

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: P904872

Luminaire Tested: DFN2DIP-4P2F0-020D030US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904872
REPORT IS A COMBINATION OF REPORTS P899018 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-020D030US835-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

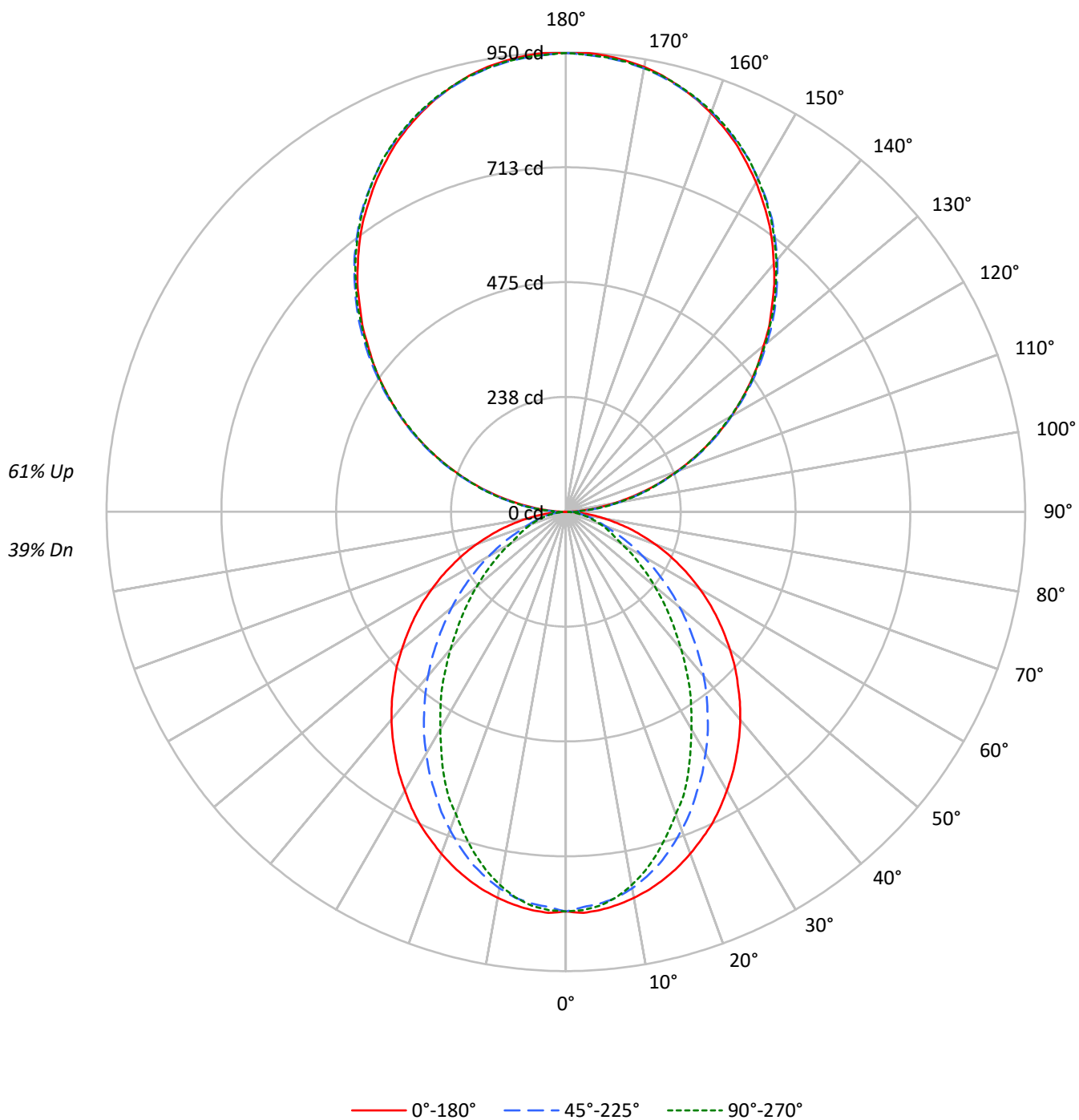
Lumens per Lamp: N/A
Luminaire Lumens: 4355.0 lumens
Efficiency: N/A
Efficacy: 108.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 40
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P904872

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US835-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904872

