

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: P913284

Luminaire Tested: DFN2DIP-4P4F0-070D030US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913284
REPORT IS A COMBINATION OF REPORTS P899088 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-070D030US927-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

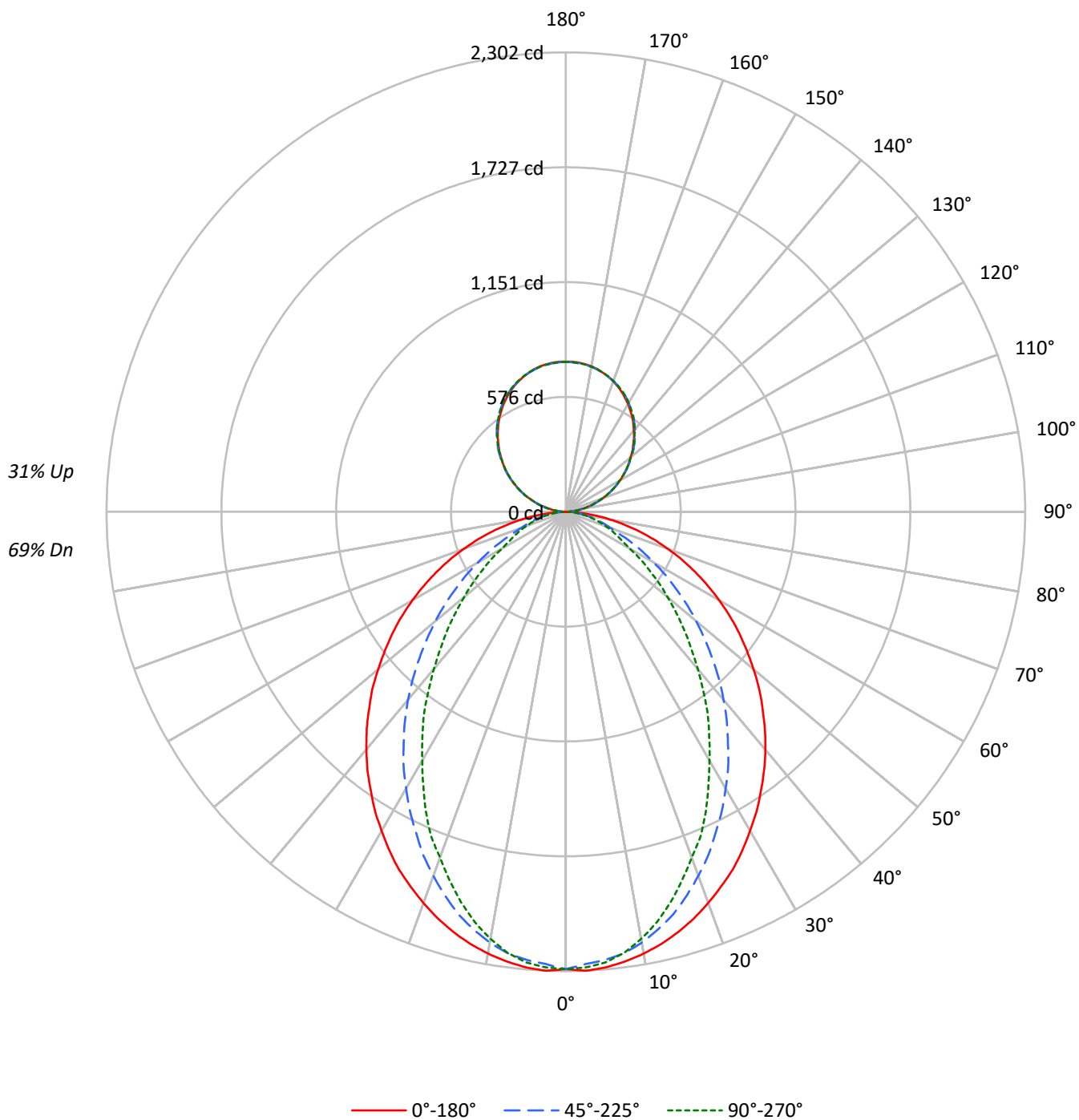
Lumens per Lamp: N/A
Luminaire Lumens: 6816.7 lumens
Efficiency: N/A
Efficacy: 70.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 97.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	66	65	64
2	94	87	81	76	89	82	77	73	74	70	66	66	63	60	59	57	55
3	86	77	70	64	81	73	67	62	66	61	57	59	55	52	53	50	47
4	79	69	61	55	75	65	58	53	59	53	49	53	49	45	48	44	41
5	73	62	54	48	69	59	51	46	53	47	43	48	43	40	43	40	36
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	40	36	32
7	63	51	43	37	59	48	41	36	44	38	34	40	35	31	36	32	29
8	59	46	39	33	55	44	37	32	41	35	30	37	32	28	34	29	26
9	55	43	35	30	52	41	34	29	37	31	27	34	29	26	31	27	24
10	51	39	32	27	49	38	31	26	35	29	25	32	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1487	1487	1487
5°	1489	1464	1473
10°	1475	1435	1426
15°	1454	1388	1352
20°	1428	1323	1262
25°	1400	1251	1174
30°	1364	1176	1063
35°	1327	1095	966
40°	1291	1012	854
45°	1248	920	752
50°	1204	826	653
55°	1158	726	558
60°	1105	622	459
65°	1044	516	414
70°	969	416	376
75°	876	368	343
80°	741	311	299
85°	518	210	229

