

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: P910336

Luminaire Tested: DFN2DIP-4P2F0-030D020US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910336
REPORT IS A COMBINATION OF REPORTS P899014 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D020US850-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

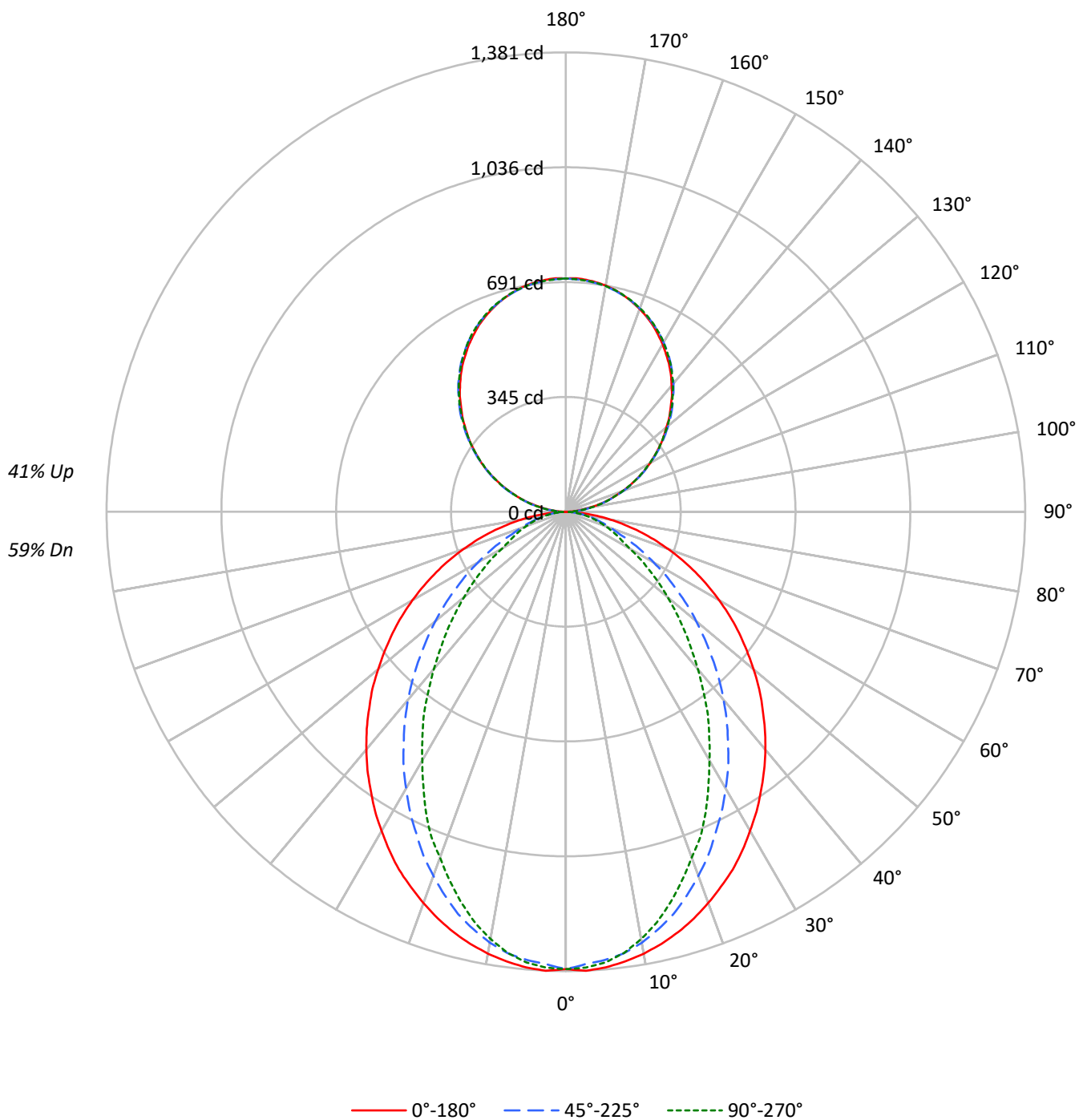
Lumens per Lamp: N/A
Luminaire Lumens: 4790.9 lumens
Efficiency: N/A
Efficacy: 110.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 43.3
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: P910336

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US850-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910336

