

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: P913070

Luminaire Tested: DFN2DIP-4P2F0-030D040US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913070
REPORT IS A COMBINATION OF REPORTS P899025 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D040US927-FLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

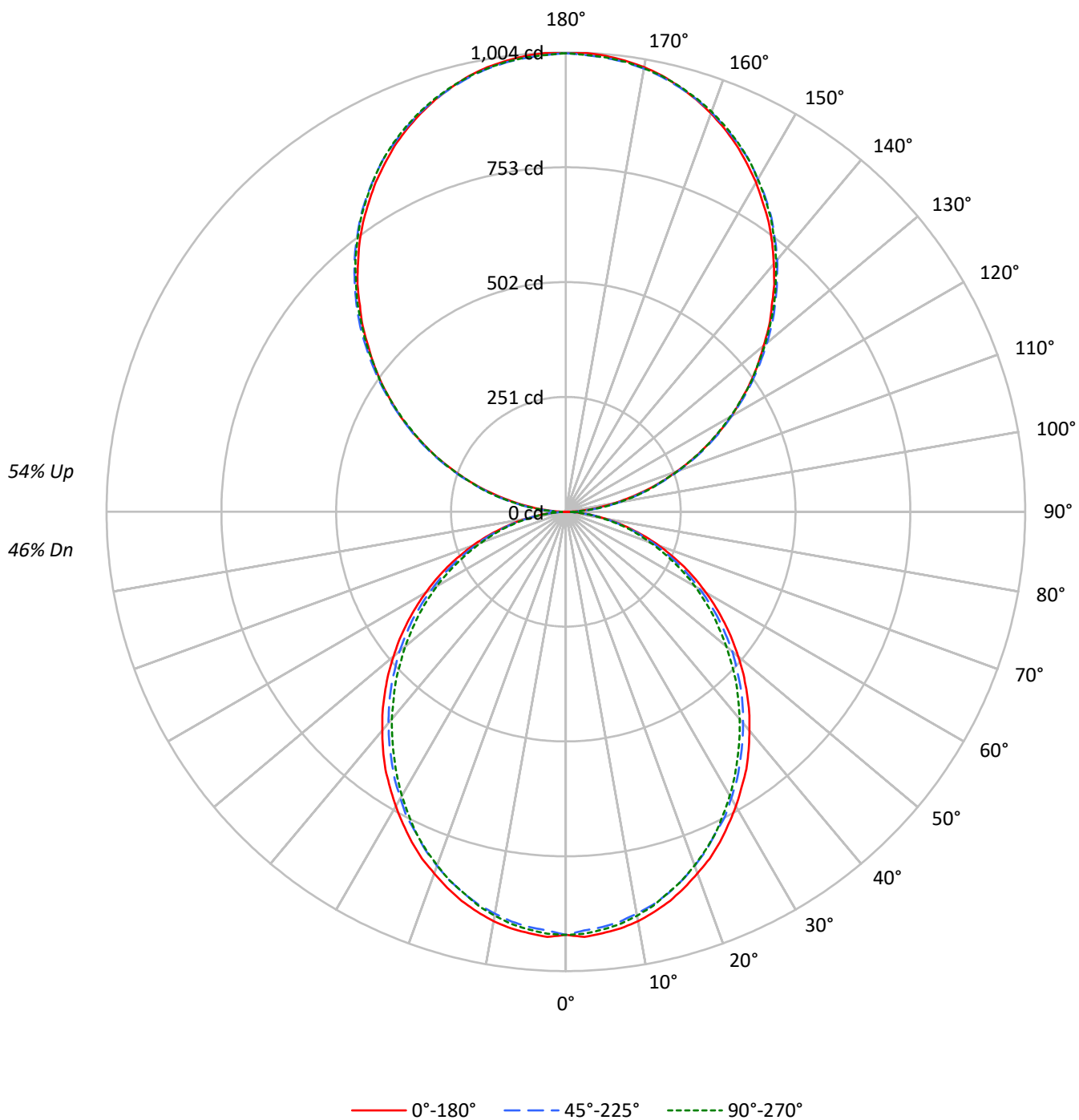
Lumens per Lamp: N/A
Luminaire Lumens: 5157.1 lumens
Efficiency: N/A
Efficacy: 85.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 60.3
Input Voltage (V): 120
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

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Luminous Intensity Polar Plot



