

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: P907800

Luminaire Tested: DFN2DIP-4P4F0-050D080US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907800
REPORT IS A COMBINATION OF REPORTS P899144 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D080US840-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect
Frosted Lens
Light Source: -
Ballast/Driver: -

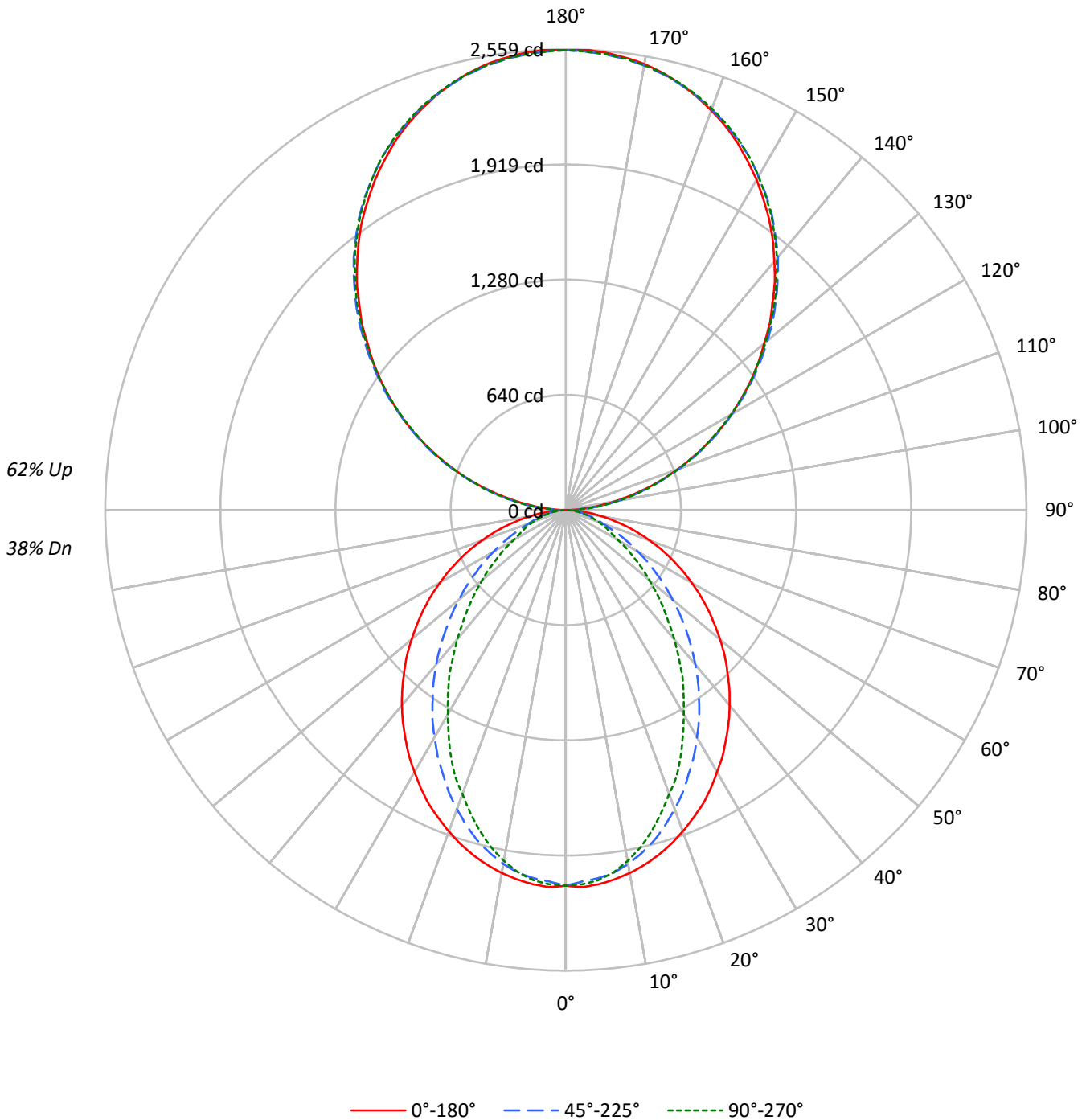
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11441.8 lumens
Efficiency: N/A
Efficacy: 92.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 123.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45	38			38
1	95	91	88	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32			32
2	87	80	74	69	79	73	68	64	59	56	53	47	45	43	36	34	33	28			28
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28	24			24
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25	21			21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18			18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16			16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17	15			15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13			13
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14	12			12
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1354	1354	1354
5°	1356	1333	1341
10°	1343	1307	1298
15°	1324	1264	1231
20°	1300	1205	1149
25°	1275	1139	1069
30°	1242	1071	968
35°	1209	997	879
40°	1175	921	777
45°	1137	837	685
50°	1096	752	595
55°	1054	661	508
60°	1006	566	418
65°	950	469	377
70°	883	379	342
75°	798	335	312
80°	675	283	273
85°	472	191	209