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US850-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	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3443	3443	3443
5°	3442	3380	3404
10°	3401	3305	3288
15°	3347	3187	3112
20°	3278	3028	2897
25°	3208	2852	2690
30°	3116	2672	2429
35°	3025	2480	2200
40°	2932	2281	1939
45°	2825	2063	1702
50°	2714	1843	1472
55°	2597	1608	1251
60°	2461	1366	1024
65°	2305	1119	916
70°	2116	890	820
75°	1877	768	735
80°	1535	621	620
85°	991	381	437

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2825 cd/sqm

TEST NUMBER: P910336

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US850-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	2.7
10°-20°	353.8	7.4
20°-30°	496.7	10.4
30°-40°	541.4	11.3
40°-50°	497.6	10.4
50°-60°	390.8	8.2
60°-70°	254.4	5.3
70°-80°	130.9	2.7
80°-90°	35.4	0.7
90°-100°	43.4	0.9
100°-110°	137.9	2.9
110°-120°	236.0	4.9
120°-130°	310.4	6.5
130°-140°	348.4	7.3
140°-150°	341.7	7.1
150°-160°	286.6	6.0
160°-170°	190.1	4.0
170°-180°	66.4	1.4
0°-30°	979.3	20.4
0°-40°	1520.7	31.7
0°-60°	2409.2	50.3
0°-90°	2829.9	59.1
90°-120°	417.3	8.7
90°-150°	1417.8	29.6
90°-180°	1961.0	40.9
0°-180°	4790.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1375	1375	1375	1375	1375	
5°	1375	1369	1353	1364	1360	130
15°	1308	1294	1252	1228	1216	369
25°	1187	1147	1065	1014	995	546
35°	1023	959	850	772	744	640
45°	836	753	622	534	504	646
55°	636	539	404	330	306	568
65°	429	328	216	174	170	426
75°	229	142	100	91	90	242
85°	54	27	24	24	24	61
90°	1	8	21	19	20	5
95°	31	37	38	38	37	34
105°	127	129	130	131	131	134
115°	237	240	239	238	237	234
125°	344	350	348	346	346	308
135°	446	452	453	453	451	344
145°	541	545	549	549	547	338
155°	619	620	622	625	623	285
165°	673	672	672	676	674	190
175°	700	699	697	701	698	67
180°	701	701	701	701	701	

TEST NUMBER: P910336

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US850-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1375.0	1375.0	1375.0	1375.0	1375.0
2.5°	1381.3	1375.0	1361.3	1373.8	1371.4
5°	1375.0	1368.8	1352.6	1363.8	1360.1
7.5°	1363.8	1356.4	1339.0	1343.9	1337.7
10°	1348.9	1340.2	1315.4	1311.5	1304.2
12.5°	1330.2	1319.0	1285.4	1278.0	1264.3
15°	1307.8	1294.1	1251.8	1228.2	1215.8
17.5°	1281.7	1261.8	1209.5	1182.2	1162.2
20°	1251.8	1226.9	1164.7	1133.7	1106.2
22.5°	1219.6	1190.8	1118.6	1076.4	1057.8
25°	1187.2	1147.3	1065.2	1014.2	995.4
27.5°	1148.6	1106.2	1015.4	957.0	928.2
30°	1107.6	1060.2	960.6	897.3	863.6
32.5°	1067.6	1010.4	908.5	833.7	802.6
35°	1022.9	959.4	849.9	771.5	744.1
37.5°	979.4	910.8	795.2	709.2	678.3
40°	933.3	858.7	737.9	649.5	617.3
42.5°	886.0	806.5	680.7	588.5	557.5
45°	836.3	752.8	622.3	533.8	503.9
47.5°	788.9	700.7	566.3	477.8	450.5
50°	736.7	648.3	511.5	425.5	399.5
52.5°	685.6	592.3	459.2	377.1	353.4
55°	635.8	538.8	404.3	329.8	306.2
57.5°	584.9	485.3	356.0	286.2	266.3
60°	532.5	433.1	304.9	241.4	221.6
62.5°	481.6	382.1	261.3	201.6	191.7
65°	429.3	328.5	216.5	174.2	170.5
67.5°	379.6	278.7	174.2	153.0	149.3
70°	327.3	230.2	144.3	131.9	126.9
72.5°	277.5	185.3	120.7	110.8	108.2
75°	228.9	141.8	99.6	90.8	89.6
77.5°	180.4	100.7	78.4	73.4	70.9
80°	135.6	72.2	59.7	54.8	54.8
82.5°	94.5	48.6	41.0	38.6	38.6
85°	53.5	27.3	23.6	23.6	23.6
87.5°	20.0	9.9	9.9	8.8	8.8
90°	0.7	7.7	20.7	19.4	20.1
92.5°	13.1	17.7	18.4	19.1	19.1
95°	30.8	36.8	37.8	37.8	36.8
97.5°	51.3	56.9	59.2	59.2	59.2
100°	75.1	80.0	81.6	81.6	81.0
102.5°	100.0	103.6	105.9	106.6	105.9
105°	127.3	129.0	130.3	131.3	131.3
107.5°	154.4	156.9	156.9	157.4	154.4
110°	180.7	184.0	184.0	184.0	182.3



