

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: P918575

Luminaire Tested: DFN2DIP-4P3F0-030D050US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918575
REPORT IS A COMBINATION OF REPORTS P900581 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D050US935-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

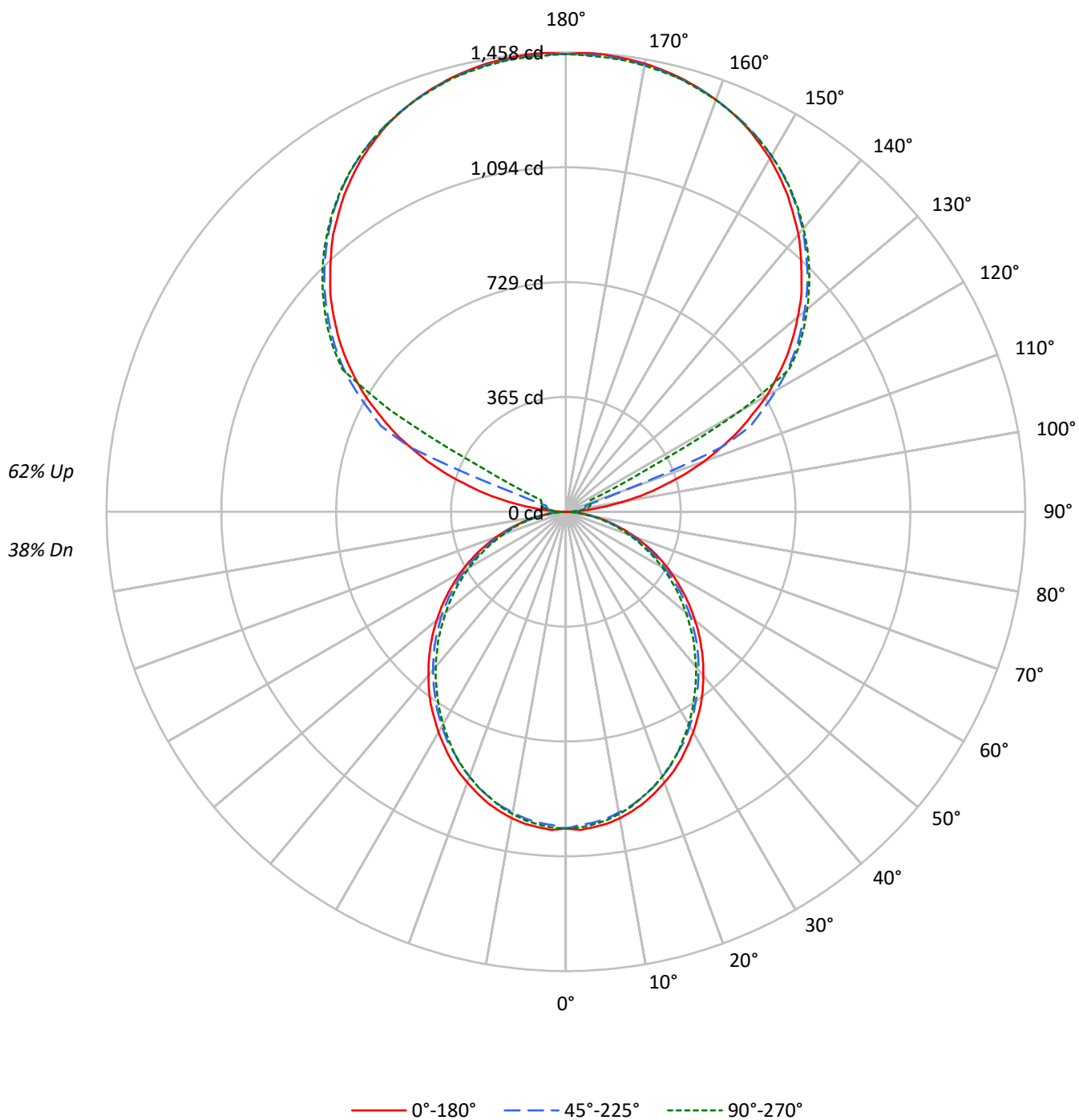
Lumens per Lamp: N/A
Luminaire Lumens: 6819.1 lumens
Efficiency: N/A
Efficacy: 106.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 64.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45
1	95	91	87	83	86	82	79	76	67	65	63	53	51	50	39	39	38
2	86	79	73	68	78	72	67	63	59	55	52	46	44	42	35	33	32
3	79	70	62	57	71	63	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	49	44	46	41	37	36	33	30	27	25	23
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	22	20
6	61	49	41	35	55	45	38	33	37	32	28	29	26	23	22	20	18
7	56	44	36	31	51	40	34	29	33	28	24	27	23	20	20	18	16
8	52	40	32	27	47	37	30	25	30	25	22	24	21	18	19	16	14
9	48	36	29	24	44	33	27	23	28	23	19	22	19	16	17	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	14	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1145	1145	1145
5°	1146	1129	1137
10°	1136	1113	1121
15°	1119	1094	1096
20°	1096	1067	1071
25°	1073	1036	1043
30°	1044	1007	1006
35°	1016	973	968
40°	983	938	931
45°	949	904	893
50°	912	867	849
55°	874	825	809
60°	830	775	763
65°	782	724	709
70°	721	661	651
75°	637	585	596
80°	536	488	493
85°	377	323	322

