

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: P918634

Luminaire Tested: DFN2DIP-4P3F0-060D050US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918634
REPORT IS A COMBINATION OF REPORTS P899067 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D050US935-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

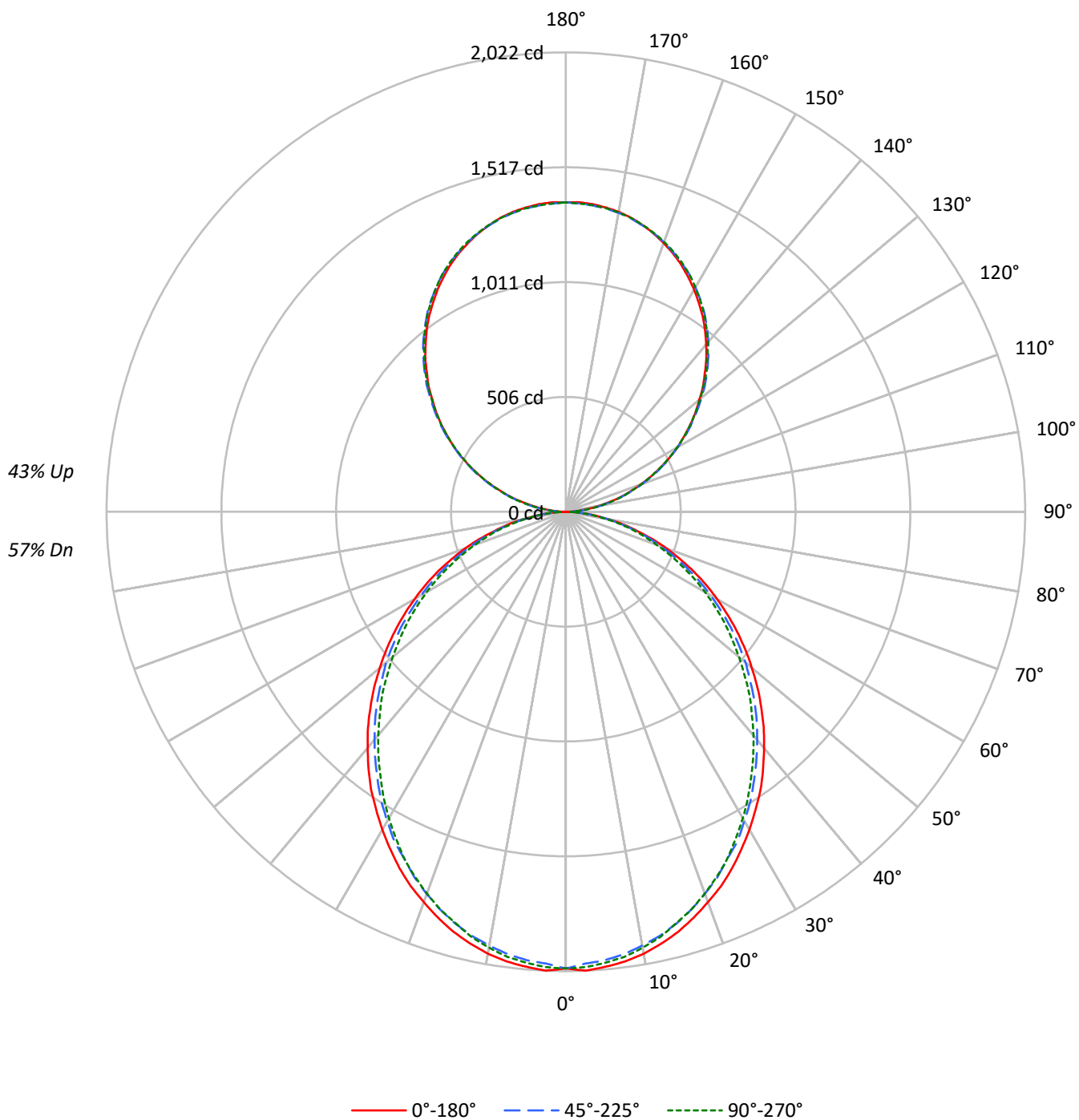
Lumens per Lamp: N/A
Luminaire Lumens: 8924.2 lumens
Efficiency: N/A
Efficacy: 89.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	56	54	53
2	91	83	77	72	84	78	72	67	67	63	60	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	41	38
4	76	65	57	51	70	61	53	48	53	47	43	46	41	38	39	36	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	32	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	23	30	24	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2291	2291	2291
5°	2293	2257	2273
10°	2273	2225	2242
15°	2238	2187	2193
20°	2191	2135	2143
25°	2145	2072	2085
30°	2087	2014	2012
35°	2032	1946	1935
40°	1965	1877	1861
45°	1898	1808	1786
50°	1824	1735	1699
55°	1747	1650	1619
60°	1660	1551	1526
65°	1564	1447	1418
70°	1443	1320	1301
75°	1274	1169	1192
80°	1071	975	985
85°	754	646	645

