

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: P922219

Luminaire Tested: DFN2DIP-PN3F0-090D040US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922219
REPORT IS A COMBINATION OF REPORTS P901058 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D040US940-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

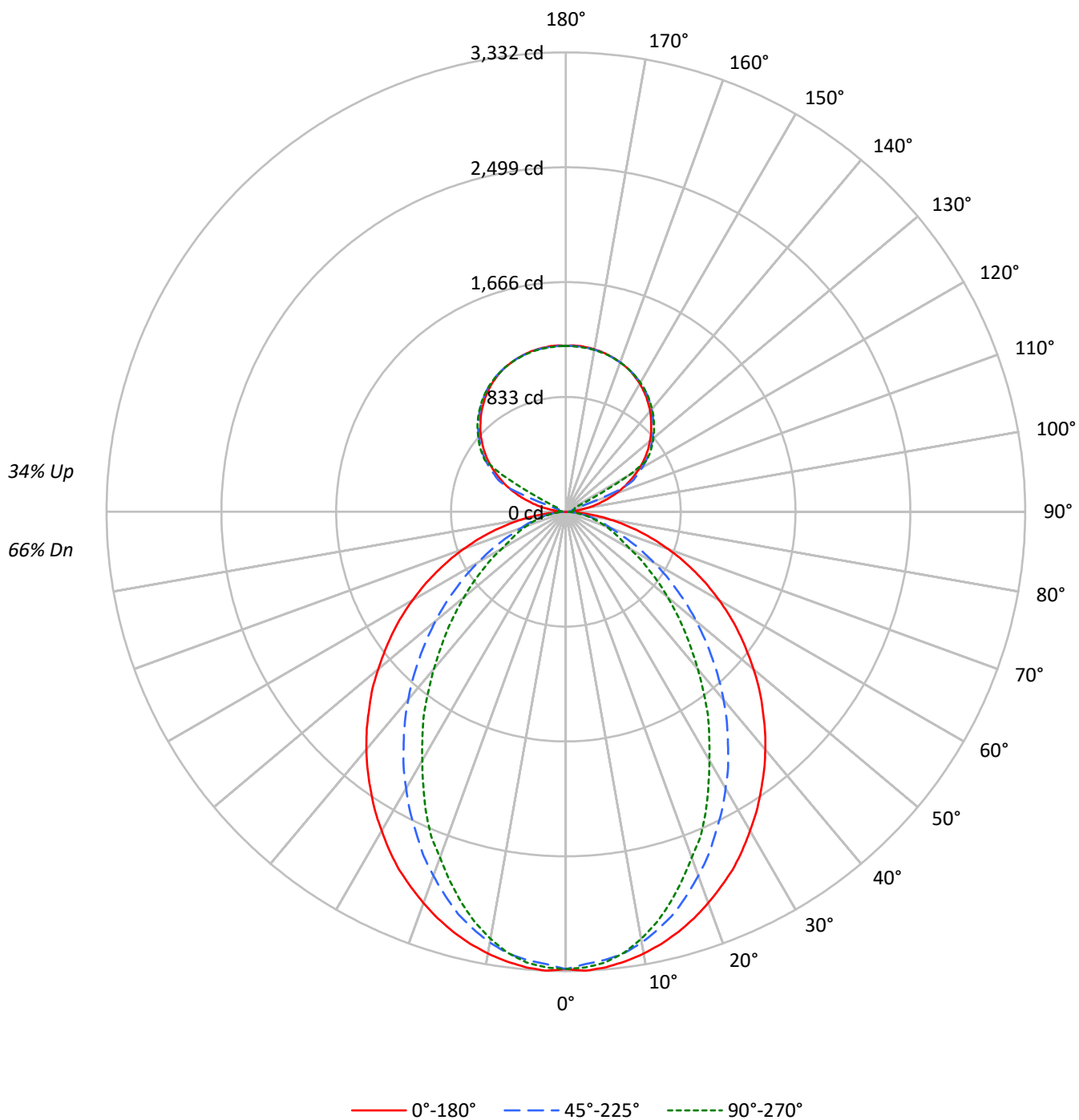
Lumens per Lamp: N/A
Luminaire Lumens: 10352.8 lumens
Efficiency: N/A
Efficacy: 84.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 123
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	71	69	64	62	61
2	93	86	80	75	88	81	76	72	73	68	65	64	61	59	57	54	52
3	86	76	69	63	80	72	66	61	65	60	55	57	54	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	43	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	37	31	27	33	28	25	30	26	23
10	51	39	32	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3877	3877	3877
5°	3881	3813	3839
10°	3841	3736	3712
15°	3785	3610	3517
20°	3713	3437	3279
25°	3639	3244	3049
30°	3541	3046	2758
35°	3444	2833	2502
40°	3345	2614	2209
45°	3231	2371	1944
50°	3113	2126	1685
55°	2989	1864	1436
60°	2845	1591	1180
65°	2680	1313	1061
70°	2479	1055	957
75°	2227	924	867
80°	1863	766	747
85°	1264	499	551

