

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: P907779

Luminaire Tested: DFN2DIP-4P4F0-050D030US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907779
REPORT IS A COMBINATION OF REPORTS P900603 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D030US840-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

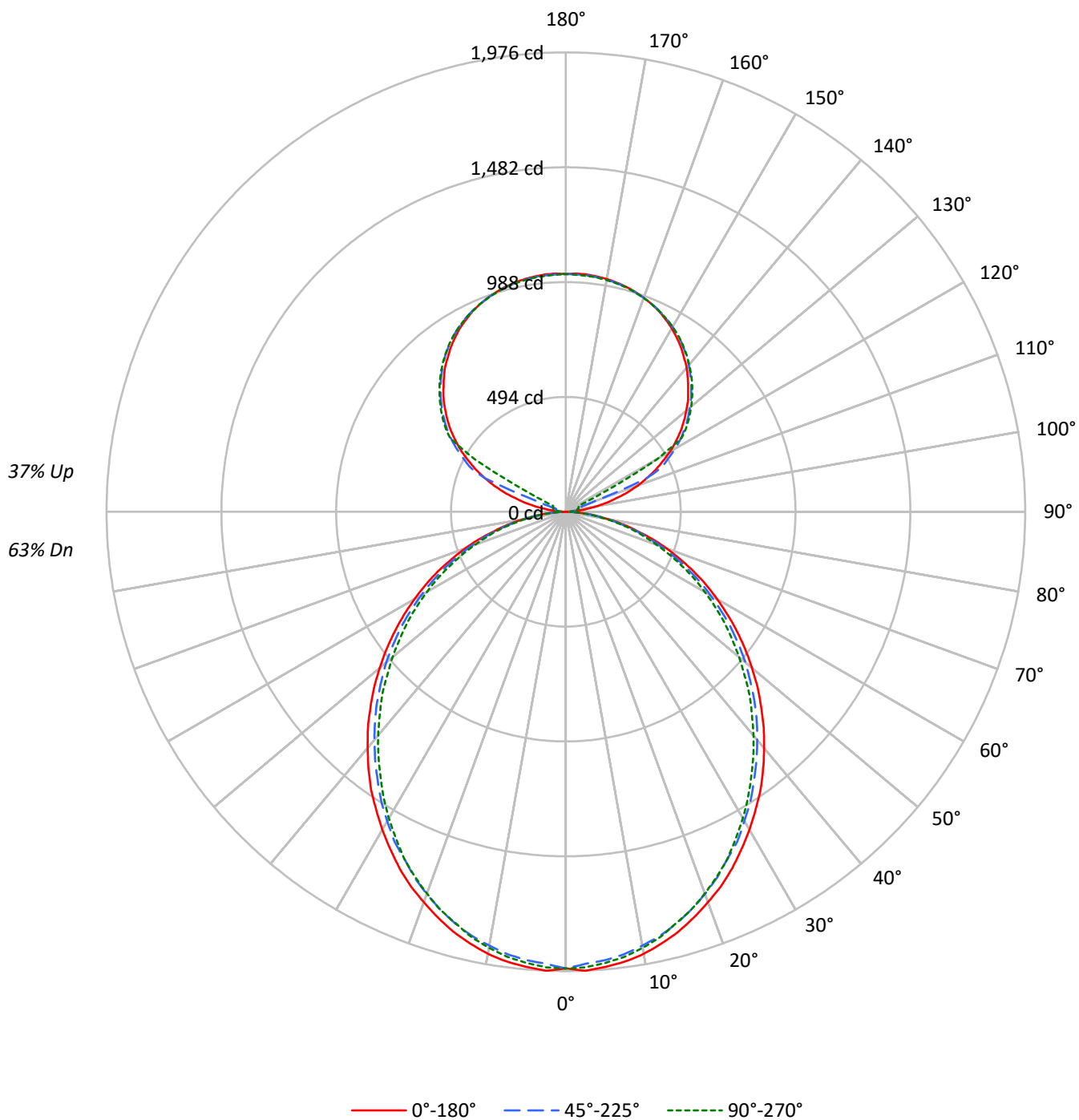
Lumens per Lamp: N/A
Luminaire Lumens: 7998.2 lumens
Efficiency: N/A
Efficacy: 109.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 73.1
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

TEST NUMBER: P907779

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907779

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US840-FLONL

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1275	1275	1275
5°	1277	1257	1266
10°	1266	1241	1249
15°	1248	1221	1223
20°	1223	1193	1196
25°	1198	1159	1165
30°	1167	1128	1125
35°	1137	1091	1083
40°	1101	1054	1043
45°	1064	1017	1001
50°	1024	978	954
55°	983	932	910
60°	936	879	861
65°	884	823	802
70°	819	756	739
75°	729	675	681
80°	620	572	570
85°	450	393	384

