

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: P908819

Luminaire Tested: DFN2DIP-PN4F0-100D040US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908819
REPORT IS A COMBINATION OF REPORTS P901142 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D040US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

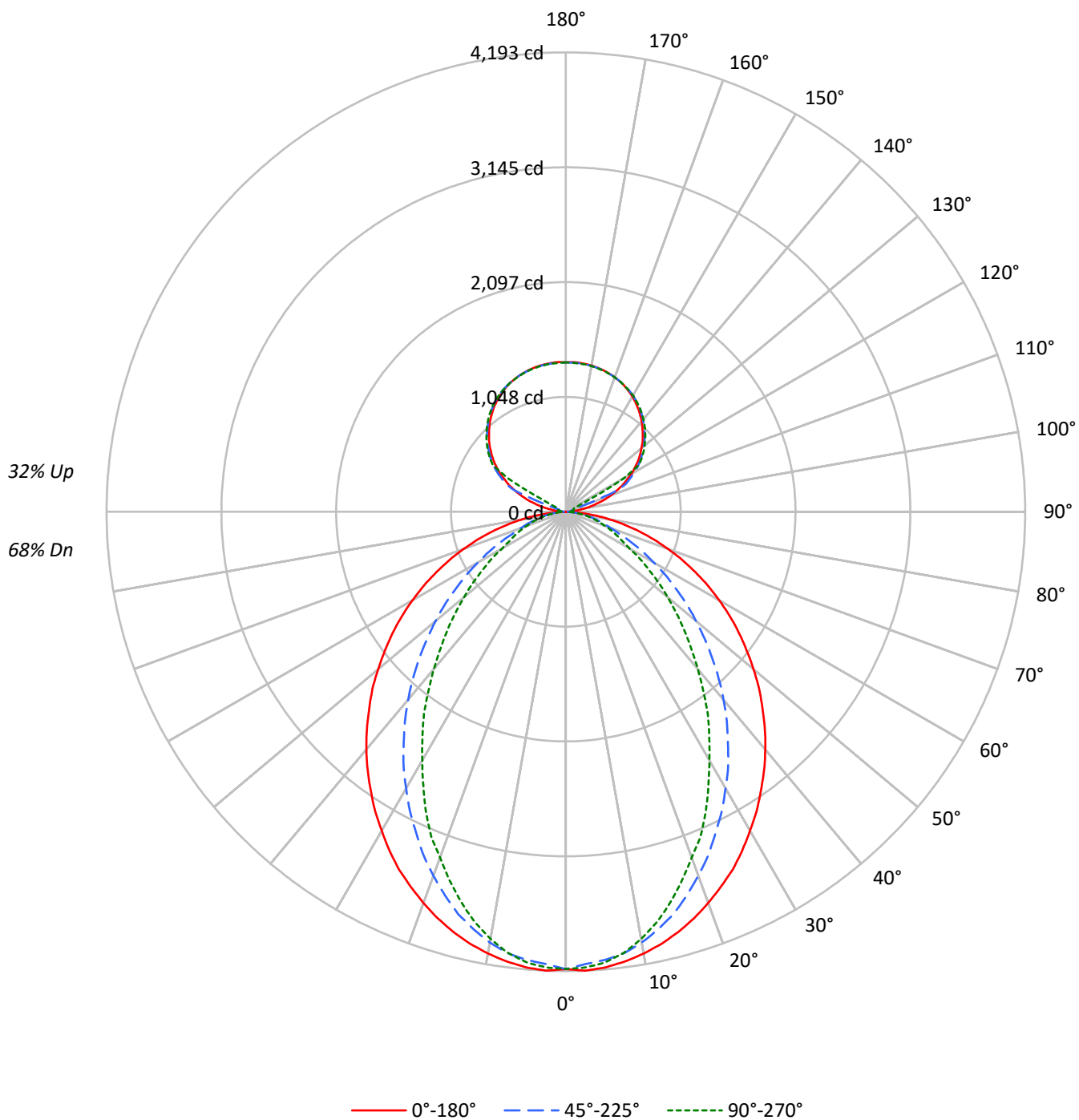
Lumens per Lamp: N/A
Luminaire Lumens: 12582.9 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 131.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3047	3047	3047
5°	3052	2999	3018
10°	3021	2940	2920
15°	2980	2843	2769
20°	2925	2710	2583
25°	2868	2560	2404
30°	2793	2406	2176
35°	2718	2241	1976
40°	2643	2070	1746
45°	2555	1881	1538
50°	2465	1689	1335
55°	2370	1484	1139
60°	2261	1270	938
65°	2135	1052	845
70°	1982	849	766
75°	1790	749	698
80°	1512	630	607
85°	1053	423	460

