

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: P908422

Luminaire Tested: DFN2DIP-PN3F0-030D070US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908422
REPORT IS A COMBINATION OF REPORTS P899568 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D070US840-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

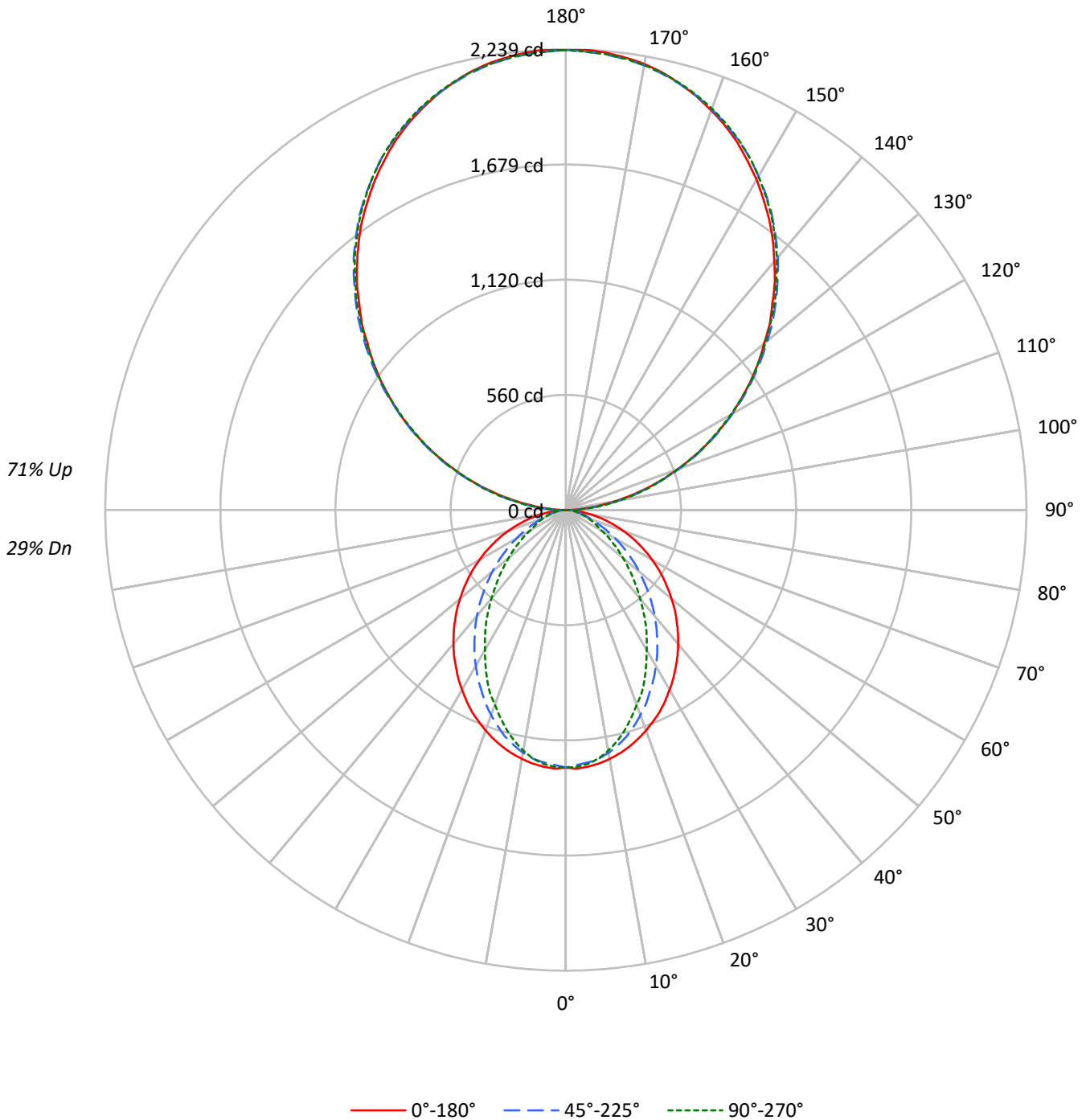
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8831.2 lumens
Efficiency: N/A
Efficacy: 112.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 78.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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				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	29				29
1	93	89	86	82	84	80	77	74	63	61	59	48	46	45	33	32	32	25				25
2	85	78	72	68	76	70	66	61	56	52	49	42	40	38	29	28	27	22				22
3	78	69	62	57	70	62	56	52	49	45	42	37	35	32	26	25	23	19				19
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	24	22	20	16				16
5	65	54	47	41	59	49	43	38	39	35	31	30	27	24	21	19	18	14				14
6	60	49	41	36	54	44	38	33	35	31	27	27	24	21	20	17	16	13				13
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14	11				11
8	52	40	33	27	46	36	30	25	29	24	21	23	19	17	16	14	13	10				10
9	48	36	29	24	43	33	27	23	27	22	19	21	18	15	15	13	12	9				9
10	45	33	26	22	40	30	24	20	25	20	17	19	16	14	14	12	11	8				8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1464	1464	1464
5°	1465	1439	1449
10°	1450	1410	1401
15°	1429	1363	1328
20°	1402	1297	1238
25°	1374	1225	1151
30°	1337	1150	1041
35°	1300	1070	945
40°	1263	987	834
45°	1220	895	734
50°	1175	802	636
55°	1128	704	542
60°	1074	601	446
65°	1012	496	400
70°	936	398	361
75°	840	349	327
80°	703	289	282
85°	478	188	208