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3231 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.9	3.0
10°-20°	853.4	8.2
20°-30°	1198.1	11.6
30°-40°	1306.0	12.6
40°-50°	1200.4	11.6
50°-60°	942.7	9.1
60°-70°	613.6	5.9
70°-80°	315.9	3.1
80°-90°	82.8	0.8
90°-100°	39.7	0.4
100°-110°	148.0	1.4
110°-120°	392.4	3.8
120°-130°	650.9	6.3
130°-140°	691.4	6.7
140°-150°	642.6	6.2
150°-160°	516.6	5.0
160°-170°	332.9	3.2
170°-180°	114.6	1.1
0°-30°	2362.4	22.8
0°-40°	3668.4	35.4
0°-60°	5811.5	56.1
0°-90°	6823.7	65.9
90°-120°	580.1	5.6
90°-150°	2565.0	24.8
90°-180°	3529.0	34.1
0°-180°	10352.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3317	3317	3317	3317	3317	
5°	3317	3302	3263	3290	3281	315
15°	3155	3122	3020	2963	2933	889
25°	2864	2768	2570	2446	2401	1317
35°	2468	2314	2050	1861	1795	1544
45°	2017	1816	1501	1288	1216	1558
55°	1534	1300	975	796	738	1371
65°	1036	792	522	420	411	1027
75°	552	342	240	219	216	584
85°	129	66	57	57	57	148
90°	1	10	17	22	24	10
95°	56	28	34	38	38	67
105°	265	291	53	63	66	283
115°	501	516	537	134	72	493
125°	708	720	736	742	745	632
135°	876	890	898	907	905	677
145°	1016	1016	1030	1036	1032	636
155°	1119	1112	1122	1127	1120	516
165°	1179	1174	1177	1183	1177	333
175°	1206	1200	1202	1208	1199	115
180°	1204	1204	1204	1204	1204	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3316.9	3316.9	3316.9	3316.9	3316.9
2.5°	3331.9	3316.9	3283.7	3314.0	3308.0
5°	3316.9	3301.9	3262.8	3289.8	3280.9
7.5°	3289.8	3272.0	3230.0	3241.7	3226.7
10°	3253.9	3232.8	3173.0	3163.7	3145.9
12.5°	3208.9	3181.9	3100.7	3082.8	3049.6
15°	3154.8	3121.7	3019.8	2962.7	2932.8
17.5°	3091.7	3043.7	2917.5	2851.6	2803.5
20°	3019.8	2959.6	2809.5	2734.7	2668.4
22.5°	2941.8	2872.6	2698.4	2596.5	2551.6
25°	2863.7	2767.5	2569.5	2446.5	2401.3
27.5°	2770.7	2668.4	2449.4	2308.3	2239.2
30°	2671.7	2557.3	2317.2	2164.4	2083.1
32.5°	2575.4	2437.2	2191.4	2011.2	1936.0
35°	2467.5	2314.3	2050.3	1861.2	1794.9
37.5°	2362.4	2197.2	1918.2	1710.8	1636.0
40°	2251.3	2071.4	1779.9	1566.9	1488.9
42.5°	2137.3	1945.3	1642.0	1419.8	1344.9
45°	2017.2	1816.0	1500.9	1287.5	1215.6
47.5°	1903.2	1690.1	1365.9	1152.5	1086.6
50°	1777.1	1564.0	1233.8	1026.4	963.7
52.5°	1653.9	1428.7	1107.7	909.5	852.6
55°	1533.7	1299.7	975.4	795.6	738.5
57.5°	1410.9	1170.7	858.6	690.5	642.4
60°	1284.7	1044.5	735.4	582.5	534.4
62.5°	1161.8	921.7	630.3	486.3	462.4
65°	1035.6	792.4	522.3	420.4	411.2
67.5°	915.6	672.3	420.4	369.1	360.2
70°	789.5	555.4	348.1	318.2	306.0
72.5°	669.4	447.1	291.1	267.2	261.2
75°	552.2	342.1	240.1	219.1	216.2
77.5°	435.3	243.0	189.1	177.1	171.0
80°	327.1	174.2	143.9	132.2	132.2
82.5°	228.0	117.2	99.1	93.0	93.0
85°	128.9	65.9	57.0	57.0	57.0
87.5°	48.1	23.9	23.9	21.0	21.0
90°	0.8	10.4	17.4	21.8	23.5
92.5°	21.8	18.3	20.9	22.6	23.5
95°	56.5	27.8	33.9	38.3	37.5
97.5°	101.9	30.5	44.4	47.1	47.9
100°	154.2	34.9	49.7	56.5	58.3
102.5°	211.6	210.0	51.4	60.9	63.6
105°	264.7	291.0	53.1	62.7	66.2
107.5°	326.6	348.4	54.9	64.5	67.9
110°	385.9	404.1	152.5	65.4	68.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	441.7	457.3	442.5	67.1	69.7
115°	500.8	515.6	537.4	134.1	71.5
117.5°	552.2	569.6	584.5	459.9	231.7
120°	609.8	622.8	638.5	649.0	531.4
122.5°	658.4	672.4	689.9	695.1	696.0
125°	708.1	719.5	736.0	742.2	744.8
127.5°	753.4	765.6	778.7	787.5	788.3
130°	796.1	810.1	819.6	829.2	828.4
132.5°	839.6	851.0	860.6	868.4	867.6
135°	876.3	890.3	898.0	906.8	905.1
137.5°	914.5	925.0	933.8	942.4	939.9
140°	952.0	959.0	968.6	976.4	972.1
142.5°	983.5	989.5	1000.9	1007.7	1003.4
145°	1016.5	1015.7	1030.4	1036.5	1032.2
147.5°	1045.2	1042.6	1057.4	1061.8	1058.4
150°	1073.1	1067.0	1081.0	1086.2	1081.8
152.5°	1096.6	1089.7	1102.7	1108.0	1101.9
155°	1119.3	1111.5	1121.9	1127.1	1120.2
157.5°	1137.6	1130.6	1138.5	1144.6	1137.6
160°	1153.2	1148.0	1153.2	1158.4	1152.4
162.5°	1167.2	1162.0	1166.4	1172.4	1164.6
165°	1179.4	1174.2	1176.8	1182.9	1176.8
167.5°	1189.0	1183.7	1186.4	1192.5	1184.6
170°	1196.9	1191.6	1193.3	1199.4	1191.6
172.5°	1202.0	1196.9	1198.6	1204.7	1196.9
175°	1206.3	1200.2	1202.0	1208.1	1199.4
177.5°	1208.1	1202.0	1202.9	1209.1	1201.2
180°	1203.8	1203.8	1203.8	1203.8	1203.8

