

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: P904892

Luminaire Tested: DFN2DIP-4P2F0-040D020US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904892
REPORT IS A COMBINATION OF REPORTS P899016 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US835-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

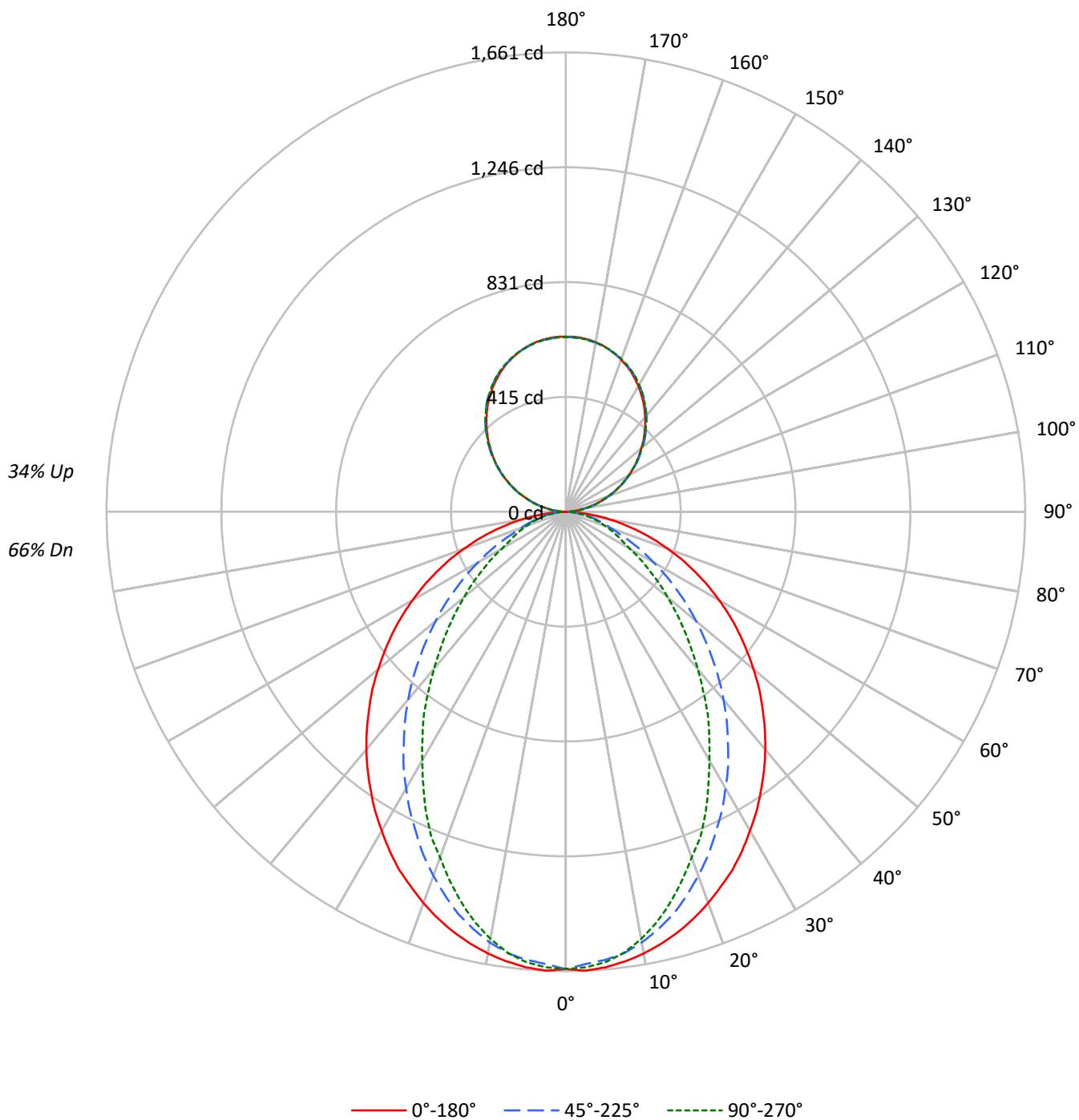
Lumens per Lamp: N/A
Luminaire Lumens: 5170.0 lumens
Efficiency: N/A
Efficacy: 92.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
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: P904892

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US835-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904892

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US835-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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4140	4140	4140
5°	4138	4063	4093
10°	4089	3973	3953
15°	4024	3832	3741
20°	3941	3641	3483
25°	3857	3429	3234
30°	3746	3213	2921
35°	3637	2981	2645
40°	3525	2743	2331
45°	3396	2480	2047
50°	3263	2215	1769
55°	3122	1934	1503
60°	2959	1641	1231
65°	2772	1345	1100
70°	2544	1070	986
75°	2256	923	884
80°	1846	746	746
85°	1191	458	526

