

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: P902274

Luminaire Tested: DFN2DIP-4P4F0-030D030US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902274
REPORT IS A COMBINATION OF REPORTS P899079 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D030US830-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

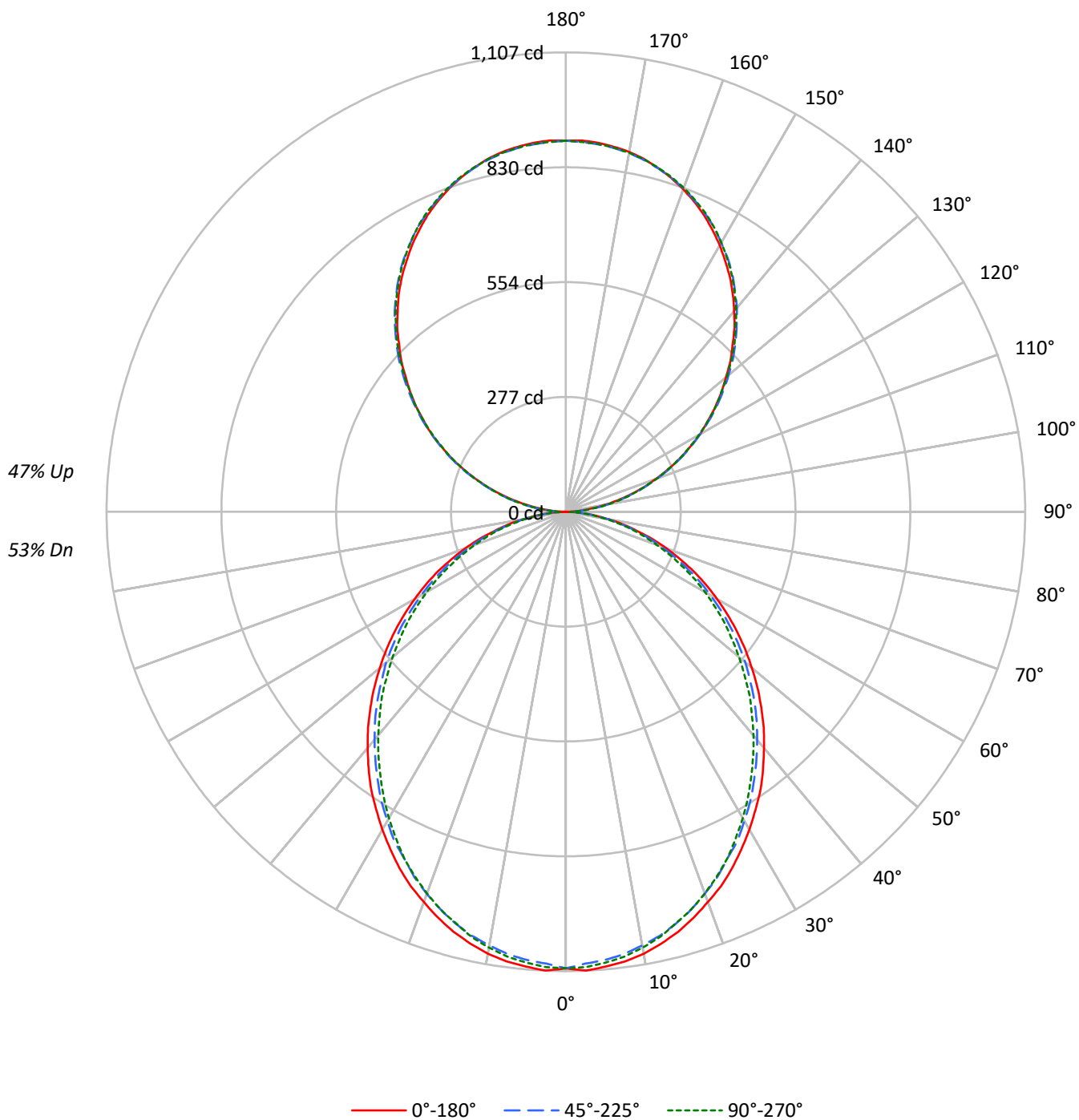
Lumens per Lamp: N/A
Luminaire Lumens: 5301.8 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 50.7
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: P902274

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US830-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-4P4F0-030D030US830-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	714	714	714
5°	715	704	709
10°	709	695	700
15°	699	684	685
20°	685	668	670
25°	671	649	652
30°	653	632	630
35°	637	611	606
40°	616	590	584
45°	596	569	561
50°	574	548	534
55°	550	522	510
60°	524	492	482
65°	495	461	449
70°	459	423	414
75°	408	378	382
80°	347	320	319
85°	252	220	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 676 cd/sqm

