

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: P918540

Luminaire Tested: DFN2DIP-4P2F0-040D040US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918540
REPORT IS A COMBINATION OF REPORTS P899028 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D040US935-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

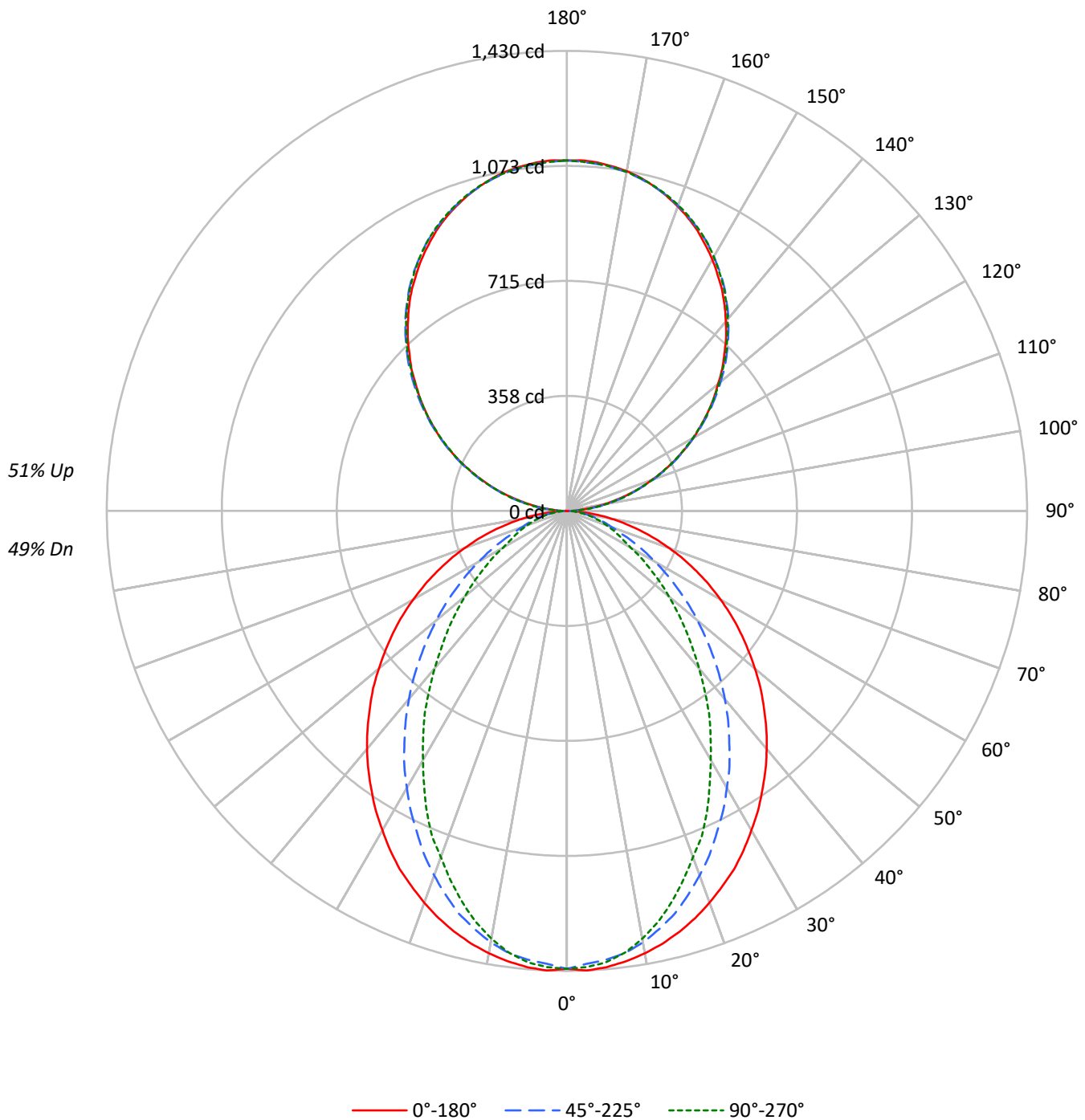
Lumens per Lamp: N/A
Luminaire Lumens: 5975.3 lumens
Efficiency: N/A
Efficacy: 81.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 73.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918540

CATALOG NUMBER: DFN2DIP-4P2F0-040D040US935-RLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-4P2F0-040D040US935-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3564	3564	3564
5°	3563	3499	3524
10°	3521	3421	3404
15°	3465	3299	3221
20°	3394	3135	2999
25°	3321	2952	2784
30°	3225	2766	2515
35°	3131	2567	2277
40°	3035	2362	2007
45°	2924	2135	1762
50°	2809	1907	1523
55°	2688	1665	1294
60°	2548	1414	1060
65°	2386	1158	947
70°	2190	921	849
75°	1942	795	761
80°	1589	642	642
85°	1026	396	454