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US835-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	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	51	41	40	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	66	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	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	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°	2070	2070	2070
5°	2069	2032	2046
10°	2044	1987	1977
15°	2012	1916	1871
20°	1971	1821	1741
25°	1928	1715	1617
30°	1873	1606	1460
35°	1818	1491	1323
40°	1762	1372	1166
45°	1698	1240	1023
50°	1632	1108	885
55°	1561	967	751
60°	1480	821	616
65°	1386	673	550
70°	1272	535	493
75°	1128	461	442
80°	923	373	373
85°	594	229	263

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1698 cd/sqm

TEST NUMBER: P904872

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US835-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.5	1.8
10°-20°	212.7	4.9
20°-30°	298.6	6.9
30°-40°	325.5	7.5
40°-50°	299.1	6.9
50°-60°	234.9	5.4
60°-70°	152.9	3.5
70°-80°	78.7	1.8
80°-90°	22.8	0.5
90°-100°	58.7	1.3
100°-110°	186.5	4.3
110°-120°	319.2	7.3
120°-130°	419.8	9.6
130°-140°	471.2	10.8
140°-150°	462.1	10.6
150°-160°	387.7	8.9
160°-170°	257.1	5.9
170°-180°	89.9	2.1
0°-30°	588.7	13.5
0°-40°	914.2	21.0
0°-60°	1448.3	33.3
0°-90°	1702.7	39.1
90°-120°	564.5	13.0
90°-150°	1917.7	44.0
90°-180°	2652.0	60.9
0°-180°	4355.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	827	827	827	827	827	
5°	827	823	813	820	818	78
15°	786	778	752	738	731	222
25°	714	690	640	610	598	328
35°	615	577	511	464	447	385
45°	503	452	374	321	303	388
55°	382	324	243	198	184	342
65°	258	198	130	105	102	256
75°	138	85	60	55	54	146
85°	32	16	14	14	14	37
90°	1	10	28	26	27	4
95°	42	50	51	51	50	46
105°	172	174	176	178	178	182
115°	320	325	324	323	320	317
125°	466	473	471	468	467	416
135°	603	612	613	612	610	466
145°	732	737	742	743	740	457
155°	837	839	842	846	843	385
165°	910	909	909	915	911	257
175°	947	945	943	949	944	90
180°	949	949	949	949	949	

TEST NUMBER: P904872

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US835-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	826.6	826.6	826.6	826.6	826.6
2.5°	830.3	826.6	818.3	825.9	824.4
5°	826.6	822.9	813.1	819.9	817.6
7.5°	819.9	815.4	804.9	807.9	804.1
10°	810.9	805.6	790.7	788.4	784.0
12.5°	799.7	792.9	772.7	768.3	760.0
15°	786.2	777.9	752.5	738.3	730.9
17.5°	770.5	758.5	727.1	710.6	698.7
20°	752.5	737.5	700.2	681.5	665.0
22.5°	733.1	715.9	672.5	647.1	635.9
25°	713.7	689.7	640.3	609.7	598.4
27.5°	690.5	665.0	610.4	575.2	558.0
30°	665.8	637.3	577.5	539.4	519.1
32.5°	641.8	607.4	546.1	501.2	482.5
35°	614.9	576.8	511.0	463.8	447.3
37.5°	588.7	547.5	478.0	426.4	407.7
40°	561.0	516.2	443.6	390.5	371.0
42.5°	532.6	484.8	409.2	353.8	335.2
45°	502.7	452.5	374.1	320.9	302.9
47.5°	474.3	421.2	340.4	287.2	270.8
50°	442.9	389.8	307.5	255.8	240.2
52.5°	412.1	356.0	276.0	226.7	212.5
55°	382.2	323.9	243.1	198.3	184.0
57.5°	351.6	291.7	214.0	172.1	160.1
60°	320.2	260.3	183.3	145.2	133.2
62.5°	289.5	229.7	157.1	121.2	115.2
65°	258.1	197.5	130.2	104.8	102.5
67.5°	228.2	167.5	104.8	92.0	89.8
70°	196.7	138.4	86.7	79.3	76.3
72.5°	166.8	111.4	72.5	66.6	65.1
75°	137.6	85.2	59.8	54.6	53.9
77.5°	108.5	60.6	47.1	44.1	42.6
80°	81.5	43.4	35.9	32.9	32.9
82.5°	56.8	29.2	24.7	23.2	23.2
85°	32.1	16.4	14.2	14.2	14.2
87.5°	12.0	6.0	6.0	5.2	5.2
90°	0.9	10.3	28.0	26.3	27.2
92.5°	17.7	24.0	24.9	25.7	25.7
95°	41.8	49.8	51.2	51.2	49.8
97.5°	69.5	76.9	80.1	80.1	80.1
100°	101.5	108.1	110.4	110.4	109.6
102.5°	135.3	140.2	143.3	144.2	143.3
105°	172.2	174.5	176.2	177.6	177.6
107.5°	208.8	212.2	212.2	212.8	208.8
110°	244.3	248.9	248.9	248.9	246.6

