

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: P921322

Luminaire Tested: DFN2DIP-4P3F0-040D050US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921322
REPORT IS A COMBINATION OF REPORTS P899063 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D050US940-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

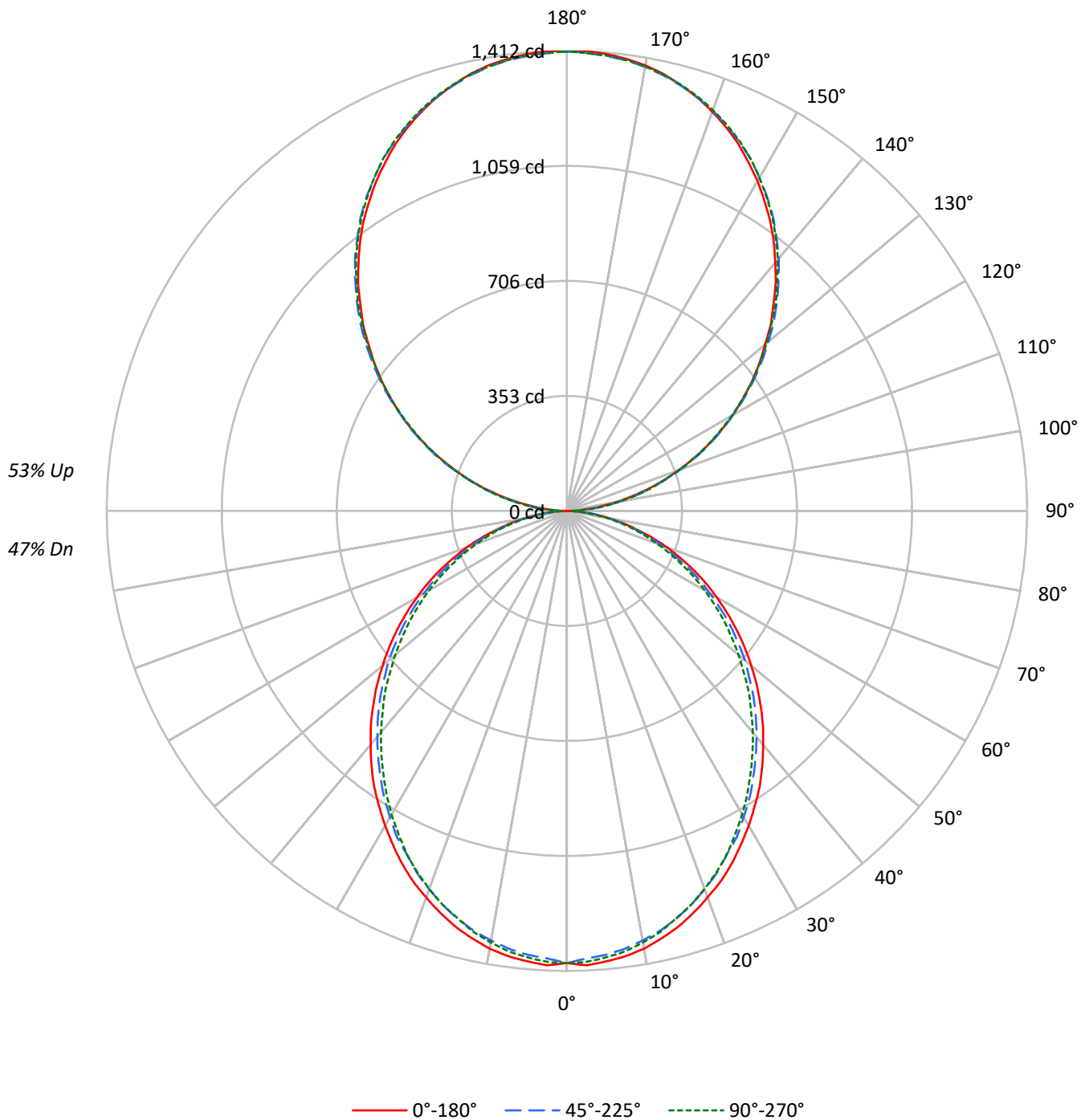
Lumens per Lamp: N/A
Luminaire Lumens: 7477.0 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 75.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	56	52	49	47	42	40	38
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	35	32
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	39	34	37	33	29	30	27	24
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	21
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	21	19
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	47	35	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1582	1582	1582
5°	1583	1559	1570
10°	1569	1537	1548
15°	1545	1510	1514
20°	1513	1474	1480
25°	1481	1431	1440
30°	1441	1391	1389
35°	1403	1344	1336
40°	1357	1296	1285
45°	1310	1248	1233
50°	1260	1198	1173
55°	1206	1140	1118
60°	1146	1071	1054
65°	1080	999	979
70°	996	912	898
75°	880	807	823
80°	740	673	680
85°	521	446	445