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 991 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	1.4
10°-20°	266.2	3.9
20°-30°	391.1	5.7
30°-40°	454.3	6.7
40°-50°	453.7	6.7
50°-60°	395.6	5.8
60°-70°	292.5	4.3
70°-80°	165.5	2.4
80°-90°	46.2	0.7
90°-100°	47.9	0.7
100°-110°	178.6	2.6
110°-120°	473.7	6.9
120°-130°	785.6	11.5
130°-140°	834.5	12.2
140°-150°	775.6	11.4
150°-160°	623.5	9.1
160°-170°	401.8	5.9
170°-180°	138.3	2.0
0°-30°	751.9	11.0
0°-40°	1206.2	17.7
0°-60°	2055.6	30.1
0°-90°	2559.7	37.5
90°-120°	700.2	10.3
90°-150°	3095.8	45.4
90°-180°	4259.0	62.5
0°-180°	6819.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	1	13	21	26	28	6
95°	68	34	41	46	45	81
105°	320	351	64	76	80	342
115°	604	622	649	162	86	595
125°	855	868	888	896	899	762
135°	1058	1074	1084	1094	1092	817
145°	1227	1226	1244	1251	1246	767
155°	1351	1342	1354	1360	1352	622
165°	1423	1417	1420	1428	1420	402
175°	1456	1449	1451	1458	1448	139
180°	1453	1453	1453	1453	1453	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	1.0	12.6	21.0	26.3	28.3
92.5°	26.3	22.1	25.2	27.4	28.3
95°	68.3	33.6	41.0	46.3	45.2
97.5°	123.0	36.9	53.6	56.8	57.8
100°	186.1	42.1	59.9	68.3	70.4
102.5°	255.5	253.4	62.1	73.5	76.8
105°	319.6	351.2	64.1	75.7	79.9
107.5°	394.3	420.4	66.3	77.7	82.1
110°	465.8	487.8	184.0	78.9	83.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	533.0	551.9	534.1	80.9	84.1
115°	604.5	622.3	648.7	162.0	86.3
117.5°	666.5	687.5	705.5	555.0	279.7
120°	735.9	751.7	770.6	783.2	641.3
122.5°	794.7	811.6	832.7	839.0	840.1
125°	854.6	868.4	888.4	895.7	898.9
127.5°	909.3	924.0	940.0	950.4	951.4
130°	960.9	977.7	989.2	1000.8	999.9
132.5°	1013.5	1027.2	1038.6	1048.2	1047.1
135°	1057.6	1074.5	1083.8	1094.5	1092.3
137.5°	1103.8	1116.5	1127.0	1137.6	1134.5
140°	1149.0	1157.5	1169.0	1178.4	1173.3
142.5°	1187.0	1194.4	1208.0	1216.3	1211.1
145°	1226.9	1225.8	1243.6	1251.0	1245.8
147.5°	1261.5	1258.3	1276.3	1281.5	1277.4
150°	1295.2	1287.9	1304.7	1311.0	1305.7
152.5°	1323.5	1315.2	1330.9	1337.3	1329.9
155°	1350.9	1341.5	1354.1	1360.4	1352.0
157.5°	1372.9	1364.6	1374.1	1381.5	1372.9
160°	1392.0	1385.6	1392.0	1398.2	1390.9
162.5°	1408.7	1402.5	1407.6	1415.0	1405.6
165°	1423.4	1417.2	1420.3	1427.6	1420.3
167.5°	1435.0	1428.7	1431.9	1439.2	1429.8
170°	1444.5	1438.1	1440.3	1447.6	1438.1
172.5°	1450.8	1444.5	1446.6	1454.0	1444.5
175°	1456.0	1448.6	1450.8	1458.1	1447.6
177.5°	1458.1	1450.8	1451.9	1459.2	1449.7
180°	1452.8	1452.8	1452.8	1452.8	1452.8

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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	6.43	7.19	7.49	8.25	9.69	5.99	6.75	7.05	7.81	9.25
	3H	8.08	8.76	9.15	9.83	11.29	7.59	8.27	8.66	9.34	10.80
	4H	8.66	9.31	9.74	10.38	11.84	8.17	8.81	9.25	9.89	11.35
	6H	9.05	9.65	10.14	10.72	12.20	8.55	9.15	9.64	10.22	11.70
	8H	9.15	9.72	10.25	10.81	12.28	8.65	9.22	9.74	10.31	11.78
	12H	9.20	9.73	10.29	10.82	12.31	8.69	9.23	9.78	10.31	11.80
4H	2H	6.88	7.52	7.96	8.60	10.06	6.52	7.17	7.61	8.24	9.70
	3H	8.73	9.27	9.82	10.37	11.84	8.32	8.86	9.42	9.96	11.44
	4H	9.44	9.93	10.53	11.02	12.52	9.01	9.51	10.11	10.60	12.09
	6H	9.94	10.37	11.05	11.48	12.97	9.51	9.93	10.62	11.05	12.54
	8H	10.09	10.48	11.19	11.59	13.09	9.65	10.05	10.76	11.15	12.66
	12H	10.15	10.51	11.28	11.63	13.14	9.70	10.06	10.83	11.18	12.69
8H	4H	9.62	10.02	10.73	11.12	12.63	9.24	9.64	10.35	10.74	12.25
	6H	10.24	10.57	11.37	11.72	13.22	9.86	10.19	10.99	11.33	12.84
	8H	10.46	10.75	11.59	11.87	13.40	10.07	10.35	11.20	11.48	13.00
	12H	10.58	10.83	11.72	11.96	13.52	10.17	10.42	11.31	11.55	13.11
12H	4H	9.60	9.96	10.72	11.08	12.59	9.23	9.59	10.36	10.71	12.22
	6H	10.27	10.56	11.40	11.68	13.21	9.90	10.18	11.03	11.31	12.83
	8H	10.50	10.75	11.64	11.88	13.44	10.12	10.37	11.26	11.50	13.06