

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: P905943

Luminaire Tested: DFN2DIP-PN4F0-050D120US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905943
REPORT IS A COMBINATION OF REPORTS P901276 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D120US835-RLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

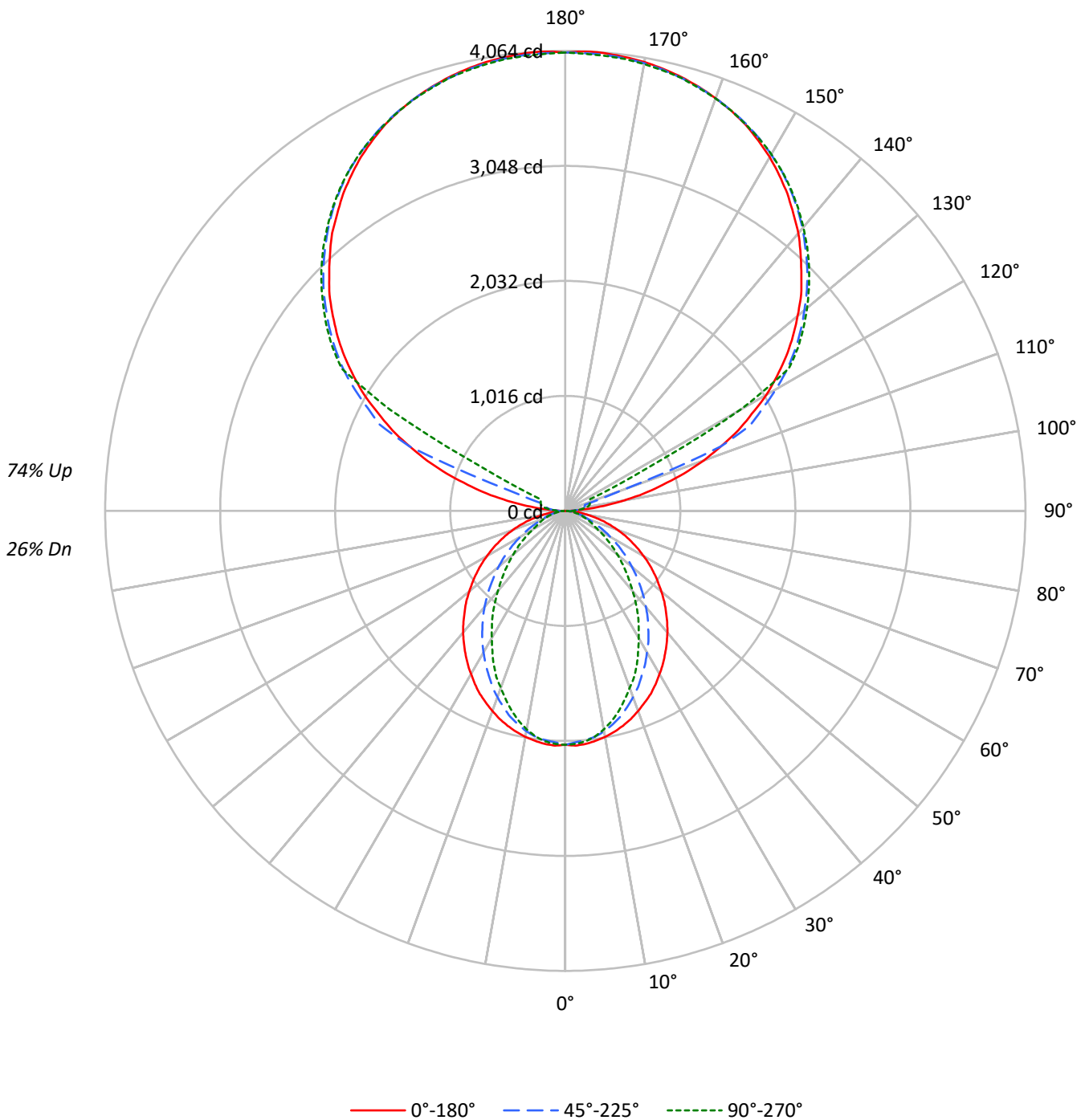
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16130.0 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: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 147.6
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				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	91	91	91	91	70	70	70	52	52	52	34	34	34	26				26
1	93	89	85	82	83	79	76	74	62	60	58	46	44	43	31	30	29	23				23
2	85	78	72	67	75	70	65	61	54	51	48	40	38	36	27	26	25	19				19
3	77	68	62	56	69	61	56	51	48	44	41	36	33	31	24	23	22	17				17
4	71	61	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19	15				15
5	65	54	46	41	58	49	42	37	38	34	30	29	26	23	20	18	17	13				13
6	60	48	41	35	53	44	37	32	35	30	26	26	23	20	18	16	15	11				11
7	55	44	36	31	49	39	33	28	31	27	23	24	20	18	17	15	13	10				10
8	51	39	32	27	46	36	29	25	28	24	20	22	18	16	15	13	12	9				9
9	48	36	29	24	42	33	26	22	26	21	18	20	17	14	14	12	11	8				8
10	44	33	26	21	40	30	24	20	24	19	16	18	15	13	13	11	10	8				8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1508	1508	1508
5°	1511	1485	1494
10°	1496	1456	1446
15°	1475	1408	1371
20°	1448	1342	1279
25°	1420	1268	1190
30°	1383	1192	1077
35°	1346	1110	978
40°	1309	1025	865
45°	1265	931	761
50°	1220	836	661
55°	1174	735	564
60°	1119	629	465
65°	1057	521	419
70°	981	420	379
75°	886	371	345
80°	749	312	300
85°	522	209	228