TEST NUMBER: P902274

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	2.0
10°-20°	291.4	5.5
20°-30°	428.2	8.1
30°-40°	497.3	9.4
40°-50°	496.7	9.4
50°-60°	433.1	8.2
60°-70°	320.2	6.0
70°-80°	181.1	3.4
80°-90°	50.3	0.9
90°-100°	55.3	1.0
100°-110°	175.8	3.3
110°-120°	300.9	5.7
120°-130°	395.7	7.5
130°-140°	444.2	8.4
140°-150°	435.6	8.2
150°-160°	365.4	6.9
160°-170°	242.3	4.6
170°-180°	84.7	1.6
0°-30°	823.1	15.5
0°-40°	1320.4	24.9
0°-60°	2250.3	42.4
0°-90°	2801.9	52.8
90°-120°	532.1	10.0
90°-150°	1807.5	34.1
90°-180°	2500.0	47.2
0°-180°	5301.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	1	10	26	25	26	5
95°	39	47	48	48	47	44
105°	162	164	166	167	167	171
115°	302	306	305	304	302	299
125°	439	446	444	441	440	392
135°	568	576	578	577	575	439
145°	690	695	699	700	697	431
155°	789	791	793	797	795	363
165°	858	857	857	862	859	242
175°	893	890	889	894	890	85
180°	894	894	894	894	894	

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CATALOG NUMBER: DFN2DIP-4P4F0-030D030US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
90°	0.8	9.7	26.4	24.8	25.6
92.5°	16.7	22.6	23.5	24.2	24.2
95°	39.4	46.9	48.3	48.3	46.9
97.5°	65.5	72.5	75.5	75.5	75.5
100°	95.7	101.9	104.1	104.1	103.3
102.5°	127.5	132.1	135.1	135.9	135.1
105°	162.3	164.5	166.1	167.4	167.4
107.5°	196.8	200.0	200.0	200.6	196.8
110°	230.3	234.6	234.6	234.6	232.4



TEST NUMBER: P902274

CATALOG NUMBER: DFN2DIP-4P4F0-030D030US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	266.4	271.0	270.1	268.0	266.4
115°	302.0	306.2	304.9	304.2	302.0
117.5°	337.2	343.2	339.4	337.2	335.1
120°	372.9	378.8	372.9	372.9	370.4
122.5°	405.2	412.7	409.0	406.8	405.2
125°	439.2	445.9	443.7	441.3	440.5
127.5°	472.3	480.7	477.8	474.5	472.3
130°	503.3	513.0	511.7	510.1	507.1
132.5°	538.1	545.6	546.2	542.4	540.3
135°	568.1	576.4	578.1	577.2	575.0
137.5°	601.4	608.2	609.5	609.1	605.8
140°	630.8	637.6	641.4	641.4	638.4
142.5°	661.1	667.8	670.0	670.8	667.8
145°	689.7	695.0	699.4	700.1	697.2
147.5°	715.3	722.0	725.2	726.6	723.6
150°	741.7	746.3	749.2	751.7	749.2
152.5°	765.2	769.7	773.5	776.5	773.5
155°	788.6	790.7	793.1	796.9	794.6
157.5°	808.8	810.4	811.8	817.2	813.4
160°	826.9	828.5	829.3	833.9	830.7
162.5°	843.6	843.6	844.4	849.5	845.7
165°	857.9	857.1	857.1	862.4	858.7
167.5°	870.8	868.4	868.4	873.7	870.0
170°	880.5	878.4	877.6	883.0	878.4
172.5°	887.2	885.1	884.3	889.7	885.1
175°	892.7	890.5	888.9	894.3	889.7
177.5°	895.6	893.4	891.8	896.5	891.8
180°	894.3	894.3	894.3	894.3	894.3



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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	6.38	7.26	7.31	8.21	9.44	5.93	6.82	6.87	7.77	9.00
	3H	8.05	8.84	8.99	9.80	11.05	7.56	8.35	8.50	9.31	10.56
	4H	8.64	9.39	9.60	10.35	11.62	8.14	8.90	9.10	9.86	11.12
	6H	9.04	9.74	10.01	10.71	11.98	8.54	9.24	9.51	10.21	11.48
	8H	9.15	9.81	10.13	10.80	12.07	8.65	9.31	9.63	10.30	11.57
	12H	9.20	9.83	10.18	10.81	12.11	8.69	9.32	9.67	10.30	11.60
4H	2H	6.84	7.60	7.81	8.56	9.82	6.49	7.24	7.45	8.21	9.47
	3H	8.72	9.35	9.69	10.34	11.62	8.31	8.94	9.28	9.93	11.21
	4H	9.44	10.01	10.42	11.00	12.30	9.01	9.59	10.00	10.58	11.88
	6H	9.96	10.45	10.95	11.46	12.76	9.53	10.02	10.52	11.03	12.33
	8H	10.11	10.58	11.11	11.58	12.89	9.68	10.14	10.67	11.14	12.45
	12H	10.19	10.61	11.20	11.63	12.95	9.74	10.16	10.76	11.18	12.50
8H	4H	9.64	10.10	10.63	11.10	12.42	9.26	9.72	10.26	10.73	12.04
	6H	10.28	10.66	11.30	11.70	13.01	9.89	10.28	10.91	11.32	12.63
	8H	10.50	10.84	11.53	11.87	13.20	10.11	10.45	11.14	11.48	12.81
	12H	10.64	10.93	11.67	11.96	13.33	10.23	10.52	11.26	11.55	12.92
12H	4H	9.62	10.04	10.64	11.06	12.38	9.26	9.67	10.27	10.69	12.01
	6H	10.31	10.64	11.34	11.68	13.01	9.93	10.27	10.96	11.30	12.63
	8H	10.55	10.85	11.59	11.88	13.25	10.17	10.47	11.21	11.50	12.87