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1064 cd/sqm

TEST NUMBER: P907779

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	2.3
10°-20°	520.3	6.5
20°-30°	764.6	9.6
30°-40°	888.1	11.1
40°-50°	887.0	11.1
50°-60°	773.4	9.7
60°-70°	571.7	7.1
70°-80°	323.5	4.0
80°-90°	87.2	1.1
90°-100°	33.7	0.4
100°-110°	125.7	1.6
110°-120°	333.3	4.2
120°-130°	552.9	6.9
130°-140°	587.3	7.3
140°-150°	545.8	6.8
150°-160°	438.8	5.5
160°-170°	282.8	3.5
170°-180°	97.3	1.2
0°-30°	1469.8	18.4
0°-40°	2357.9	29.5
0°-60°	4018.3	50.2
0°-90°	5000.6	62.5
90°-120°	492.7	6.2
90°-150°	2178.7	27.2
90°-180°	2998.0	37.5
0°-180°	7998.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	1	9	15	19	20	7
95°	48	24	29	33	32	57
105°	225	247	45	53	56	240
115°	425	438	456	114	61	419
125°	602	611	625	630	633	536
135°	744	756	763	770	769	575
145°	863	863	875	880	877	540
155°	951	944	953	957	952	438
165°	1002	997	1000	1005	1000	283
175°	1025	1020	1021	1026	1019	98
180°	1022	1022	1022	1022	1022	

TEST NUMBER: P907779

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	0.7	8.9	14.7	18.6	19.9
92.5°	18.6	15.6	17.8	19.3	19.9
95°	48.1	23.6	28.8	32.6	31.8
97.5°	86.5	26.0	37.7	40.0	40.7
100°	131.0	29.6	42.2	48.1	49.6
102.5°	179.8	178.3	43.6	51.7	54.0
105°	224.9	247.1	45.1	53.2	56.2
107.5°	277.4	295.9	46.7	54.7	57.8
110°	327.8	343.3	129.5	55.5	58.5

TEST NUMBER: P907779

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	375.2	388.4	375.9	57.0	59.2
115°	425.4	438.0	456.5	113.9	60.7
117.5°	469.1	483.8	496.4	390.6	196.8
120°	517.9	529.0	542.3	551.2	451.3
122.5°	559.3	571.2	586.0	590.4	591.2
125°	601.5	611.1	625.2	630.4	632.6
127.5°	640.0	650.3	661.5	668.8	669.5
130°	676.2	688.1	696.2	704.3	703.7
132.5°	713.2	722.9	730.9	737.6	736.9
135°	744.3	756.2	762.8	770.2	768.7
137.5°	776.8	785.7	793.1	800.5	798.3
140°	808.6	814.6	822.6	829.3	825.7
142.5°	835.4	840.5	850.1	856.0	852.3
145°	863.4	862.6	875.3	880.4	876.7
147.5°	887.8	885.6	898.2	901.8	898.9
150°	911.5	906.4	918.2	922.5	918.9
152.5°	931.4	925.5	936.7	941.1	935.9
155°	950.7	944.1	952.9	957.4	951.5
157.5°	966.2	960.4	967.0	972.2	966.2
160°	979.6	975.1	979.6	984.0	978.8
162.5°	991.4	986.9	990.7	995.8	989.2
165°	1001.7	997.3	999.6	1004.7	999.6
167.5°	1009.9	1005.4	1007.6	1012.9	1006.2
170°	1016.5	1012.1	1013.6	1018.8	1012.1
172.5°	1021.0	1016.5	1018.0	1023.2	1016.5
175°	1024.6	1019.5	1021.0	1026.1	1018.8
177.5°	1026.1	1021.0	1021.8	1026.9	1020.3
180°	1022.5	1022.5	1022.5	1022.5	1022.5

TEST NUMBER: P907779

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US840-FLONL

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	9.22	10.20	10.06	11.07	12.15	8.77	9.76	9.61	10.62	11.70
	3H	10.89	11.78	11.74	12.65	13.76	10.40	11.29	11.25	12.16	13.27
	4H	11.49	12.32	12.36	13.20	14.32	10.99	11.83	11.86	12.71	13.83
	6H	11.90	12.67	12.78	13.56	14.69	11.40	12.17	12.28	13.06	14.19
	8H	12.01	12.74	12.90	13.65	14.78	11.51	12.24	12.40	13.15	14.28
	12H	12.06	12.76	12.96	13.66	14.82	11.55	12.25	12.45	13.15	14.31
4H	2H	9.69	10.53	10.57	11.41	12.53	9.34	10.17	10.21	11.05	12.17
	3H	11.58	12.27	12.46	13.19	14.32	11.17	11.87	12.05	12.78	13.91
	4H	12.30	12.94	13.20	13.84	15.00	11.88	12.51	12.77	13.42	14.58
	6H	12.83	13.38	13.74	14.31	15.47	12.40	12.95	13.31	13.88	15.04
	8H	12.98	13.50	13.90	14.42	15.60	12.55	13.06	13.46	13.99	15.16
	12H	13.07	13.53	14.00	14.47	15.65	12.62	13.08	13.55	14.02	15.20
8H	4H	12.51	13.02	13.42	13.95	15.12	12.13	12.65	13.05	13.57	14.75
	6H	13.15	13.58	14.09	14.54	15.72	12.77	13.19	13.71	14.16	15.33
	8H	13.38	13.75	14.33	14.71	15.90	12.98	13.36	13.94	14.32	15.51
	12H	13.52	13.85	14.47	14.80	16.04	13.11	13.44	14.06	14.39	15.63
12H	4H	12.50	12.96	13.43	13.91	15.09	12.13	12.60	13.07	13.54	14.72
	6H	13.18	13.56	14.13	14.52	15.71	12.81	13.19	13.76	14.15	15.34
	8H	13.43	13.77	14.39	14.72	15.96	13.05	13.39	14.01	14.34	15.58