TEST NUMBER: P904872

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	282.6	287.5	286.6	284.3	282.6
115°	320.4	324.9	323.5	322.7	320.4
117.5°	357.8	364.1	360.1	357.8	355.5
120°	395.6	401.9	395.6	395.6	393.0
122.5°	429.9	437.9	433.9	431.6	429.9
125°	466.0	473.1	470.8	468.2	467.4
127.5°	501.1	510.0	506.9	503.4	501.1
130°	534.0	544.3	542.9	541.2	538.0
132.5°	570.9	578.9	579.5	575.5	573.2
135°	602.7	611.5	613.3	612.4	610.1
137.5°	638.1	645.3	646.7	646.2	642.7
140°	669.3	676.5	680.5	680.5	677.3
142.5°	701.4	708.5	710.8	711.7	708.5
145°	731.7	737.4	742.0	742.8	739.7
147.5°	758.9	766.0	769.4	770.9	767.7
150°	786.9	791.8	794.9	797.5	794.9
152.5°	811.8	816.6	820.6	823.8	820.6
155°	836.7	838.9	841.5	845.5	843.0
157.5°	858.1	859.8	861.3	867.0	863.0
160°	877.3	879.0	879.9	884.7	881.3
162.5°	895.0	895.0	895.9	901.3	897.3
165°	910.2	909.3	909.3	915.0	911.0
167.5°	923.9	921.3	921.3	927.0	923.0
170°	934.2	931.9	931.1	936.8	931.9
172.5°	941.3	939.1	938.2	943.9	939.1
175°	947.1	944.8	943.1	948.8	943.9
177.5°	950.2	947.9	946.2	951.1	946.2
180°	948.8	948.8	948.8	948.8	948.8

TEST NUMBER: P904872

CATALOG NUMBER: DFN2DIP-4P2F0-020D030US835-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	8.43	9.17	9.48	10.23	11.65	4.39	5.14	5.44	6.19	7.61
	3H	10.07	10.74	11.14	11.80	13.24	5.55	6.22	6.61	7.28	8.72
	4H	10.66	11.30	11.74	12.36	13.81	5.98	6.62	7.05	7.68	9.13
	6H	11.06	11.65	12.14	12.71	14.17	6.28	6.86	7.36	7.93	9.39
	8H	11.18	11.73	12.26	12.81	14.27	6.36	6.91	7.44	7.99	9.45
	12H	11.23	11.75	12.32	12.83	14.31	6.39	6.92	7.48	7.99	9.47
4H	2H	8.43	9.06	9.51	10.13	11.57	4.96	5.60	6.04	6.66	8.11
	3H	10.22	10.75	11.31	11.84	13.30	6.28	6.81	7.37	7.90	9.36
	4H	10.89	11.38	11.99	12.46	13.94	6.81	7.29	7.90	8.37	9.85
	6H	11.38	11.80	12.48	12.90	14.38	7.20	7.61	8.30	8.72	10.19
	8H	11.54	11.93	12.64	13.03	14.52	7.31	7.70	8.41	8.80	10.29
	12H	11.62	11.97	12.74	13.08	14.58	7.36	7.71	8.48	8.82	10.32
8H	4H	10.85	11.24	11.95	12.33	13.82	7.07	7.45	8.17	8.55	10.04
	6H	11.39	11.71	12.51	12.85	14.33	7.55	7.87	8.67	9.01	10.50
	8H	11.59	11.87	12.72	12.99	14.50	7.73	8.01	8.86	9.13	10.63
	12H	11.71	11.95	12.84	13.07	14.61	7.83	8.07	8.96	9.19	10.73
12H	4H	10.80	11.15	11.91	12.26	13.75	7.06	7.41	8.18	8.52	10.02
	6H	11.36	11.64	12.49	12.76	14.27	7.60	7.88	8.72	8.99	10.50
	8H	11.56	11.81	12.69	12.92	14.47	7.78	8.03	8.92	9.15	10.69