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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2315	2315	2315
5°	2315	2277	2295
10°	2291	2241	2260
15°	2253	2198	2207
20°	2203	2141	2154
25°	2153	2074	2093
30°	2091	2011	2016
35°	2033	1938	1935
40°	1961	1864	1858
45°	1890	1789	1778
50°	1811	1711	1687
55°	1729	1620	1602
60°	1636	1513	1504
65°	1533	1402	1390
70°	1403	1266	1265
75°	1224	1104	1145
80°	1008	896	926
85°	674	560	576

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1890 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	1.7
10°-20°	244.9	4.7
20°-30°	359.9	7.0
30°-40°	418.0	8.1
40°-50°	417.5	8.1
50°-60°	364.0	7.1
60°-70°	269.1	5.2
70°-80°	152.3	3.0
80°-90°	43.0	0.8
90°-100°	62.0	1.2
100°-110°	197.0	3.8
110°-120°	337.2	6.5
120°-130°	443.5	8.6
130°-140°	497.8	9.7
140°-150°	488.1	9.5
150°-160°	409.5	7.9
160°-170°	271.5	5.3
170°-180°	94.9	1.8
0°-30°	691.8	13.4
0°-40°	1109.8	21.5
0°-60°	1891.3	36.7
0°-90°	2355.6	45.7
90°-120°	596.2	11.6
90°-150°	2025.6	39.3
90°-180°	2801.0	54.3
0°-180°	5157.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	925	921	911	918	917	88
15°	880	875	863	867	862	248
25°	797	790	774	776	774	367
35°	687	678	664	659	654	429
45°	559	553	540	530	526	432
55°	423	418	407	397	392	378
65°	286	280	271	263	259	282
75°	149	148	143	138	140	159
85°	36	36	35	32	31	41
90°	1	11	30	28	29	5
95°	44	53	54	54	53	49
105°	182	184	186	188	188	192
115°	338	343	342	341	338	335
125°	492	500	497	495	494	440
135°	637	646	648	647	644	492
145°	773	779	784	785	781	483
155°	884	886	889	893	890	407
165°	961	960	960	966	962	271
175°	1000	998	996	1002	997	95
180°	1002	1002	1002	1002	1002	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	924.7	924.7	924.7	924.7	924.7
2.5°	930.1	925.7	915.8	924.7	923.0
5°	924.7	921.2	911.4	918.5	916.8
7.5°	918.5	913.2	903.4	910.6	908.8
10°	908.8	902.5	891.9	899.0	896.4
12.5°	895.4	890.1	879.5	883.8	882.1
15°	880.3	875.0	863.4	867.0	862.5
17.5°	861.6	856.3	844.7	849.1	844.7
20°	841.1	835.8	823.4	826.0	822.5
22.5°	820.8	812.8	801.1	801.1	799.3
25°	796.7	789.6	774.5	776.3	774.5
27.5°	770.0	763.7	752.3	749.6	745.2
30°	743.4	736.3	722.9	720.3	716.7
32.5°	714.9	709.6	695.4	690.0	686.4
35°	687.4	678.5	664.2	658.9	654.4
37.5°	656.2	648.2	634.0	627.7	623.3
40°	624.2	617.1	602.8	594.9	591.4
42.5°	593.1	586.0	571.8	562.8	557.5
45°	559.4	553.1	539.7	530.0	526.4
47.5°	526.4	520.2	506.0	496.1	490.8
50°	491.7	487.3	474.8	462.4	458.0
52.5°	458.0	451.7	440.2	430.4	424.1
55°	423.3	418.0	407.3	396.6	392.2
57.5°	388.6	384.1	372.6	361.9	358.3
60°	353.9	350.4	337.9	328.1	325.5
62.5°	320.1	313.9	305.0	296.1	292.6
65°	285.5	280.1	271.2	263.2	258.8
67.5°	249.9	245.4	237.4	231.2	227.7
70°	217.0	213.4	205.4	199.2	195.7
72.5°	183.2	179.6	175.2	169.0	166.4
75°	149.3	147.7	143.1	137.8	139.7
77.5°	119.1	115.6	113.8	111.1	108.5
80°	89.0	88.0	86.2	83.6	81.8
82.5°	60.4	60.4	59.7	56.0	56.0
85°	36.4	35.6	34.7	32.0	31.1
87.5°	16.0	14.3	12.4	9.8	8.9
90°	0.9	10.9	29.6	27.8	28.7
92.5°	18.7	25.3	26.3	27.2	27.2
95°	44.1	52.6	54.1	54.1	52.6
97.5°	73.4	81.3	84.6	84.6	84.6
100°	107.3	114.2	116.6	116.6	115.7
102.5°	142.9	148.1	151.4	152.3	151.4
105°	181.9	184.3	186.1	187.6	187.6
107.5°	220.5	224.2	224.2	224.7	220.5
110°	258.0	262.8	262.8	262.8	260.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	298.5	303.6	302.7	300.3	298.5
115°	338.3	343.3	341.7	340.8	338.3
117.5°	377.9	384.6	380.4	377.9	375.6
120°	417.9	424.5	417.9	417.9	415.1
122.5°	454.1	462.6	458.4	455.9	454.1
125°	492.2	499.7	497.3	494.6	493.7
127.5°	529.3	538.7	535.4	531.7	529.3
130°	564.0	575.0	573.5	571.6	568.3
132.5°	603.0	611.5	612.1	607.8	605.5
135°	636.6	645.9	647.8	646.8	644.4
137.5°	674.1	681.6	683.1	682.5	678.9
140°	706.9	714.5	718.7	718.7	715.4
142.5°	740.8	748.4	750.8	751.7	748.4
145°	772.9	778.9	783.7	784.7	781.3
147.5°	801.5	809.1	812.7	814.2	810.9
150°	831.2	836.3	839.6	842.3	839.6
152.5°	857.5	862.5	866.8	870.1	866.8
155°	883.7	886.1	888.8	893.1	890.3
157.5°	906.4	908.2	909.7	915.8	911.5
160°	926.6	928.4	929.3	934.5	930.8
162.5°	945.3	945.3	946.3	952.0	947.8
165°	961.4	960.4	960.4	966.5	962.3
167.5°	975.9	973.1	973.1	979.2	974.9
170°	986.7	984.3	983.4	989.4	984.3
172.5°	994.3	991.9	990.9	997.0	991.9
175°	1000.4	997.9	996.1	1002.1	997.0
177.5°	1003.7	1001.2	999.4	1004.6	999.4
180°	1002.1	1002.1	1002.1	1002.1	1002.1

