

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: P916614

Luminaire Tested: DFN2DIP-PN3F0-030D090US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916614
REPORT IS A COMBINATION OF REPORTS P899596 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-030D090US930-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

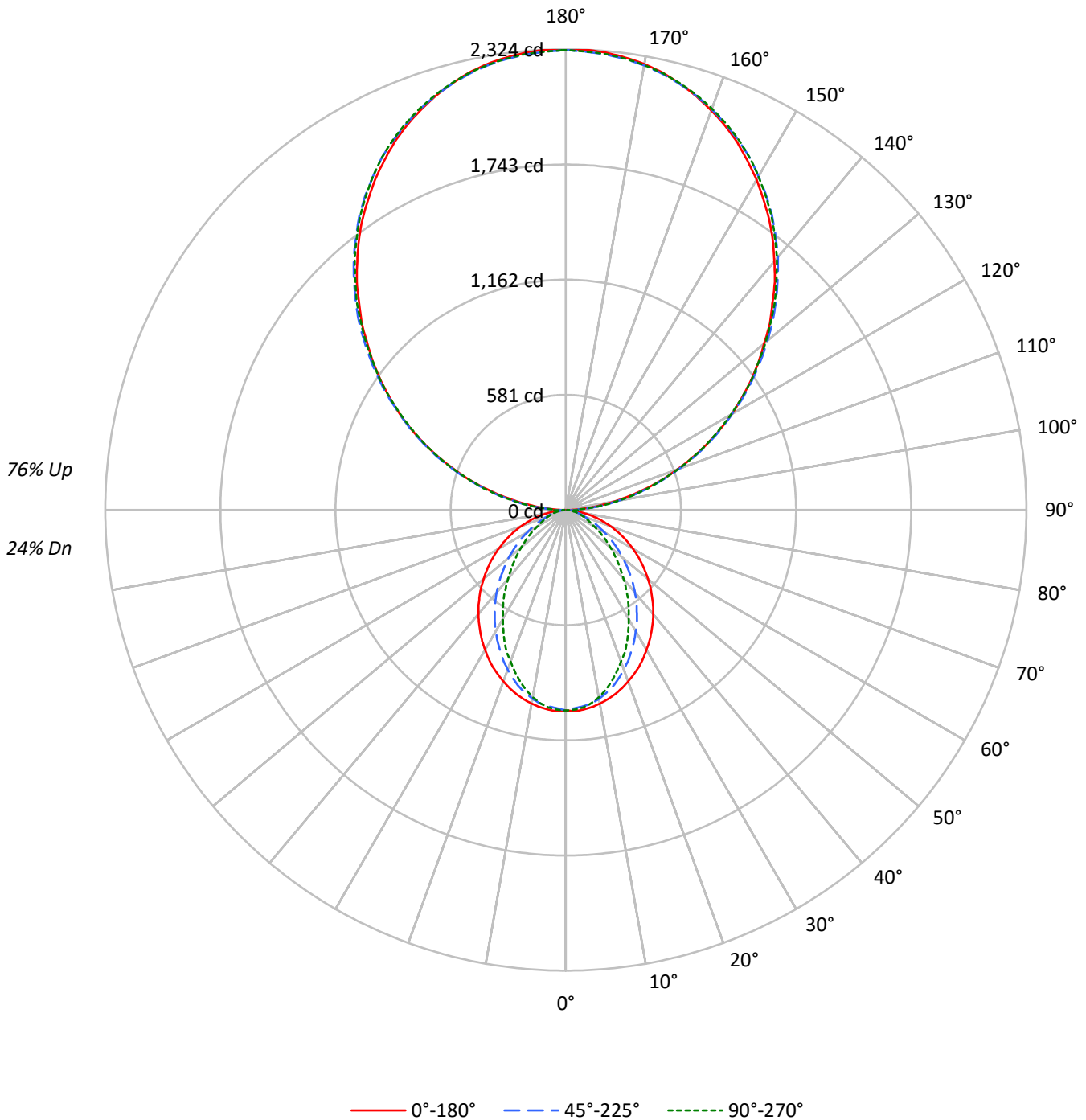
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8572.8 lumens
Efficiency: N/A
Efficacy: 90.1 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): 95.1
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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	24				24
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28	21				21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24	18				18
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	20	15				15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18	13				13
5	64	54	46	40	57	48	42	37	38	33	29	28	25	22	19	17	16	12				12
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14	11				11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12	9				9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	16	14	12	11	8				8
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8				8
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	10	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1182	1182	1182
5°	1183	1162	1170
10°	1170	1138	1131
15°	1154	1100	1072
20°	1132	1047	999
25°	1109	989	929
30°	1079	928	841
35°	1050	863	763
40°	1020	797	673
45°	985	723	592
50°	949	648	513
55°	911	568	438
60°	867	485	360
65°	817	400	323
70°	756	321	292
75°	679	282	264
80°	568	234	228
85°	386	152	168