TEST NUMBER: P910336

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US850-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	208.9	212.5	211.9	210.2	208.9
115°	236.9	240.2	239.2	238.5	236.9
117.5°	264.6	269.3	266.3	264.6	262.8
120°	292.4	297.1	292.4	292.4	290.6
122.5°	317.8	323.7	320.8	319.2	317.8
125°	344.5	349.8	348.1	346.2	345.6
127.5°	370.5	377.1	374.7	372.2	370.5
130°	394.8	402.5	401.3	400.1	397.8
132.5°	422.1	428.1	428.4	425.5	423.7
135°	445.6	452.1	453.4	452.8	451.0
137.5°	471.8	477.1	478.2	477.8	475.2
140°	494.8	500.2	503.2	503.2	500.8
142.5°	518.6	523.8	525.6	526.1	523.8
145°	541.0	545.2	548.6	549.2	546.8
147.5°	561.0	566.4	568.9	569.9	567.6
150°	581.8	585.3	587.7	589.5	587.7
152.5°	600.2	603.7	606.7	609.1	606.7
155°	618.6	620.3	622.1	625.1	623.3
157.5°	634.5	635.7	636.8	641.0	638.0
160°	648.7	649.9	650.5	654.1	651.5
162.5°	661.7	661.7	662.3	666.4	663.4
165°	672.9	672.3	672.3	676.5	673.6
167.5°	683.0	681.1	681.1	685.4	682.5
170°	690.7	689.0	688.4	692.6	689.0
172.5°	696.0	694.2	693.7	697.9	694.2
175°	700.2	698.6	697.2	701.4	697.9
177.5°	702.6	700.9	699.6	703.1	699.6
180°	701.4	701.4	701.4	701.4	701.4

TEST NUMBER: P910336

CATALOG NUMBER: DFN2DIP-4P2F0-030D020US850-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	12.11	13.02	13.00	13.92	15.06	8.07	8.98	8.96	9.88	11.02
	3H	13.77	14.59	14.67	15.50	16.66	9.25	10.06	10.14	10.97	12.13
	4H	14.37	15.14	15.28	16.05	17.23	9.69	10.46	10.60	11.37	12.54
	6H	14.78	15.49	15.70	16.41	17.59	9.99	10.70	10.92	11.62	12.81
	8H	14.90	15.57	15.83	16.51	17.69	10.08	10.75	11.01	11.69	12.87
	12H	14.95	15.59	15.89	16.52	17.73	10.11	10.75	11.05	11.68	12.89
4H	2H	12.14	12.91	13.05	13.82	14.99	8.67	9.44	9.58	10.35	11.52
	3H	13.95	14.58	14.87	15.53	16.72	10.00	10.64	10.93	11.58	12.77
	4H	14.62	15.21	15.56	16.14	17.36	10.53	11.11	11.47	12.05	13.27
	6H	15.12	15.62	16.07	16.58	17.80	10.93	11.44	11.88	12.40	13.61
	8H	15.28	15.75	16.24	16.71	17.94	11.05	11.52	12.00	12.48	13.71
	12H	15.37	15.79	16.34	16.77	18.00	11.11	11.53	12.08	12.51	13.74
8H	4H	14.59	15.06	15.54	16.02	17.24	10.81	11.27	11.76	12.23	13.46
	6H	15.14	15.52	16.11	16.52	17.75	11.30	11.69	12.28	12.68	13.91
	8H	15.34	15.68	16.32	16.67	17.91	11.47	11.82	12.46	12.80	14.05
	12H	15.46	15.76	16.45	16.74	18.04	11.58	11.88	12.57	12.86	14.15
12H	4H	14.55	14.97	15.52	15.94	17.18	10.81	11.23	11.78	12.21	13.44
	6H	15.11	15.45	16.10	16.44	17.68	11.34	11.68	12.33	12.67	13.92
	8H	15.32	15.62	16.31	16.60	17.89	11.54	11.84	12.53	12.82	14.11