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2214 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	1.3
10°-20°	322.1	3.6
20°-30°	452.3	5.1
30°-40°	493.0	5.6
40°-50°	453.1	5.1
50°-60°	355.9	4.0
60°-70°	231.6	2.6
70°-80°	119.2	1.4
80°-90°	36.8	0.4
90°-100°	138.3	1.6
100°-110°	439.6	5.0
110°-120°	752.2	8.5
120°-130°	989.3	11.2
130°-140°	1110.5	12.6
140°-150°	1088.9	12.3
150°-160°	913.5	10.3
160°-170°	605.8	6.9
170°-180°	211.7	2.4
0°-30°	891.8	10.1
0°-40°	1384.8	15.7
0°-60°	2193.8	24.8
0°-90°	2581.5	29.2
90°-120°	1330.1	15.1
90°-150°	4518.8	51.2
90°-180°	6250.0	70.8
0°-180°	8831.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
90°	2	24	66	62	64	9
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
90°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6



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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	6.09	6.77	7.21	7.89	9.43	2.05	2.74	3.18	3.85	5.39
	3H	7.75	8.36	8.88	9.48	11.04	3.23	3.84	4.36	4.96	6.52
	4H	8.35	8.93	9.49	10.05	11.61	3.67	4.25	4.81	5.37	6.93
	6H	8.76	9.29	9.90	10.41	11.99	3.97	4.51	5.12	5.63	7.21
	8H	8.88	9.38	10.03	10.52	12.09	4.06	4.57	5.21	5.70	7.27
	12H	8.93	9.41	10.08	10.55	12.13	4.09	4.58	5.25	5.71	7.30
4H	2H	6.09	6.67	7.23	7.79	9.35	2.63	3.21	3.78	4.33	5.89
	3H	7.90	8.38	9.05	9.53	11.10	3.96	4.44	5.11	5.59	7.17
	4H	8.58	9.02	9.73	10.16	11.75	4.50	4.94	5.65	6.08	7.67
	6H	9.08	9.46	10.24	10.62	12.20	4.90	5.28	6.06	6.44	8.03
	8H	9.25	9.60	10.41	10.75	12.36	5.02	5.38	6.18	6.53	8.13
	12H	9.33	9.65	10.51	10.82	12.42	5.08	5.40	6.25	6.56	8.17
8H	4H	8.53	8.89	9.69	10.04	11.64	4.76	5.12	5.92	6.27	7.87
	6H	9.09	9.38	10.27	10.57	12.17	5.27	5.56	6.45	6.75	8.35
	8H	9.30	9.55	10.48	10.73	12.34	5.45	5.71	6.64	6.88	8.50
	12H	9.43	9.65	10.61	10.82	12.47	5.56	5.78	6.75	6.95	8.60
12H	4H	8.48	8.80	9.65	9.96	11.57	4.76	5.08	5.93	6.24	7.85
	6H	9.06	9.32	10.25	10.49	12.11	5.31	5.57	6.50	6.74	8.36
	8H	9.27	9.50	10.46	10.66	12.32	5.51	5.74	6.70	6.91	8.56