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1898 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.2	2.1
10°-20°	532.3	6.0
20°-30°	782.3	8.8
30°-40°	908.6	10.2
40°-50°	907.5	10.2
50°-60°	791.3	8.9
60°-70°	584.9	6.6
70°-80°	330.9	3.7
80°-90°	91.2	1.0
90°-100°	84.2	0.9
100°-110°	267.7	3.0
110°-120°	458.1	5.1
120°-130°	602.5	6.8
130°-140°	676.3	7.6
140°-150°	663.1	7.4
150°-160°	556.3	6.2
160°-170°	368.9	4.1
170°-180°	128.9	1.4
0°-30°	1503.8	16.9
0°-40°	2412.4	27.0
0°-60°	4111.1	46.1
0°-90°	5118.2	57.4
90°-120°	810.0	9.1
90°-150°	2751.9	30.8
90°-180°	3806.0	42.6
0°-180°	8924.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2010	2010	2010	2010	2010	
5°	2010	2002	1981	1997	1993	191
15°	1914	1902	1877	1885	1875	539
25°	1732	1716	1684	1687	1684	797
35°	1494	1475	1444	1432	1422	933
45°	1216	1202	1173	1152	1144	938
55°	920	908	885	862	852	823
65°	620	609	590	572	562	614
75°	325	321	311	300	304	347
85°	79	77	75	70	68	88
90°	1	15	40	38	39	9
95°	60	72	73	73	72	67
105°	247	250	253	255	255	261
115°	460	466	464	463	460	455
125°	669	679	676	672	671	598
135°	865	878	880	879	876	669
145°	1050	1058	1065	1066	1061	656
155°	1201	1204	1208	1213	1210	553
165°	1306	1305	1305	1313	1307	368
175°	1359	1356	1353	1362	1354	129
180°	1362	1362	1362	1362	1362	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2010.1	2010.1	2010.1	2010.1	2010.1
2.5°	2021.8	2012.2	1990.8	2010.1	2006.4
5°	2010.1	2002.5	1981.2	1996.6	1992.9
7.5°	1996.6	1985.1	1963.8	1979.3	1975.5
10°	1975.5	1962.0	1938.7	1954.1	1948.4
12.5°	1946.4	1934.8	1911.7	1921.3	1917.4
15°	1913.5	1902.0	1876.8	1884.6	1875.0
17.5°	1872.9	1861.5	1836.3	1845.8	1836.3
20°	1828.4	1817.0	1789.8	1795.6	1788.0
22.5°	1784.2	1766.7	1741.5	1741.5	1737.6
25°	1731.8	1716.5	1683.6	1687.3	1683.6
27.5°	1673.8	1660.3	1635.2	1629.5	1619.9
30°	1616.0	1600.3	1571.5	1565.7	1557.9
32.5°	1554.0	1542.6	1511.6	1499.9	1492.1
35°	1494.2	1474.9	1443.9	1432.2	1422.5
37.5°	1426.5	1409.0	1378.1	1364.5	1354.9
40°	1356.9	1341.3	1310.4	1293.2	1285.4
42.5°	1289.3	1273.7	1242.9	1223.5	1211.9
45°	1215.9	1202.3	1173.2	1152.1	1144.3
47.5°	1144.3	1130.7	1099.8	1078.5	1066.9
50°	1068.8	1059.2	1032.2	1005.0	995.4
52.5°	995.4	981.9	956.8	935.6	922.0
55°	920.1	908.4	885.3	862.1	852.5
57.5°	844.7	835.1	809.9	786.7	778.9
60°	769.2	761.6	734.6	713.3	707.5
62.5°	695.8	682.3	663.0	643.7	635.9
65°	620.5	608.9	589.6	572.1	562.5
67.5°	543.2	533.4	516.2	502.7	494.8
70°	471.7	463.9	446.4	432.9	425.3
72.5°	398.2	390.5	380.8	367.3	361.5
75°	324.6	321.0	311.1	299.6	303.5
77.5°	259.0	251.2	247.3	241.6	235.8
80°	193.4	191.3	187.4	181.7	177.8
82.5°	131.5	131.5	129.6	121.8	121.8
85°	79.1	77.3	75.4	69.5	67.7
87.5°	34.9	31.0	27.0	21.4	19.3
90°	1.2	14.8	40.2	37.8	39.0
92.5°	25.5	34.4	35.7	36.9	36.9
95°	59.9	71.5	73.4	73.4	71.5
97.5°	99.7	110.4	114.9	114.9	114.9
100°	145.7	155.2	158.4	158.4	157.2
102.5°	194.2	201.1	205.6	206.9	205.6
105°	247.1	250.4	252.9	254.9	254.9
107.5°	299.6	304.5	304.5	305.4	299.6
110°	350.5	357.1	357.1	357.1	353.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	405.5	412.5	411.3	408.0	405.5
115°	459.7	466.3	464.3	463.0	459.7
117.5°	513.5	522.5	516.8	513.5	510.2
120°	567.7	576.7	567.7	567.7	564.0
122.5°	616.9	628.4	622.7	619.4	616.9
125°	668.7	678.9	675.6	671.9	670.7
127.5°	719.1	731.8	727.4	722.4	719.1
130°	766.4	781.1	779.0	776.6	772.1
132.5°	819.3	830.8	831.6	825.9	822.6
135°	864.9	877.5	880.0	878.8	875.5
137.5°	915.8	926.0	928.1	927.2	922.3
140°	960.4	970.8	976.5	976.5	972.0
142.5°	1006.4	1016.8	1020.0	1021.2	1016.8
145°	1050.0	1058.2	1064.7	1066.0	1061.4
147.5°	1089.0	1099.2	1104.1	1106.2	1101.6
150°	1129.2	1136.2	1140.6	1144.4	1140.6
152.5°	1164.9	1171.9	1177.6	1182.2	1177.6
155°	1200.6	1203.8	1207.5	1213.3	1209.6
157.5°	1231.4	1233.8	1235.9	1244.1	1238.4
160°	1258.9	1261.4	1262.6	1269.5	1264.6
162.5°	1284.4	1284.4	1285.6	1293.4	1287.6
165°	1306.1	1304.8	1304.8	1313.1	1307.3
167.5°	1325.8	1322.1	1322.1	1330.3	1324.6
170°	1340.6	1337.3	1336.1	1344.3	1337.3
172.5°	1350.8	1347.5	1346.3	1354.5	1347.5
175°	1359.1	1355.7	1353.3	1361.5	1354.5
177.5°	1363.6	1360.3	1357.8	1364.8	1357.8
180°	1361.5	1361.5	1361.5	1361.5	1361.5