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2297 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.7	1.1
10°-20°	260.1	3.0
20°-30°	365.1	4.3
30°-40°	398.0	4.6
40°-50°	365.8	4.3
50°-60°	287.3	3.4
60°-70°	187.0	2.2
70°-80°	96.3	1.1
80°-90°	31.2	0.4
90°-100°	143.6	1.7
100°-110°	456.3	5.3
110°-120°	780.8	9.1
120°-130°	1026.9	12.0
130°-140°	1152.6	13.4
140°-150°	1130.3	13.2
150°-160°	948.2	11.1
160°-170°	628.8	7.3
170°-180°	219.8	2.6
0°-30°	720.0	8.4
0°-40°	1118.0	13.0
0°-60°	1771.2	20.7
0°-90°	2085.6	24.3
90°-120°	1380.7	16.1
90°-150°	4690.5	54.7
90°-180°	6487.0	75.7
0°-180°	8572.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1011	1011	1011	1011	1011	
5°	1011	1006	994	1003	1000	96
15°	962	951	920	903	894	271
25°	873	843	783	746	732	401
35°	752	705	625	567	547	471
45°	615	553	458	392	370	475
55°	467	396	297	242	225	418
65°	316	242	159	128	125	313
75°	168	104	73	67	66	178
85°	39	20	17	17	17	45
90°	2	25	69	64	66	9
95°	102	122	125	125	122	114
105°	421	427	431	434	434	444
115°	784	795	791	789	784	775
125°	1140	1157	1152	1145	1143	1018
135°	1474	1496	1500	1498	1492	1139
145°	1790	1804	1815	1817	1809	1118
155°	2046	2052	2058	2068	2062	942
165°	2226	2224	2224	2238	2228	628
175°	2316	2311	2307	2321	2309	220
180°	2321	2321	2321	2321	2321	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1010.9	1010.9	1010.9	1010.9	1010.9
2.5°	1015.5	1010.9	1000.8	1010.0	1008.2
5°	1010.9	1006.3	994.4	1002.7	999.9
7.5°	1002.7	997.2	984.4	988.0	983.4
10°	991.6	985.3	967.0	964.2	958.8
12.5°	978.0	969.7	945.0	939.5	929.4
15°	961.5	951.4	920.3	902.9	893.8
17.5°	942.2	927.6	889.2	869.1	854.4
20°	920.3	902.0	856.2	833.5	813.3
22.5°	896.6	875.5	822.4	791.3	777.6
25°	872.8	843.4	783.1	745.6	731.8
27.5°	844.4	813.3	746.5	703.5	682.4
30°	814.2	779.4	706.2	659.7	634.9
32.5°	784.9	742.8	667.9	612.9	590.0
35°	752.0	705.3	624.8	567.2	547.1
37.5°	720.0	669.6	584.6	521.4	498.6
40°	686.2	631.3	542.5	477.5	453.8
42.5°	651.3	592.9	500.4	432.7	409.9
45°	614.8	553.4	457.5	392.4	370.5
47.5°	580.0	515.1	416.3	351.2	331.2
50°	541.6	476.6	376.0	312.8	293.7
52.5°	504.0	435.5	337.6	277.2	259.8
55°	467.4	396.1	297.3	242.5	225.1
57.5°	430.0	356.8	261.7	210.4	195.8
60°	391.5	318.4	224.1	177.5	162.9
62.5°	354.1	280.9	192.1	148.2	141.0
65°	315.6	241.5	159.1	128.1	125.3
67.5°	279.1	204.9	128.1	112.5	109.7
70°	240.6	169.3	106.1	96.9	93.3
72.5°	204.0	136.2	88.7	81.4	79.6
75°	168.3	104.3	73.2	66.8	65.9
77.5°	132.6	74.0	57.6	54.0	52.1
80°	99.7	53.1	43.9	40.3	40.3
82.5°	69.5	35.7	30.2	28.4	28.4
85°	39.3	20.1	17.4	17.4	17.4
87.5°	14.7	7.3	7.3	6.4	6.4
90°	2.1	25.2	68.6	64.3	66.4
92.5°	43.4	58.8	60.9	62.9	62.9
95°	102.2	121.7	125.2	125.2	121.7
97.5°	170.0	188.2	195.9	195.9	195.9
100°	248.3	264.5	270.0	270.0	268.0
102.5°	330.9	342.8	350.5	352.6	350.5
105°	421.2	426.7	431.0	434.5	434.5
107.5°	510.7	519.1	519.1	520.5	510.7
110°	597.5	608.7	608.7	608.7	603.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	691.2	703.1	701.0	695.4	691.2
115°	783.6	794.8	791.2	789.2	783.6
117.5°	875.2	890.6	880.8	875.2	869.6
120°	967.6	982.9	967.6	967.6	961.2
122.5°	1051.5	1071.1	1061.4	1055.7	1051.5
125°	1139.7	1157.2	1151.6	1145.2	1143.2
127.5°	1225.7	1247.4	1239.7	1231.3	1225.7
130°	1306.2	1331.4	1327.9	1323.6	1316.0
132.5°	1396.4	1416.0	1417.4	1407.6	1402.1
135°	1474.1	1495.7	1500.0	1497.9	1492.3
137.5°	1560.8	1578.3	1581.8	1580.5	1572.1
140°	1637.1	1654.6	1664.3	1664.3	1656.7
142.5°	1715.5	1732.9	1738.5	1740.7	1732.9
145°	1789.7	1803.6	1814.8	1816.9	1809.2
147.5°	1856.1	1873.6	1882.0	1885.5	1877.8
150°	1924.7	1936.6	1944.2	1950.5	1944.2
152.5°	1985.5	1997.4	2007.2	2014.9	2007.2
155°	2046.4	2051.9	2058.3	2068.1	2061.8
157.5°	2098.8	2103.1	2106.6	2120.5	2110.7
160°	2145.7	2149.9	2152.1	2163.9	2155.5
162.5°	2189.1	2189.1	2191.2	2204.5	2194.7
165°	2226.2	2224.1	2224.1	2238.1	2228.3
167.5°	2259.8	2253.5	2253.5	2267.4	2257.6
170°	2285.0	2279.3	2277.3	2291.2	2279.3
172.5°	2302.4	2296.9	2294.7	2308.8	2296.9
175°	2316.4	2310.8	2306.6	2320.7	2308.8
177.5°	2324.1	2318.5	2314.3	2326.2	2314.3
180°	2320.7	2320.7	2320.7	2320.7	2320.7



