

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: P918529

Luminaire Tested: DFN2DIP-4P2F0-030D040US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918529
REPORT IS A COMBINATION OF REPORTS P900546 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D040US935-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

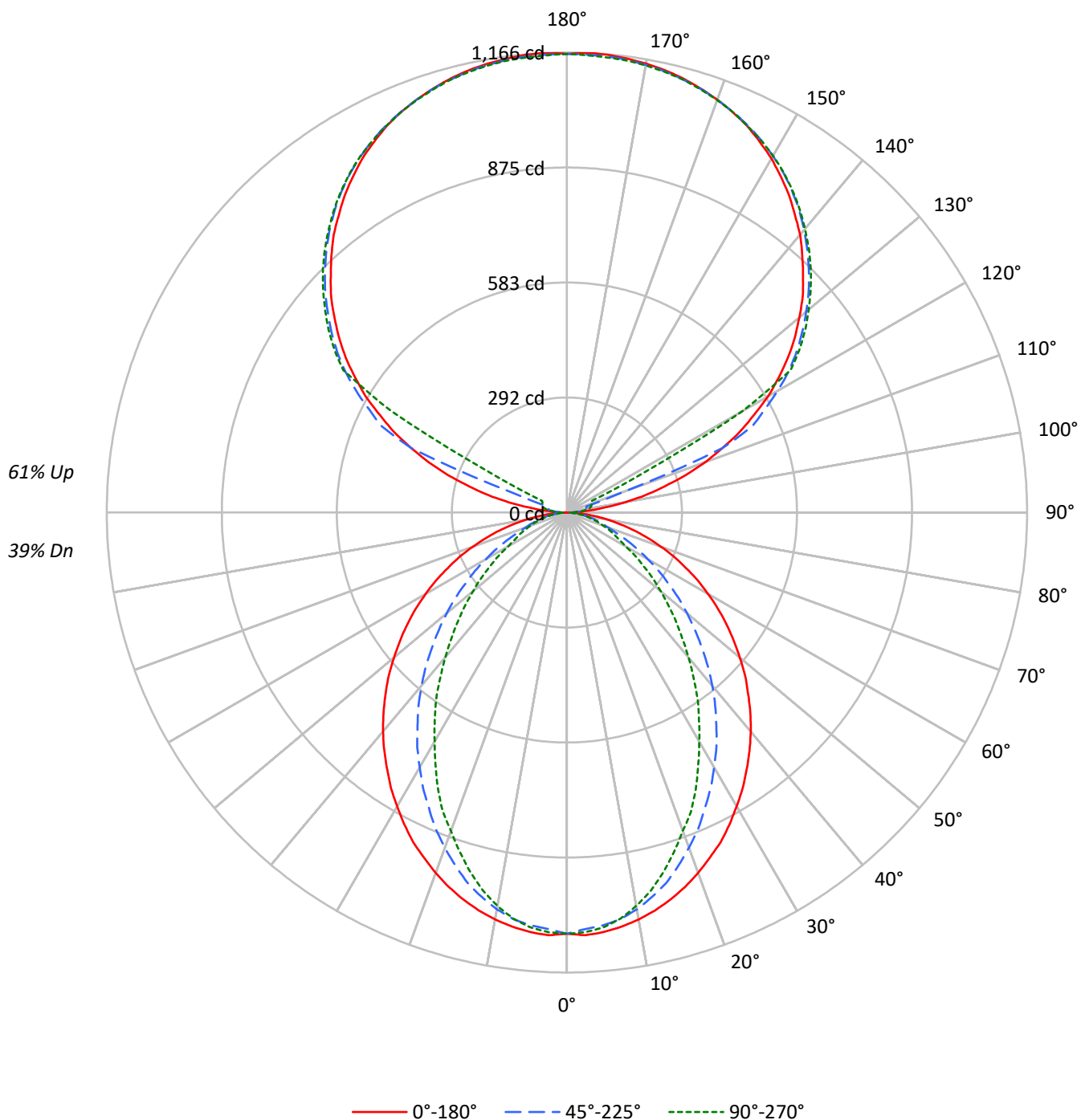
Lumens per Lamp: N/A
Luminaire Lumens: 5605.0 lumens
Efficiency: N/A
Efficacy: 93.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 60.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918529

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US935-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918529

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US935-RLLONL

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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2673	2673	2673
5°	2672	2624	2643
10°	2640	2566	2553
15°	2599	2474	2416
20°	2545	2351	2249
25°	2490	2214	2088
30°	2419	2075	1886
35°	2348	1925	1708
40°	2276	1771	1505
45°	2193	1602	1322
50°	2107	1431	1142
55°	2016	1249	971
60°	1911	1060	795
65°	1790	869	710
70°	1643	691	637
75°	1457	596	571
80°	1192	481	481
85°	769	295	339