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2924 cd/sqm

TEST NUMBER: P918540

CATALOG NUMBER: DFN2DIP-4P2F0-040D040US935-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.4	2.2
10°-20°	366.2	6.1
20°-30°	514.2	8.6
30°-40°	560.5	9.4
40°-50°	515.1	8.6
50°-60°	404.5	6.8
60°-70°	263.3	4.4
70°-80°	135.6	2.3
80°-90°	37.7	0.6
90°-100°	67.4	1.1
100°-110°	214.2	3.6
110°-120°	366.5	6.1
120°-130°	482.0	8.1
130°-140°	541.0	9.1
140°-150°	530.5	8.9
150°-160°	445.0	7.4
160°-170°	295.1	4.9
170°-180°	103.2	1.7
0°-30°	1013.8	17.0
0°-40°	1574.2	26.3
0°-60°	2493.9	41.7
0°-90°	2930.5	49.0
90°-120°	648.0	10.8
90°-150°	2201.5	36.8
90°-180°	3045.0	51.0
0°-180°	5975.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1423	1423	1423	1423	1423	
5°	1423	1417	1400	1412	1408	135
15°	1354	1340	1296	1271	1259	382
25°	1229	1188	1103	1050	1030	565
35°	1059	993	880	799	770	663
45°	866	779	644	553	522	668
55°	658	558	419	341	317	588
65°	444	340	224	180	176	441
75°	237	147	103	94	93	251
85°	55	28	24	24	24	64
90°	1	12	32	30	31	6
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

TEST NUMBER: P918540

CATALOG NUMBER: DFN2DIP-4P2F0-040D040US935-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1423.4	1423.4	1423.4	1423.4	1423.4
2.5°	1429.9	1423.4	1409.2	1422.2	1419.5
5°	1423.4	1416.9	1400.2	1411.8	1408.0
7.5°	1411.8	1404.1	1386.1	1391.1	1384.7
10°	1396.4	1387.3	1361.6	1357.6	1350.0
12.5°	1377.1	1365.5	1330.6	1322.9	1308.7
15°	1353.8	1339.6	1295.9	1271.4	1258.6
17.5°	1326.8	1306.1	1252.0	1223.7	1203.1
20°	1295.9	1270.1	1205.7	1173.5	1145.1
22.5°	1262.4	1232.8	1158.0	1114.2	1095.0
25°	1228.9	1187.7	1102.6	1049.9	1030.4
27.5°	1189.0	1145.1	1051.1	990.6	960.9
30°	1146.5	1097.4	994.4	928.8	894.0
32.5°	1105.3	1045.9	940.4	863.1	830.8
35°	1058.9	993.2	879.9	798.7	770.2
37.5°	1013.8	942.9	823.1	734.2	702.1
40°	966.1	888.9	763.9	672.4	638.9
42.5°	917.1	834.7	704.6	609.2	577.1
45°	865.6	779.3	644.1	552.6	521.7
47.5°	816.7	725.3	586.2	494.6	466.3
50°	762.6	671.1	529.4	440.5	413.5
52.5°	709.7	613.1	475.4	390.3	365.8
55°	658.2	557.8	418.6	341.4	316.9
57.5°	605.5	502.4	368.4	296.3	275.7
60°	551.3	448.2	315.6	249.9	229.4
62.5°	498.6	395.5	270.4	208.7	198.5
65°	444.4	340.0	224.1	180.4	176.4
67.5°	393.0	288.5	180.4	158.4	154.5
70°	338.8	238.3	149.4	136.6	131.3
72.5°	287.3	191.9	124.9	114.7	112.1
75°	236.9	146.8	103.1	94.0	92.8
77.5°	186.8	104.3	81.2	76.0	73.4
80°	140.3	74.7	61.7	56.7	56.7
82.5°	97.9	50.3	42.5	39.9	39.9
85°	55.4	28.3	24.5	24.5	24.5
87.5°	20.7	10.2	10.2	9.0	9.0
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1

TEST NUMBER: P918540

CATALOG NUMBER: DFN2DIP-4P2F0-040D040US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	11.34	12.16	12.31	13.14	14.43	7.30	8.12	8.27	9.10	10.39
	3H	12.99	13.73	13.97	14.72	16.03	8.46	9.20	9.45	10.19	11.50
	4H	13.58	14.28	14.58	15.27	16.59	8.90	9.59	9.90	10.59	11.91
	6H	13.99	14.63	14.99	15.62	16.95	9.20	9.84	10.21	10.84	12.17
	8H	14.10	14.71	15.11	15.73	17.05	9.28	9.89	10.29	10.91	12.23
	12H	14.15	14.73	15.17	15.74	17.09	9.32	9.89	10.33	10.90	12.25
4H	2H	11.35	12.04	12.35	13.04	14.36	7.88	8.57	8.88	9.57	10.89
	3H	13.15	13.73	14.16	14.75	16.08	9.20	9.78	10.22	10.81	12.14
	4H	13.82	14.35	14.84	15.37	16.72	9.73	10.26	10.75	11.28	12.63
	6H	14.32	14.77	15.35	15.81	17.16	10.13	10.58	11.16	11.62	12.97
	8H	14.48	14.90	15.51	15.93	17.30	10.25	10.67	11.28	11.70	13.07
	12H	14.56	14.94	15.61	15.99	17.36	10.30	10.68	11.35	11.73	13.10
8H	4H	13.79	14.21	14.82	15.24	16.61	10.00	10.42	11.03	11.46	12.82
	6H	14.33	14.68	15.38	15.75	17.11	10.49	10.84	11.54	11.91	13.28
	8H	14.53	14.84	15.59	15.89	17.28	10.66	10.97	11.73	12.03	13.41
	12H	14.65	14.92	15.71	15.97	17.40	10.77	11.04	11.83	12.09	13.52
12H	4H	13.74	14.12	14.79	15.17	16.54	10.00	10.38	11.05	11.43	12.80
	6H	14.30	14.61	15.36	15.67	17.05	10.53	10.84	11.59	11.90	13.28
	8H	14.50	14.77	15.57	15.83	17.25	10.72	11.00	11.79	12.05	13.47