

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: P916020

Luminaire Tested: DFN2DIP-4P4F0-070D050US930-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916020
REPORT IS A COMBINATION OF REPORTS P899112 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-070D050US930-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

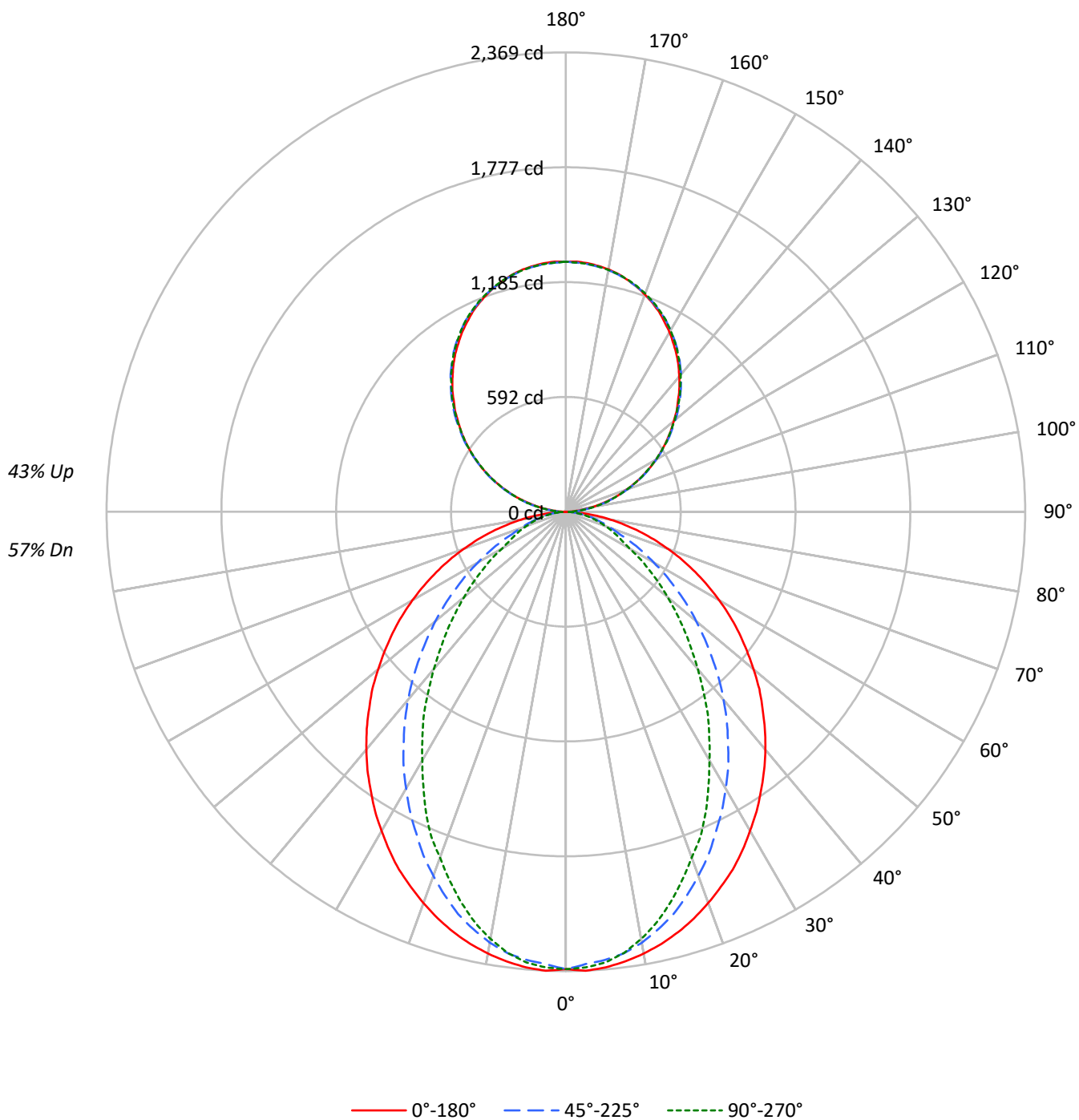
Lumens per Lamp: N/A
Luminaire Lumens: 8458.7 lumens
Efficiency: N/A
Efficacy: 73.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 114.5
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

TEST NUMBER: P916020

CATALOG NUMBER: DFN2DIP-4P4F0-070D050US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916020