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2193 cd/sqm

TEST NUMBER: P918529

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US935-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.1	1.8
10°-20°	274.7	4.9
20°-30°	385.6	6.9
30°-40°	420.3	7.5
40°-50°	386.3	6.9
50°-60°	303.4	5.4
60°-70°	197.5	3.5
70°-80°	101.7	1.8
80°-90°	28.0	0.5
90°-100°	38.3	0.7
100°-110°	142.9	2.5
110°-120°	378.9	6.8
120°-130°	628.5	11.2
130°-140°	667.6	11.9
140°-150°	620.4	11.1
150°-160°	498.8	8.9
160°-170°	321.4	5.7
170°-180°	110.6	2.0
0°-30°	760.3	13.6
0°-40°	1180.7	21.1
0°-60°	1870.4	33.4
0°-90°	2197.6	39.2
90°-120°	560.1	10.0
90°-150°	2476.6	44.2
90°-180°	3407.0	60.8
0°-180°	5605.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1068	1068	1068	1068	1068	
5°	1068	1063	1050	1059	1056	101
15°	1015	1005	972	954	944	286
25°	922	891	827	787	773	424
35°	794	745	660	599	578	497
45°	649	584	483	414	391	501
55°	494	418	314	256	238	441
65°	333	255	168	135	132	330
75°	178	110	77	70	70	188
85°	42	21	18	18	18	48
90°	1	10	17	21	23	5
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	

TEST NUMBER: P918529

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US935-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1067.6	1067.6	1067.6	1067.6	1067.6
2.5°	1072.4	1067.6	1056.9	1066.6	1064.7
5°	1067.6	1062.7	1050.2	1058.9	1055.9
7.5°	1058.9	1053.1	1039.6	1043.4	1038.5
10°	1047.2	1040.5	1021.2	1018.2	1012.5
12.5°	1032.8	1024.1	998.0	992.2	981.5
15°	1015.4	1004.7	971.9	953.6	943.9
17.5°	995.1	979.6	939.0	917.8	902.3
20°	971.9	952.5	904.2	880.2	858.8
22.5°	946.8	924.5	868.5	835.7	821.2
25°	921.7	890.7	827.0	787.4	772.8
27.5°	891.7	858.8	788.3	743.0	720.7
30°	859.9	823.1	745.8	696.6	670.5
32.5°	828.9	784.5	705.3	647.3	623.1
35°	794.2	744.8	659.9	599.0	577.7
37.5°	760.3	707.1	617.3	550.6	526.6
40°	724.6	666.7	572.9	504.3	479.2
42.5°	687.9	626.1	528.5	456.9	432.8
45°	649.3	584.4	483.1	414.4	391.2
47.5°	612.5	544.0	439.6	370.9	349.7
50°	572.0	503.3	397.1	330.4	310.1
52.5°	532.3	459.9	356.5	292.7	274.4
55°	493.6	418.3	313.9	256.1	237.7
57.5°	454.1	376.8	276.4	222.2	206.7
60°	413.5	336.2	236.7	187.4	172.0
62.5°	373.9	296.6	202.9	156.5	148.9
65°	333.3	255.0	168.1	135.3	132.3
67.5°	294.7	216.4	135.3	118.8	115.9
70°	254.1	178.7	112.0	102.4	98.5
72.5°	215.4	143.9	93.7	86.0	84.0
75°	177.7	110.1	77.3	70.5	69.6
77.5°	140.1	78.2	60.9	57.0	55.0
80°	105.3	56.1	46.3	42.5	42.5
82.5°	73.4	37.7	31.9	30.0	30.0
85°	41.5	21.2	18.3	18.3	18.3
87.5°	15.5	7.7	7.7	6.8	6.8
90°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4

TEST NUMBER: P918529

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US935-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3

TEST NUMBER: P918529

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US935-RLONL

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	9.33	10.08	10.38	11.13	12.55	5.29	6.04	6.34	7.09	8.51
	3H	10.98	11.65	12.04	12.71	14.15	6.45	7.12	7.51	8.18	9.62
	4H	11.57	12.20	12.64	13.26	14.71	6.88	7.52	7.96	8.58	10.03
	6H	11.97	12.55	13.05	13.62	15.07	7.18	7.77	8.26	8.83	10.29
	8H	12.08	12.64	13.17	13.72	15.17	7.26	7.82	8.35	8.90	10.35
	12H	12.13	12.66	13.22	13.73	15.21	7.29	7.82	8.38	8.89	10.37
4H	2H	9.33	9.97	10.41	11.03	12.48	5.86	6.50	6.94	7.56	9.01
	3H	11.13	11.66	12.21	12.75	14.20	7.18	7.71	8.27	8.80	10.26
	4H	11.80	12.28	12.89	13.36	14.84	7.71	8.19	8.80	9.27	10.75
	6H	12.29	12.70	13.39	13.81	15.28	8.10	8.52	9.20	9.62	11.09
	8H	12.45	12.84	13.55	13.93	15.42	8.22	8.60	9.32	9.70	11.19
	12H	12.53	12.88	13.64	13.99	15.48	8.27	8.62	9.38	9.72	11.22
8H	4H	11.76	12.14	12.85	13.24	14.73	7.97	8.36	9.07	9.45	10.94
	6H	12.29	12.61	13.41	13.75	15.24	8.46	8.78	9.58	9.91	11.40
	8H	12.50	12.77	13.62	13.89	15.40	8.63	8.91	9.76	10.03	11.53
	12H	12.61	12.86	13.74	13.97	15.52	8.73	8.98	9.86	10.09	11.63
12H	4H	11.70	12.05	12.82	13.16	14.65	7.97	8.32	9.08	9.42	10.92
	6H	12.27	12.55	13.39	13.67	15.17	8.50	8.78	9.63	9.90	11.40
	8H	12.47	12.71	13.60	13.83	15.37	8.69	8.93	9.82	10.05	11.59

END OF REPORT