276.6	272.1	261.9	253.9	249.4
72.5°	233.6	228.9	223.3	215.4	212.1
75°	190.4	188.2	182.5	175.7	178.0
77.5°	151.9	147.3	145.0	141.7	138.4
80°	113.4	112.2	109.9	106.5	104.3
82.5°	77.1	77.1	76.0	71.4	71.4
85°	46.5	45.3	44.2	40.8	39.7
87.5°	20.4	18.2	15.9	12.5	11.3
90°	2.3	27.8	75.5	70.9	73.2
92.5°	47.8	64.7	67.1	69.3	69.3
95°	112.5	134.0	137.8	137.8	134.0
97.5°	187.2	207.2	215.7	215.7	215.7
100°	273.5	291.1	297.3	297.3	295.0
102.5°	364.4	377.5	385.9	388.2	385.9
105°	463.7	469.9	474.5	478.4	478.4
107.5°	562.3	571.6	571.6	573.1	562.3
110°	657.8	670.1	670.1	670.1	664.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	761.0	774.2	771.8	765.7	761.0
115°	862.7	875.0	871.2	868.9	862.7
117.5°	963.6	980.6	969.8	963.6	957.5
120°	1065.3	1082.3	1065.3	1065.3	1058.3
122.5°	1157.7	1179.3	1168.5	1162.4	1157.7
125°	1254.8	1274.0	1267.9	1260.9	1258.7
127.5°	1349.6	1373.4	1364.9	1355.7	1349.6
130°	1438.1	1465.8	1462.0	1457.4	1449.0
132.5°	1537.5	1559.0	1560.6	1549.8	1543.7
135°	1623.0	1646.9	1651.5	1649.2	1643.1
137.5°	1718.5	1737.8	1741.6	1740.1	1730.8
140°	1802.5	1821.7	1832.5	1832.5	1824.0
142.5°	1888.8	1908.0	1914.2	1916.5	1908.0
145°	1970.4	1985.8	1998.1	2000.4	1992.0
147.5°	2043.6	2062.9	2072.0	2076.0	2067.5
150°	2119.1	2132.1	2140.6	2147.6	2140.6
152.5°	2186.1	2199.2	2210.0	2218.5	2210.0
155°	2253.1	2259.3	2266.2	2276.9	2270.1
157.5°	2310.9	2315.5	2319.4	2334.7	2324.0
160°	2362.5	2367.1	2369.4	2382.5	2373.3
162.5°	2410.2	2410.2	2412.6	2427.2	2416.4
165°	2451.0	2448.7	2448.7	2464.2	2453.4
167.5°	2488.0	2481.1	2481.1	2496.5	2485.7
170°	2515.8	2509.6	2507.3	2522.7	2509.6
172.5°	2535.1	2528.9	2526.6	2541.9	2528.9
175°	2550.4	2544.3	2539.6	2555.1	2541.9
177.5°	2558.9	2552.7	2548.1	2561.2	2548.1
180°	2555.1	2555.1	2555.1	2555.1	2555.1



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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	4.09	4.79	5.20	5.90	7.44	3.65	4.35	4.76	5.46	6.99
	3H	5.74	6.37	6.87	7.49	9.04	5.25	5.88	6.38	7.00	8.55
	4H	6.33	6.93	7.46	8.05	9.60	5.83	6.43	6.97	7.55	9.11
	6H	6.72	7.28	7.87	8.40	9.96	6.22	6.78	7.37	7.90	9.46
	8H	6.83	7.35	7.97	8.49	10.05	6.33	6.85	7.47	7.99	9.55
	12H	6.87	7.37	8.02	8.50	10.08	6.36	6.86	7.51	7.99	9.57
4H	2H	4.53	5.13	5.67	6.25	7.81	4.18	4.78	5.32	5.90	7.45
	3H	6.39	6.89	7.54	8.03	9.60	5.98	6.48	7.13	7.63	9.20
	4H	7.10	7.56	8.25	8.70	10.28	6.68	7.14	7.83	8.27	9.86
	6H	7.61	8.01	8.77	9.16	10.74	7.18	7.58	8.34	8.73	10.31
	8H	7.76	8.13	8.92	9.28	10.87	7.33	7.69	8.48	8.84	10.44
	12H	7.83	8.17	9.00	9.32	10.93	7.38	7.72	8.55	8.87	10.48
8H	4H	7.29	7.66	8.44	8.80	10.40	6.91	7.28	8.06	8.43	10.02
	6H	7.92	8.22	9.09	9.41	11.00	7.54	7.84	8.71	9.03	10.62
	8H	8.14	8.41	9.32	9.57	11.19	7.75	8.01	8.93	9.18	10.80
	12H	8.27	8.50	9.45	9.67	11.31	7.86	8.09	9.04	9.26	10.90
12H	4H	7.27	7.60	8.44	8.76	10.36	6.90	7.23	8.07	8.39	9.99
	6H	7.95	8.21	9.13	9.38	10.99	7.58	7.84	8.76	9.01	10.62
	8H	8.19	8.42	9.37	9.58	11.23	7.81	8.04	8.99	9.20	10.85