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1248 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	3.2
10°-20°	589.7	8.7
20°-30°	827.9	12.1
30°-40°	902.4	13.2
40°-50°	829.4	12.2
50°-60°	651.4	9.6
60°-70°	424.0	6.2
70°-80°	218.2	3.2
80°-90°	57.8	0.8
90°-100°	46.5	0.7
100°-110°	147.8	2.2
110°-120°	252.9	3.7
120°-130°	332.6	4.9
130°-140°	373.3	5.5
140°-150°	366.1	5.4
150°-160°	307.1	4.5
160°-170°	203.7	3.0
170°-180°	71.2	1.0
0°-30°	1632.3	23.9
0°-40°	2534.7	37.2
0°-60°	4015.5	58.9
0°-90°	4715.6	69.2
90°-120°	447.2	6.6
90°-150°	1519.2	22.3
90°-180°	2101.0	30.8
0°-180°	6816.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	8	22	21	22	7
95°	33	40	41	41	40	37
105°	136	138	140	141	141	144
115°	254	257	256	256	254	251
125°	369	375	373	371	370	330
135°	477	484	486	485	483	369
145°	580	584	588	588	586	362
155°	663	665	667	670	668	305
165°	721	720	720	725	722	203
175°	750	748	747	752	748	71
180°	752	752	752	752	752	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	0.7	8.2	22.2	20.8	21.5
92.5°	14.0	19.0	19.7	20.4	20.4
95°	33.1	39.5	40.6	40.6	39.5
97.5°	55.1	60.9	63.5	63.5	63.5
100°	80.4	85.6	87.5	87.5	86.8
102.5°	107.2	111.1	113.5	114.2	113.5
105°	136.4	138.2	139.6	140.7	140.7
107.5°	165.4	168.1	168.1	168.6	165.4
110°	193.5	197.2	197.2	197.2	195.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	223.9	227.8	227.0	225.2	223.9
115°	253.8	257.4	256.3	255.6	253.8
117.5°	283.4	288.4	285.3	283.4	281.6
120°	313.4	318.4	313.4	313.4	311.3
122.5°	340.6	346.9	343.7	341.9	340.6
125°	369.2	374.8	373.0	370.9	370.3
127.5°	397.0	404.0	401.6	398.8	397.0
130°	423.0	431.2	430.1	428.7	426.2
132.5°	452.3	458.6	459.1	455.9	454.1
135°	477.4	484.4	485.8	485.1	483.3
137.5°	505.5	511.2	512.3	511.9	509.1
140°	530.2	535.9	539.1	539.1	536.5
142.5°	555.6	561.3	563.1	563.8	561.3
145°	579.6	584.2	587.8	588.4	586.0
147.5°	601.2	606.8	609.5	610.7	608.2
150°	623.4	627.2	629.7	631.8	629.7
152.5°	643.1	646.9	650.1	652.6	650.1
155°	662.8	664.6	666.6	669.8	667.8
157.5°	679.8	681.1	682.3	686.8	683.7
160°	695.0	696.3	697.0	700.8	698.1
162.5°	709.0	709.0	709.7	714.0	710.8
165°	721.0	720.3	720.3	724.8	721.7
167.5°	731.9	729.8	729.8	734.4	731.2
170°	740.1	738.2	737.6	742.1	738.2
172.5°	745.7	743.9	743.2	747.7	743.9
175°	750.3	748.5	747.1	751.6	747.7
177.5°	752.7	750.9	749.6	753.4	749.6
180°	751.6	751.6	751.6	751.6	751.6

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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	10.17	11.19	10.95	11.99	12.96	6.13	7.15	6.91	7.95	8.92
	3H	11.87	12.78	12.66	13.59	14.59	7.34	8.25	8.13	9.05	10.05
	4H	12.49	13.35	13.30	14.16	15.17	7.80	8.65	8.61	9.47	10.48
	6H	12.93	13.71	13.75	14.54	15.56	8.13	8.92	8.95	9.74	10.77
	8H	13.06	13.81	13.89	14.65	15.68	8.23	8.98	9.06	9.82	10.84
	12H	13.13	13.85	13.97	14.68	15.73	8.28	8.99	9.11	9.83	10.88
4H	2H	10.21	11.07	11.03	11.88	12.90	6.75	7.61	7.57	8.43	9.44
	3H	12.06	12.78	12.89	13.63	14.65	8.12	8.83	8.95	9.68	10.71
	4H	12.77	13.41	13.61	14.26	15.32	8.68	9.33	9.52	10.17	11.23
	6H	13.30	13.86	14.16	14.73	15.79	9.11	9.67	9.97	10.54	11.60
	8H	13.48	14.00	14.34	14.87	15.94	9.24	9.76	10.10	10.63	11.70
	12H	13.59	14.06	14.47	14.94	16.02	9.32	9.79	10.20	10.67	11.75
8H	4H	12.75	13.27	13.61	14.14	15.21	8.98	9.50	9.84	10.36	11.44
	6H	13.33	13.76	14.22	14.67	15.74	9.50	9.93	10.39	10.84	11.92
	8H	13.55	13.93	14.45	14.84	15.93	9.70	10.08	10.60	10.98	12.07
	12H	13.70	14.04	14.60	14.93	16.08	9.83	10.16	10.73	11.06	12.20
12H	4H	12.71	13.18	13.59	14.07	15.14	8.99	9.46	9.87	10.35	11.42
	6H	13.31	13.69	14.20	14.59	15.68	9.56	9.94	10.45	10.84	11.93
	8H	13.54	13.87	14.44	14.77	15.91	9.78	10.11	10.68	11.01	12.15