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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	4.60	5.26	5.76	6.40	8.00	0.57	1.23	1.72	2.36	3.96
	3H	6.26	6.85	7.42	8.00	9.61	1.74	2.32	2.90	3.47	5.08
	4H	6.86	7.42	8.03	8.56	10.18	2.18	2.73	3.35	3.88	5.50
	6H	7.27	7.78	8.44	8.93	10.56	2.48	3.00	3.66	4.14	5.77
	8H	7.38	7.87	8.56	9.04	10.66	2.57	3.05	3.75	4.22	5.84
	12H	7.44	7.90	8.62	9.06	10.70	2.60	3.06	3.78	4.22	5.86
4H	2H	4.60	5.16	5.78	6.30	7.92	1.14	1.70	2.32	2.84	4.46
	3H	6.40	6.87	7.59	8.04	9.67	2.47	2.93	3.65	4.10	5.73
	4H	7.09	7.51	8.27	8.67	10.32	3.00	3.43	4.19	4.59	6.24
	6H	7.58	7.95	8.77	9.13	10.77	3.41	3.77	4.59	4.96	6.59
	8H	7.75	8.09	8.94	9.27	10.92	3.53	3.87	4.71	5.04	6.70
	12H	7.84	8.15	9.04	9.33	10.99	3.58	3.89	4.78	5.08	6.74
8H	4H	7.04	7.38	8.23	8.55	10.21	3.27	3.61	4.45	4.78	6.44
	6H	7.59	7.87	8.80	9.09	10.74	3.77	4.05	4.98	5.27	6.92
	8H	7.80	8.05	9.01	9.24	10.91	3.96	4.20	5.17	5.40	7.07
	12H	7.93	8.14	9.14	9.34	11.04	4.06	4.28	5.28	5.47	7.17
12H	4H	6.98	7.29	8.18	8.48	10.14	3.26	3.57	4.46	4.76	6.42
	6H	7.57	7.81	8.78	9.00	10.68	3.82	4.06	5.03	5.26	6.93
	8H	7.77	7.99	8.99	9.18	10.88	4.02	4.23	5.23	5.42	7.12