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2160 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.2
10°-20°	531.7	3.3
20°-30°	746.5	4.6
30°-40°	813.7	5.0
40°-50°	747.9	4.6
50°-60°	587.3	3.6
60°-70°	382.3	2.4
70°-80°	196.8	1.2
80°-90°	57.4	0.4
90°-100°	133.5	0.8
100°-110°	497.8	3.1
110°-120°	1320.3	8.2
120°-130°	2189.8	13.6
130°-140°	2326.1	14.4
140°-150°	2161.8	13.4
150°-160°	1738.1	10.8
160°-170°	1119.9	6.9
170°-180°	385.5	2.4
0°-30°	1471.8	9.1
0°-40°	2285.5	14.2
0°-60°	3620.7	22.4
0°-90°	4257.1	26.4
90°-120°	1951.7	12.1
90°-150°	8629.4	53.5
90°-180°	11873.0	73.6
0°-180°	16130.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	3	35	58	73	79	15
95°	190	94	114	129	126	225
105°	891	979	179	211	223	952
115°	1685	1735	1808	451	240	1659
125°	2382	2421	2476	2497	2506	2125
135°	2948	2995	3021	3051	3045	2277
145°	3420	3417	3467	3487	3472	2139
155°	3766	3739	3775	3792	3769	1735
165°	3968	3950	3959	3980	3959	1121
175°	4058	4038	4044	4064	4035	386
180°	4050	4050	4050	4050	4050	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	2.8	35.1	58.5	73.4	79.0
92.5°	73.4	61.6	70.3	76.2	79.0
95°	190.3	93.6	114.1	129.1	126.0
97.5°	342.8	102.7	149.3	158.3	161.1
100°	518.8	117.3	167.0	190.3	196.3
102.5°	712.0	706.4	172.9	205.0	214.0
105°	890.8	978.9	178.9	210.9	222.7
107.5°	1098.9	1172.0	184.8	216.8	228.6
110°	1298.3	1359.6	512.9	219.9	231.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1485.9	1538.4	1488.7	225.5	234.5
115°	1684.9	1734.7	1808.1	451.3	240.5
117.5°	1857.9	1916.4	1966.5	1547.1	779.5
120°	2051.4	2095.2	2148.1	2183.3	1787.6
122.5°	2215.3	2262.3	2321.1	2338.5	2341.6
125°	2382.3	2420.6	2476.3	2496.8	2505.5
127.5°	2534.7	2575.8	2620.0	2649.2	2652.0
130°	2678.4	2725.4	2757.4	2789.8	2787.0
132.5°	2824.9	2863.2	2895.2	2921.7	2918.9
135°	2948.1	2995.1	3021.2	3050.8	3044.9
137.5°	3076.9	3112.0	3141.6	3170.8	3162.1
140°	3202.9	3226.5	3258.5	3285.0	3270.4
142.5°	3308.6	3329.2	3367.1	3390.4	3375.8
145°	3420.0	3416.9	3466.6	3487.2	3472.5
147.5°	3516.4	3507.7	3557.5	3572.1	3560.6
150°	3610.3	3589.8	3636.8	3654.2	3639.6
152.5°	3689.3	3666.0	3709.9	3727.6	3707.1
155°	3765.5	3739.4	3774.6	3792.0	3768.7
157.5°	3827.1	3803.8	3830.3	3850.8	3827.1
160°	3880.0	3862.3	3880.0	3897.4	3876.9
162.5°	3926.7	3909.3	3923.9	3944.4	3918.0
165°	3967.7	3950.3	3959.0	3979.6	3959.0
167.5°	4000.1	3982.3	3991.4	4011.9	3985.5
170°	4026.5	4008.8	4014.7	4035.2	4008.8
172.5°	4043.9	4026.5	4032.5	4053.0	4026.5
175°	4058.5	4038.0	4043.9	4064.5	4035.2
177.5°	4064.5	4043.9	4047.1	4067.6	4041.2
180°	4049.9	4049.9	4049.9	4049.9	4049.9