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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	9.64	10.46	10.63	11.47	12.80	9.20	10.02	10.19	11.02	12.36
	3H	11.27	12.01	12.28	13.03	14.38	10.78	11.52	11.79	12.54	13.89
	4H	11.84	12.54	12.86	13.56	14.92	11.35	12.05	12.37	13.07	14.43
	6H	12.22	12.87	13.25	13.89	15.26	11.73	12.37	12.75	13.39	14.77
	8H	12.32	12.93	13.35	13.97	15.34	11.82	12.43	12.85	13.47	14.84
	12H	12.36	12.94	13.40	13.97	15.37	11.85	12.43	12.89	13.47	14.86
4H	2H	10.08	10.78	11.11	11.80	13.16	9.73	10.43	10.75	11.44	12.80
	3H	11.92	12.50	12.95	13.55	14.92	11.51	12.10	12.54	13.14	14.51
	4H	12.61	13.15	13.65	14.19	15.58	12.19	12.72	13.23	13.76	15.16
	6H	13.10	13.56	14.15	14.63	16.02	12.67	13.13	13.72	14.19	15.59
	8H	13.24	13.67	14.29	14.73	16.13	12.81	13.24	13.86	14.29	15.70
	12H	13.30	13.69	14.37	14.76	16.17	12.86	13.24	13.92	14.31	15.72
8H	4H	12.79	13.22	13.84	14.28	15.68	12.42	12.85	13.47	13.90	15.31
	6H	13.40	13.75	14.47	14.85	16.25	13.01	13.37	14.08	14.46	15.87
	8H	13.60	13.91	14.68	14.99	16.42	13.21	13.52	14.29	14.60	16.02
	12H	13.71	13.99	14.80	15.06	16.53	13.31	13.58	14.39	14.65	16.12
12H	4H	12.77	13.16	13.84	14.23	15.64	12.41	12.79	13.47	13.86	15.27
	6H	13.42	13.73	14.50	14.81	16.23	13.05	13.36	14.13	14.44	15.86
	8H	13.64	13.92	14.73	14.99	16.46	13.26	13.54	14.34	14.61	16.07