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2555 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	3.1
10°-20°	1073.8	8.5
20°-30°	1507.6	12.0
30°-40°	1643.4	13.1
40°-50°	1510.5	12.0
50°-60°	1186.3	9.4
60°-70°	772.1	6.1
70°-80°	397.5	3.2
80°-90°	103.9	0.8
90°-100°	44.9	0.4
100°-110°	167.6	1.3
110°-120°	444.4	3.5
120°-130°	737.1	5.9
130°-140°	783.0	6.2
140°-150°	727.7	5.8
150°-160°	585.1	4.6
160°-170°	377.0	3.0
170°-180°	129.8	1.0
0°-30°	2972.6	23.6
0°-40°	4616.1	36.7
0°-60°	7312.8	58.1
0°-90°	8586.2	68.2
90°-120°	656.9	5.2
90°-150°	2904.8	23.1
90°-180°	3997.0	31.8
0°-180°	12582.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4106	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3604	3482	3233	3078	3022	1657
35°	3105	2912	2580	2342	2259	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1636	1228	1001	929	1725
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	1	12	20	25	27	12
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4173.8	4173.8	4173.8	4173.8	4173.8
2.5°	4192.6	4173.8	4132.1	4170.1	4162.6
5°	4173.8	4154.9	4105.6	4139.7	4128.4
7.5°	4139.7	4117.2	4064.3	4079.1	4060.4
10°	4094.4	4067.9	3992.6	3981.0	3958.6
12.5°	4037.9	4003.8	3901.6	3879.2	3837.5
15°	3969.8	3928.1	3799.8	3728.1	3690.5
17.5°	3890.4	3829.9	3671.3	3588.3	3527.8
20°	3799.8	3724.1	3535.3	3441.2	3357.8
22.5°	3701.7	3614.7	3395.5	3267.3	3210.8
25°	3603.5	3482.5	3233.2	3078.5	3021.6
27.5°	3486.5	3357.8	3082.1	2904.6	2817.6
30°	3361.8	3217.9	2915.8	2723.5	2621.3
32.5°	3240.9	3066.9	2757.5	2530.7	2436.1
35°	3104.9	2912.3	2580.0	2342.0	2258.6
37.5°	2972.7	2764.7	2413.7	2152.8	2058.6
40°	2832.9	2606.5	2239.8	1971.7	1873.5
42.5°	2689.4	2447.7	2066.3	1786.6	1692.3
45°	2538.3	2285.0	1888.8	1620.2	1529.6
47.5°	2394.9	2126.8	1718.8	1450.3	1367.4
50°	2236.1	1968.0	1552.5	1291.6	1212.6
52.5°	2081.0	1797.8	1393.8	1144.5	1072.8
55°	1930.0	1635.5	1227.5	1001.1	929.3
57.5°	1775.3	1473.1	1080.5	868.8	808.3
60°	1616.6	1314.4	925.3	733.0	672.5
62.5°	1461.9	1159.7	793.0	612.0	581.9
65°	1303.2	997.0	657.2	529.0	517.4
67.5°	1152.2	846.0	529.0	464.4	453.2
70°	993.4	698.9	438.0	400.3	385.2
72.5°	842.3	562.6	366.3	336.2	328.6
75°	694.9	430.4	302.2	275.7	272.1
77.5°	547.9	305.8	238.0	222.8	215.2
80°	411.5	219.2	181.2	166.3	166.3
82.5°	286.9	147.4	124.6	117.0	117.0
85°	162.3	82.9	71.7	71.7	71.7
87.5°	60.5	30.1	30.1	26.5	26.5
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3

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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	12.58	13.58	13.37	14.39	15.38	8.54	9.55	9.33	10.36	11.34
	3H	14.27	15.17	15.08	15.99	17.01	9.75	10.65	10.55	11.46	12.48
	4H	14.89	15.74	15.71	16.56	17.59	10.21	11.05	11.03	11.88	12.91
	6H	15.32	16.11	16.16	16.94	17.98	10.54	11.32	11.37	12.15	13.19
	8H	15.46	16.20	16.30	17.05	18.09	10.63	11.37	11.47	12.23	13.27
	12H	15.53	16.23	16.37	17.08	18.15	10.68	11.39	11.53	12.23	13.30
4H	2H	12.62	13.47	13.44	14.29	15.32	9.16	10.01	9.99	10.84	11.86
	3H	14.47	15.17	15.30	16.03	17.07	10.53	11.23	11.37	12.09	13.14
	4H	15.17	15.81	16.02	16.66	17.74	11.08	11.72	11.93	12.58	13.65
	6H	15.70	16.25	16.56	17.13	18.20	11.51	12.07	12.38	12.95	14.02
	8H	15.88	16.39	16.74	17.27	18.35	11.65	12.16	12.52	13.04	14.13
	12H	15.98	16.44	16.87	17.34	18.43	11.72	12.18	12.61	13.08	14.17
8H	4H	15.15	15.66	16.02	16.54	17.63	11.38	11.89	12.25	12.77	13.86
	6H	15.72	16.15	16.62	17.07	18.16	11.91	12.33	12.80	13.25	14.34
	8H	15.94	16.32	16.85	17.23	18.34	12.10	12.48	13.00	13.39	14.49
	12H	16.09	16.42	17.00	17.33	18.49	12.23	12.56	13.13	13.46	14.62
12H	4H	15.11	15.57	16.00	16.47	17.56	11.39	11.86	12.28	12.75	13.84
	6H	15.70	16.08	16.61	16.99	18.10	11.96	12.33	12.86	13.25	14.35
	8H	15.93	16.26	16.84	17.17	18.32	12.18	12.51	13.08	13.41	14.57