CATALOG NUMBER: DFN2DIP-4P4F0-070D050US930-RLLFLL

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	100	96	92	89		93	89	86	83		78	75	73		67	65	63		56	55	54
2	92	84	78	73		85	79	74	69		69	65	61		59	56	54		50	48	47
3	84	75	68	62		78	70	64	59		61	56	52		53	49	46		45	42	40
4	77	66	59	53		72	62	56	50		55	49	45		47	43	40		41	38	35
5	71	60	52	46		66	56	49	44		49	44	39		43	39	35		37	34	31
6	66	54	46	40		61	51	43	38		45	39	35		39	34	31		34	30	28
7	61	49	41	35		57	46	39	34		41	35	31		36	31	28		31	27	25
8	57	44	37	32		53	42	35	30		37	32	28		33	28	25		29	25	22
9	53	41	33	28		49	38	32	27		34	29	25		30	26	23		26	23	20
10	49	37	30	26		46	35	29	25		32	26	23		28	24	21		25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1530	1530	1530
5°	1533	1506	1516
10°	1518	1477	1467
15°	1497	1429	1392
20°	1469	1362	1298
25°	1441	1287	1208
30°	1403	1210	1094
35°	1366	1127	994
40°	1328	1042	878
45°	1285	946	774
50°	1239	850	672
55°	1192	748	574
60°	1137	640	473
65°	1074	531	426
70°	998	429	387
75°	902	379	353
80°	763	320	308
85°	533	216	235

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1285 cd/sqm

TEST NUMBER: P916020

CATALOG NUMBER: DFN2DIP-4P4F0-070D050US930-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.1	2.6
10°-20°	606.9	7.2
20°-30°	852.0	10.1
30°-40°	928.8	11.0
40°-50°	853.6	10.1
50°-60°	670.4	7.9
60°-70°	436.4	5.2
70°-80°	224.6	2.7
80°-90°	61.0	0.7
90°-100°	79.8	0.9
100°-110°	253.5	3.0
110°-120°	433.8	5.1
120°-130°	570.5	6.7
130°-140°	640.4	7.6
140°-150°	627.9	7.4
150°-160°	526.8	6.2
160°-170°	349.3	4.1
170°-180°	122.1	1.4
0°-30°	1679.9	19.9
0°-40°	2608.7	30.8
0°-60°	4132.7	48.9
0°-90°	4854.7	57.4
90°-120°	767.0	9.1
90°-150°	2605.8	30.8
90°-180°	3604.0	42.6
0°-180°	8458.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2359	2348	2320	2340	2333	224
15°	2244	2220	2147	2107	2086	632
25°	2036	1968	1827	1740	1708	937
35°	1755	1646	1458	1324	1276	1098
45°	1434	1291	1067	916	864	1108
55°	1091	924	694	566	525	975
65°	736	564	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	1	14	38	36	37	8
95°	57	68	70	70	68	63
105°	234	237	240	241	241	247
115°	435	442	440	438	435	431
125°	633	643	640	636	635	566
135°	819	831	833	832	829	633
145°	994	1002	1008	1009	1005	621
155°	1137	1140	1144	1149	1145	523
165°	1237	1236	1236	1243	1238	349
175°	1287	1284	1282	1289	1283	122
180°	1289	1289	1289	1289	1289	

TEST NUMBER: P916020

CATALOG NUMBER: DFN2DIP-4P4F0-070D050US930-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2358.7	2358.7	2358.7	2358.7	2358.7
2.5°	2369.3	2358.7	2335.2	2356.7	2352.4
5°	2358.7	2348.1	2320.3	2339.5	2333.1
7.5°	2339.5	2326.8	2296.9	2305.3	2294.7
10°	2313.9	2299.0	2256.3	2249.8	2237.1
12.5°	2281.9	2262.7	2205.0	2192.3	2168.7
15°	2243.5	2219.9	2147.4	2106.9	2085.6
17.5°	2198.6	2164.5	2074.8	2027.8	1993.6
20°	2147.4	2104.6	1998.0	1944.7	1897.6
22.5°	2092.0	2042.8	1918.9	1846.4	1814.5
25°	2036.5	1968.0	1827.2	1739.8	1707.6
27.5°	1970.3	1897.6	1741.8	1641.5	1592.4
30°	1899.9	1818.6	1647.8	1539.1	1481.4
32.5°	1831.5	1733.2	1558.4	1430.2	1376.7
35°	1754.7	1645.8	1458.1	1323.6	1276.4
37.5°	1680.0	1562.4	1364.1	1216.6	1163.4
40°	1600.9	1473.0	1265.8	1114.3	1058.7
42.5°	1519.9	1383.3	1167.7	1009.6	956.4
45°	1434.5	1291.4	1067.4	915.7	864.5
47.5°	1353.4	1201.9	971.3	819.6	772.7
50°	1263.7	1112.2	877.3	729.9	685.3
52.5°	1176.1	1015.9	787.7	646.8	606.3
55°	1090.7	924.2	693.7	565.7	525.2
57.5°	1003.3	832.5	610.6	491.0	456.8
60°	913.6	742.8	522.9	414.3	380.0
62.5°	826.1	655.4	448.2	345.8	328.8
65°	736.5	563.5	371.4	299.0	292.4
67.5°	651.1	478.1	299.0	262.4	256.2
70°	561.4	394.9	247.5	226.2	217.6
72.5°	476.1	318.0	207.0	190.0	185.7
75°	392.7	243.2	170.7	155.8	153.8
77.5°	309.6	172.8	134.5	125.9	121.6
80°	232.6	123.8	102.4	94.0	94.0
82.5°	162.2	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.2	17.0	17.0	14.9	14.9
90°	1.1	14.0	38.1	35.8	36.9
92.5°	24.1	32.6	33.8	35.0	35.0
95°	56.7	67.7	69.5	69.5	67.7
97.5°	94.4	104.5	108.8	108.8	108.8
100°	137.9	146.9	150.0	150.0	148.9
102.5°	183.8	190.5	194.7	195.9	194.7
105°	234.0	237.1	239.5	241.3	241.3
107.5°	283.7	288.4	288.4	289.2	283.7
110°	331.9	338.2	338.2	338.2	335.0