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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	10.77	11.70	11.66	12.61	13.78	10.33	11.26	11.22	12.17	13.33
	3H	12.43	13.27	13.33	14.19	15.38	11.94	12.78	12.84	13.70	14.88
	4H	13.02	13.81	13.94	14.74	15.93	12.52	13.32	13.44	14.24	15.44
	6H	13.42	14.15	14.35	15.08	16.29	12.92	13.65	13.85	14.58	15.79
	8H	13.52	14.22	14.46	15.17	16.38	13.02	13.72	13.96	14.67	15.87
	12H	13.57	14.23	14.52	15.18	16.41	13.06	13.72	14.01	14.67	15.90
4H	2H	11.24	12.03	12.16	12.95	14.15	10.88	11.67	11.80	12.60	13.79
	3H	13.10	13.76	14.04	14.72	15.93	12.69	13.35	13.63	14.31	15.52
	4H	13.82	14.42	14.76	15.37	16.61	13.39	13.99	14.34	14.95	16.18
	6H	14.33	14.85	15.29	15.83	17.06	13.90	14.42	14.86	15.39	16.63
	8H	14.48	14.97	15.44	15.93	17.18	14.04	14.53	15.00	15.50	16.75
	12H	14.55	14.99	15.53	15.98	17.23	14.10	14.54	15.08	15.53	16.79
8H	4H	14.01	14.50	14.97	15.47	16.72	13.64	14.12	14.60	15.09	16.34
	6H	14.64	15.04	15.63	16.06	17.30	14.26	14.66	15.24	15.67	16.92
	8H	14.86	15.22	15.85	16.21	17.48	14.47	14.82	15.46	15.82	17.09
	12H	14.99	15.30	15.99	16.30	17.61	14.58	14.89	15.58	15.89	17.20
12H	4H	14.00	14.44	14.98	15.43	16.68	13.63	14.07	14.61	15.06	16.31
	6H	14.67	15.03	15.67	16.03	17.29	14.30	14.65	15.29	15.65	16.92
	8H	14.91	15.23	15.91	16.22	17.53	14.53	14.84	15.53	15.84	17.15

END OF REPORT