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1415 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.7
10°-20°	367.5	4.9
20°-30°	540.1	7.2
30°-40°	627.3	8.4
40°-50°	626.6	8.4
50°-60°	546.3	7.3
60°-70°	403.9	5.4
70°-80°	228.5	3.1
80°-90°	64.3	0.9
90°-100°	87.3	1.2
100°-110°	277.2	3.7
110°-120°	474.5	6.3
120°-130°	624.0	8.3
130°-140°	700.4	9.4
140°-150°	686.8	9.2
150°-160°	576.1	7.7
160°-170°	382.1	5.1
170°-180°	133.5	1.8
0°-30°	1038.3	13.9
0°-40°	1665.6	22.3
0°-60°	2838.5	38.0
0°-90°	3535.2	47.3
90°-120°	838.9	11.2
90°-150°	2850.1	38.1
90°-180°	3942.0	52.7
0°-180°	7477.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	1	15	42	39	40	7
95°	62	74	76	76	74	69
105°	256	259	262	264	264	270
115°	476	483	481	480	476	471
125°	692	703	700	696	695	619
135°	896	909	911	910	907	692
145°	1087	1096	1103	1104	1099	679
155°	1243	1247	1251	1257	1253	572
165°	1353	1351	1351	1360	1354	382
175°	1408	1404	1402	1410	1403	134
180°	1410	1410	1410	1410	1410	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	1.2	15.3	41.6	39.1	40.4
92.5°	26.4	35.7	37.0	38.3	38.3
95°	62.1	74.0	76.1	76.1	74.0
97.5°	103.3	114.3	119.0	119.0	119.0
100°	150.9	160.7	164.1	164.1	162.8
102.5°	201.1	208.3	212.9	214.3	212.9
105°	255.9	259.3	261.9	263.9	263.9
107.5°	310.3	315.4	315.4	316.3	310.3
110°	363.0	369.9	369.9	369.9	366.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	420.0	427.2	426.0	422.6	420.0
115°	476.1	483.0	480.8	479.6	476.1
117.5°	531.8	541.2	535.2	531.8	528.4
120°	587.9	597.3	587.9	587.9	584.1
122.5°	638.9	650.9	644.9	641.5	638.9
125°	692.5	703.1	699.7	695.9	694.6
127.5°	744.8	758.0	753.3	748.1	744.8
130°	793.7	809.0	806.8	804.3	799.6
132.5°	848.6	860.4	861.3	855.3	851.9
135°	895.7	908.8	911.4	910.2	906.8
137.5°	948.4	959.0	961.2	960.3	955.2
140°	994.7	1005.4	1011.3	1011.3	1006.7
142.5°	1042.3	1053.0	1056.4	1057.7	1053.0
145°	1087.4	1095.9	1102.7	1104.0	1099.3
147.5°	1127.8	1138.4	1143.5	1145.7	1140.9
150°	1169.5	1176.7	1181.3	1185.2	1181.3
152.5°	1206.5	1213.7	1219.6	1224.3	1219.6
155°	1243.4	1246.8	1250.6	1256.6	1252.8
157.5°	1275.3	1277.8	1280.0	1288.5	1282.5
160°	1303.8	1306.4	1307.6	1314.8	1309.7
162.5°	1330.2	1330.2	1331.4	1339.5	1333.6
165°	1352.7	1351.4	1351.4	1359.9	1354.0
167.5°	1373.1	1369.2	1369.2	1377.8	1371.8
170°	1388.4	1385.0	1383.8	1392.2	1385.0
172.5°	1399.0	1395.6	1394.4	1402.8	1395.6
175°	1407.6	1404.1	1401.6	1410.1	1402.8
177.5°	1412.2	1408.8	1406.2	1413.5	1406.2
180°	1410.1	1410.1	1410.1	1410.1	1410.1

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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	8.57	9.41	9.55	10.40	11.71	8.13	8.97	9.11	9.96	11.27
	3H	10.23	10.98	11.22	11.98	13.31	9.74	10.49	10.73	11.49	12.82
	4H	10.81	11.52	11.81	12.53	13.87	10.32	11.03	11.32	12.03	13.37
	6H	11.21	11.86	12.22	12.87	14.22	10.71	11.36	11.72	12.37	13.72
	8H	11.31	11.93	12.33	12.96	14.31	10.81	11.43	11.83	12.46	13.80
	12H	11.35	11.95	12.38	12.97	14.34	10.84	11.44	11.87	12.46	13.83
4H	2H	9.03	9.74	10.04	10.74	12.08	8.67	9.38	9.68	10.39	11.73
	3H	10.89	11.48	11.90	12.51	13.87	10.48	11.07	11.50	12.11	13.46
	4H	11.60	12.14	12.62	13.17	14.54	11.17	11.71	12.20	12.74	14.12
	6H	12.10	12.57	13.14	13.62	14.99	11.67	12.14	12.71	13.19	14.56
	8H	12.25	12.69	13.29	13.73	15.12	11.81	12.25	12.85	13.29	14.68
	12H	12.32	12.72	13.38	13.77	15.17	11.87	12.27	12.93	13.32	14.72
8H	4H	11.79	12.22	12.82	13.27	14.65	11.41	11.85	12.45	12.89	14.27
	6H	12.41	12.77	13.47	13.86	15.24	12.03	12.39	13.09	13.47	14.86
	8H	12.63	12.94	13.70	14.01	15.42	12.23	12.55	13.30	13.62	15.02
	12H	12.75	13.03	13.83	14.10	15.54	12.34	12.62	13.42	13.69	15.13
12H	4H	11.77	12.16	12.83	13.22	14.61	11.40	11.80	12.46	12.85	14.25
	6H	12.44	12.76	13.51	13.82	15.23	12.07	12.38	13.13	13.45	14.86
	8H	12.67	12.95	13.75	14.02	15.46	12.29	12.57	13.37	13.64	15.08