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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	5.83	6.50	6.97	7.62	9.20	1.79	2.46	2.93	3.59	5.16
	3H	7.50	8.09	8.65	9.23	10.82	2.97	3.57	4.12	4.70	6.29
	4H	8.10	8.67	9.26	9.80	11.40	3.41	3.98	4.57	5.12	6.71
	6H	8.52	9.04	9.68	10.18	11.78	3.73	4.25	4.89	5.39	6.99
	8H	8.64	9.13	9.81	10.29	11.89	3.81	4.31	4.98	5.46	7.06
	12H	8.70	9.17	9.87	10.31	11.93	3.85	4.32	5.02	5.47	7.09
4H	2H	5.83	6.39	6.99	7.53	9.13	2.37	2.94	3.54	4.07	5.67
	3H	7.64	8.12	8.81	9.28	10.89	3.71	4.18	4.88	5.34	6.95
	4H	8.33	8.77	9.50	9.92	11.54	4.25	4.68	5.42	5.83	7.46
	6H	8.84	9.21	10.02	10.39	12.00	4.66	5.03	5.84	6.21	7.82
	8H	9.02	9.36	10.19	10.53	12.16	4.79	5.13	5.96	6.30	7.93
	12H	9.10	9.42	10.30	10.59	12.23	4.84	5.16	6.04	6.33	7.97
8H	4H	8.29	8.64	9.46	9.80	11.43	4.52	4.87	5.69	6.03	7.66
	6H	8.85	9.14	10.05	10.34	11.97	5.03	5.32	6.23	6.53	8.15
	8H	9.07	9.32	10.27	10.50	12.15	5.22	5.47	6.42	6.66	8.31
	12H	9.20	9.42	10.41	10.60	12.29	5.34	5.55	6.54	6.74	8.42
12H	4H	8.23	8.55	9.42	9.72	11.36	4.52	4.83	5.71	6.01	7.64
	6H	8.83	9.08	10.03	10.26	11.91	5.08	5.33	6.28	6.52	8.16
	8H	9.04	9.26	10.25	10.44	12.12	5.29	5.50	6.49	6.69	8.37