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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	13.19	14.17	14.00	15.00	16.03	9.15	10.13	9.97	10.96	11.99
	3H	14.87	15.75	15.70	16.59	17.64	10.35	11.22	11.17	12.06	13.12
	4H	15.48	16.31	16.33	17.16	18.22	10.80	11.63	11.64	12.47	13.54
	6H	15.91	16.67	16.76	17.52	18.60	11.12	11.88	11.98	12.74	13.82
	8H	16.03	16.76	16.90	17.63	18.71	11.22	11.94	12.08	12.81	13.89
	12H	16.10	16.79	16.97	17.65	18.76	11.26	11.95	12.13	12.82	13.92
4H	2H	13.22	14.05	14.07	14.90	15.96	9.76	10.59	10.61	11.44	12.51
	3H	15.06	15.74	15.92	16.63	17.71	11.12	11.81	11.98	12.69	13.77
	4H	15.75	16.37	16.62	17.25	18.36	11.67	12.29	12.54	13.17	14.28
	6H	16.27	16.81	17.16	17.71	18.82	12.09	12.63	12.98	13.53	14.64
	8H	16.44	16.94	17.33	17.84	18.97	12.22	12.72	13.11	13.62	14.74
	12H	16.54	16.99	17.45	17.91	19.04	12.29	12.74	13.20	13.65	14.78
8H	4H	15.73	16.23	16.62	17.13	18.25	11.96	12.46	12.85	13.36	14.48
	6H	16.29	16.71	17.21	17.65	18.77	12.47	12.89	13.39	13.83	14.95
	8H	16.51	16.87	17.43	17.81	18.95	12.66	13.03	13.59	13.96	15.10
	12H	16.65	16.97	17.58	17.89	19.09	12.78	13.10	13.71	14.03	15.22
12H	4H	15.69	16.14	16.60	17.05	18.18	11.97	12.42	12.88	13.34	14.47
	6H	16.27	16.64	17.20	17.57	18.71	12.52	12.89	13.45	13.82	14.96
	8H	16.49	16.81	17.42	17.74	18.93	12.73	13.06	13.66	13.98	15.17