TEST NUMBER: P916020

CATALOG NUMBER: DFN2DIP-4P4F0-070D050US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	384.0	390.6	389.5	386.4	384.0
115°	435.3	441.6	439.6	438.5	435.3
117.5°	486.2	494.8	489.3	486.2	483.1
120°	537.5	546.1	537.5	537.5	534.0
122.5°	584.2	595.1	589.6	586.5	584.2
125°	633.2	642.9	639.8	636.3	635.1
127.5°	680.9	693.0	688.8	684.0	680.9
130°	725.7	739.6	737.7	735.4	731.1
132.5°	775.8	786.7	787.5	782.0	778.9
135°	819.0	831.0	833.3	832.2	829.1
137.5°	867.2	876.9	878.8	878.0	873.3
140°	909.5	919.2	924.6	924.6	920.4
142.5°	953.0	962.8	965.9	967.0	962.8
145°	994.3	1002.0	1008.2	1009.4	1005.1
147.5°	1031.2	1040.9	1045.5	1047.5	1043.2
150°	1069.3	1075.9	1080.1	1083.6	1080.1
152.5°	1103.1	1109.7	1115.1	1119.4	1115.1
155°	1136.9	1140.0	1143.5	1148.9	1145.4
157.5°	1166.0	1168.3	1170.3	1178.1	1172.6
160°	1192.0	1194.4	1195.6	1202.2	1197.5
162.5°	1216.2	1216.2	1217.3	1224.7	1219.3
165°	1236.8	1235.6	1235.6	1243.4	1237.9
167.5°	1255.4	1251.9	1251.9	1259.7	1254.3
170°	1269.4	1266.3	1265.2	1272.9	1266.3
172.5°	1279.1	1276.0	1274.9	1282.6	1276.0
175°	1286.9	1283.8	1281.5	1289.2	1282.6
177.5°	1291.2	1288.1	1285.7	1292.3	1285.7
180°	1289.2	1289.2	1289.2	1289.2	1289.2

TEST NUMBER: P916020

CATALOG NUMBER: DFN2DIP-4P4F0-070D050US930-RLLFLL

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	9.31	10.20	10.20	11.11	12.28	5.27	6.16	6.17	7.07	8.24
	3H	10.99	11.79	11.91	12.72	13.91	6.46	7.26	7.37	8.18	9.37
	4H	11.61	12.37	12.54	13.29	14.49	6.92	7.67	7.84	8.60	9.80
	6H	12.04	12.74	12.98	13.67	14.88	7.24	7.94	8.18	8.87	10.08
	8H	12.17	12.83	13.11	13.78	14.99	7.34	8.00	8.28	8.95	10.16
	12H	12.24	12.87	13.19	13.81	15.05	7.38	8.01	8.33	8.96	10.19
4H	2H	9.33	10.09	10.26	11.02	12.22	5.87	6.63	6.80	7.56	8.76
	3H	11.17	11.80	12.11	12.76	13.97	7.23	7.86	8.17	8.82	10.03
	4H	11.87	12.45	12.82	13.40	14.64	7.78	8.36	8.73	9.31	10.55
	6H	12.40	12.89	13.36	13.87	15.10	8.21	8.70	9.17	9.68	10.92
	8H	12.58	13.04	13.54	14.01	15.26	8.34	8.80	9.31	9.77	11.02
	12H	12.68	13.09	13.66	14.08	15.34	8.41	8.82	9.39	9.81	11.07
8H	4H	11.85	12.31	12.81	13.28	14.53	8.07	8.53	9.04	9.50	10.75
	6H	12.42	12.80	13.41	13.81	15.06	8.60	8.97	9.59	9.99	11.24
	8H	12.64	12.98	13.64	13.98	15.25	8.79	9.12	9.79	10.12	11.39
	12H	12.79	13.08	13.79	14.08	15.39	8.91	9.21	9.91	10.20	11.52
12H	4H	11.80	12.21	12.79	13.20	14.46	8.08	8.49	9.06	9.48	10.74
	6H	12.40	12.73	13.40	13.73	15.00	8.65	8.98	9.65	9.98	11.25
	8H	12.62	12.92	13.63	13.91	15.23	8.86	9.16	9.86	10.15	11.47

END OF REPORT