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°	195.6	1.7
10°-20°	536.9	4.7
20°-30°	753.8	6.6
30°-40°	821.7	7.2
40°-50°	755.2	6.6
50°-60°	593.1	5.2
60°-70°	386.1	3.4
70°-80°	198.7	1.7
80°-90°	58.0	0.5
90°-100°	158.1	1.4
100°-110°	502.4	4.4
110°-120°	859.7	7.5
120°-130°	1130.6	9.9
130°-140°	1269.1	11.1
140°-150°	1244.5	10.9
150°-160°	1043.9	9.1
160°-170°	692.3	6.1
170°-180°	242.0	2.1
0°-30°	1486.3	13.0
0°-40°	2308.0	20.2
0°-60°	3656.4	32.0
0°-90°	4299.2	37.6
90°-120°	1520.1	13.3
90°-150°	5164.3	45.1
90°-180°	7143.0	62.4
0°-180°	11441.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	2	28	76	71	73	11
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°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
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	6.93	7.67	8.00	8.73	10.17	2.89	3.63	3.96	4.69	6.13
	3H	8.61	9.27	9.68	10.34	11.80	4.08	4.74	5.15	5.81	7.27
	4H	9.22	9.84	10.30	10.91	12.38	4.52	5.15	5.61	6.22	7.69
	6H	9.64	10.21	10.73	11.29	12.77	4.84	5.42	5.93	6.49	7.97
	8H	9.77	10.31	10.86	11.40	12.88	4.93	5.48	6.03	6.57	8.04
	12H	9.83	10.35	10.93	11.43	12.93	4.97	5.49	6.07	6.58	8.07
4H	2H	6.94	7.57	8.03	8.64	10.10	3.48	4.11	4.57	5.18	6.64
	3H	8.77	9.29	9.86	10.39	11.86	4.82	5.34	5.92	6.44	7.92
	4H	9.46	9.94	10.56	11.03	12.53	5.37	5.85	6.47	6.94	8.44
	6H	9.98	10.38	11.08	11.50	12.99	5.79	6.20	6.90	7.31	8.80
	8H	10.15	10.53	11.26	11.64	13.15	5.91	6.30	7.02	7.40	8.91
	12H	10.25	10.59	11.37	11.71	13.22	5.98	6.32	7.10	7.44	8.95
8H	4H	9.42	9.80	10.53	10.91	12.42	5.65	6.03	6.76	7.13	8.64
	6H	9.99	10.31	11.12	11.45	12.96	6.16	6.48	7.30	7.63	9.13
	8H	10.21	10.49	11.35	11.61	13.14	6.36	6.63	7.49	7.76	9.28
	12H	10.35	10.59	11.49	11.72	13.28	6.47	6.72	7.61	7.84	9.40
12H	4H	9.37	9.71	10.50	10.83	12.34	5.65	5.99	6.77	7.11	8.62
	6H	9.97	10.24	11.10	11.37	12.89	6.22	6.49	7.35	7.62	9.14
	8H	10.19	10.43	11.33	11.55	13.11	6.42	6.67	7.56	7.79	9.35