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3396 cd/sqm

TEST NUMBER: P904892

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US835-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	3.0
10°-20°	425.3	8.2
20°-30°	597.2	11.6
30°-40°	650.9	12.6
40°-50°	598.3	11.6
50°-60°	469.9	9.1
60°-70°	305.8	5.9
70°-80°	157.4	3.0
80°-90°	42.0	0.8
90°-100°	39.1	0.8
100°-110°	124.4	2.4
110°-120°	212.8	4.1
120°-130°	279.9	5.4
130°-140°	314.2	6.1
140°-150°	308.1	6.0
150°-160°	258.4	5.0
160°-170°	171.4	3.3
170°-180°	59.9	1.2
0°-30°	1177.4	22.8
0°-40°	1828.4	35.4
0°-60°	2896.5	56.0
0°-90°	3401.8	65.8
90°-120°	376.3	7.3
90°-150°	1278.5	24.7
90°-180°	1768.0	34.2
0°-180°	5170.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	1	7	19	18	18	5
95°	28	33	34	34	33	31
105°	115	116	118	118	118	121
115°	214	217	216	215	214	211
125°	311	315	314	312	312	278
135°	402	408	409	408	407	311
145°	488	492	495	495	493	305
155°	558	559	561	564	562	257
165°	607	606	606	610	607	171
175°	631	630	629	632	629	60
180°	632	632	632	632	632	

TEST NUMBER: P904892

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US835-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	0.6	6.9	18.7	17.5	18.1
92.5°	11.8	16.0	16.6	17.2	17.2
95°	27.8	33.2	34.1	34.1	33.2
97.5°	46.3	51.3	53.4	53.4	53.4
100°	67.7	72.1	73.6	73.6	73.0
102.5°	90.2	93.4	95.5	96.1	95.5
105°	114.8	116.3	117.5	118.4	118.4
107.5°	139.2	141.5	141.5	141.9	139.2
110°	162.9	165.9	165.9	165.9	164.4

TEST NUMBER: P904892

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	188.4	191.6	191.1	189.5	188.4
115°	213.6	216.6	215.7	215.1	213.6
117.5°	238.6	242.8	240.1	238.6	237.0
120°	263.7	267.9	263.7	263.7	262.0
122.5°	286.6	291.9	289.3	287.8	286.6
125°	310.6	315.4	313.9	312.2	311.6
127.5°	334.1	340.0	337.9	335.6	334.1
130°	356.0	362.9	361.9	360.8	358.7
132.5°	380.6	386.0	386.3	383.7	382.1
135°	401.8	407.7	408.8	408.3	406.7
137.5°	425.4	430.2	431.2	430.8	428.5
140°	446.2	451.0	453.7	453.7	451.6
142.5°	467.6	472.3	473.9	474.4	472.3
145°	487.8	491.6	494.7	495.2	493.1
147.5°	505.9	510.7	513.0	513.9	511.8
150°	524.6	527.8	529.9	531.6	529.9
152.5°	541.2	544.4	547.1	549.2	547.1
155°	557.8	559.3	561.0	563.7	562.0
157.5°	572.1	573.2	574.2	578.0	575.3
160°	584.9	586.0	586.6	589.8	587.5
162.5°	596.7	596.7	597.2	600.9	598.2
165°	606.8	606.2	606.2	610.0	607.4
167.5°	615.9	614.2	614.2	618.0	615.4
170°	622.8	621.3	620.7	624.5	621.3
172.5°	627.6	626.0	625.5	629.3	626.0
175°	631.4	629.9	628.7	632.5	629.3
177.5°	633.5	632.0	630.8	634.0	630.8
180°	632.5	632.5	632.5	632.5	632.5

TEST NUMBER: P904892

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US835-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	13.31	14.29	14.12	15.12	16.15	9.27	10.25	10.08	11.08	12.11
	3H	14.97	15.85	15.80	16.69	17.75	10.45	11.32	11.28	12.17	13.22
	4H	15.57	16.40	16.42	17.25	18.32	10.89	11.72	11.74	12.57	13.63
	6H	15.98	16.74	16.84	17.60	18.68	11.20	11.96	12.06	12.82	13.90
	8H	16.11	16.83	16.97	17.70	18.79	11.29	12.01	12.15	12.88	13.97
	12H	16.16	16.85	17.03	17.72	18.83	11.32	12.01	12.20	12.88	13.99
4H	2H	13.34	14.16	14.19	15.01	16.08	9.87	10.70	10.72	11.55	12.61
	3H	15.16	15.84	16.02	16.72	17.81	11.21	11.89	12.07	12.78	13.86
	4H	15.84	16.46	16.71	17.34	18.45	11.75	12.37	12.62	13.25	14.36
	6H	16.34	16.87	17.23	17.78	18.89	12.15	12.69	13.04	13.59	14.71
	8H	16.50	17.00	17.39	17.90	19.03	12.27	12.77	13.16	13.67	14.80
	12H	16.59	17.04	17.50	17.96	19.09	12.33	12.78	13.24	13.70	14.83
8H	4H	15.81	16.31	16.70	17.21	18.34	12.02	12.52	12.91	13.42	14.55
	6H	16.36	16.77	17.27	17.71	18.84	12.52	12.93	13.44	13.87	15.00
	8H	16.56	16.92	17.49	17.86	19.00	12.69	13.06	13.62	13.99	15.14
	12H	16.69	17.01	17.62	17.93	19.13	12.80	13.13	13.73	14.05	15.25
12H	4H	15.77	16.22	16.68	17.14	18.27	12.03	12.48	12.94	13.40	14.53
	6H	16.33	16.70	17.26	17.63	18.77	12.56	12.93	13.49	13.86	15.01
	8H	16.54	16.86	17.47	17.79	18.98	12.76	13.08	13.69	14.01	15.20