

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: P902256

Luminaire Tested: DFN2DIP-4P3F0-060D020US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902256
REPORT IS A COMBINATION OF REPORTS P899038 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D020US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

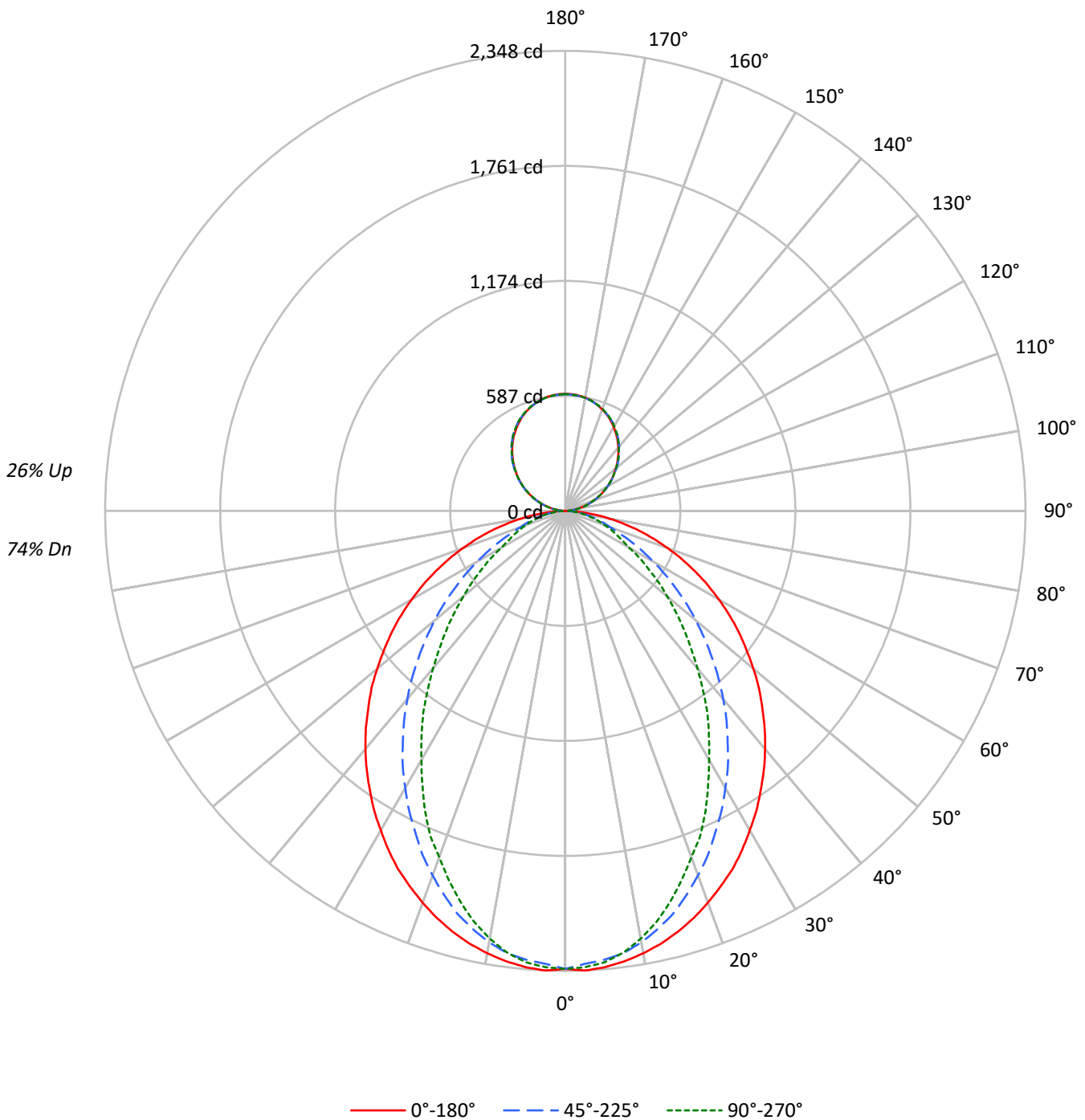
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6475.2 lumens
Efficiency: N/A
Efficacy: 83.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 77.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78	78	78	78	74
1	104	100	96	93	99	95	92	89	86	84	81	78	76	74	70	69	68	68	68	68	64
2	95	88	82	77	90	84	79	74	76	72	68	69	66	63	63	60	58	58	58	58	55
3	87	78	71	65	83	75	68	63	68	63	58	62	58	54	56	53	50	50	50	50	47
4	80	70	62	56	76	67	60	54	61	55	51	56	51	47	51	47	44	44	44	44	41
5	74	63	54	48	70	60	53	47	55	49	44	51	45	42	46	42	39	39	39	39	36
6	69	57	48	43	65	54	47	41	50	44	39	46	41	37	42	38	35	35	35	35	32
7	64	51	43	38	61	49	42	37	46	39	35	42	37	33	39	34	31	31	31	31	29
8	59	47	39	34	57	45	38	33	42	36	31	39	34	30	36	31	28	28	28	28	26
9	56	43	36	31	53	42	35	30	39	33	28	36	31	27	33	29	26	26	26	26	24
10	52	40	33	28	50	39	32	27	36	30	26	33	28	25	31	27	23	23	23	23	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2664	2664	2664
5°	2666	2620	2637
10°	2638	2567	2551
15°	2600	2480	2417
20°	2550	2361	2254
25°	2500	2229	2096
30°	2432	2093	1896
35°	2365	1947	1720
40°	2297	1796	1519
45°	2219	1630	1337
50°	2137	1461	1159
55°	2052	1282	988
60°	1953	1094	812
65°	1840	903	730
70°	1701	725	660
75°	1528	636	598
80°	1277	528	516
85°	866	344	383

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2219 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	3.4
10°-20°	601.3	9.3
20°-30°	844.3	13.0
30°-40°	920.3	14.2
40°-50°	845.9	13.1
50°-60°	664.3	10.3
60°-70°	432.4	6.7
70°-80°	222.6	3.4
80°-90°	58.5	0.9
90°-100°	36.9	0.6
100°-110°	117.2	1.8
110°-120°	200.6	3.1
120°-130°	263.8	4.1
130°-140°	296.1	4.6
140°-150°	290.4	4.5
150°-160°	243.6	3.8
160°-170°	161.5	2.5
170°-180°	56.5	0.9
0°-30°	1664.7	25.7
0°-40°	2585.0	39.9
0°-60°	4095.1	63.2
0°-90°	4808.6	74.3
90°-120°	354.7	5.5
90°-150°	1205.0	18.6
90°-180°	1667.0	25.7
0°-180°	6475.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	1	6	18	16	17	6
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
90°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2



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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	12.54	13.61	13.26	14.35	15.23	8.50	9.57	9.22	10.31	11.19
	3H	14.23	15.19	14.97	15.94	16.85	9.70	10.66	10.44	11.41	12.32
	4H	14.85	15.75	15.60	16.51	17.44	10.16	11.06	10.91	11.82	12.75
	6H	15.28	16.11	16.04	16.88	17.82	10.48	11.32	11.25	12.09	13.03
	8H	15.41	16.20	16.19	16.99	17.93	10.58	11.37	11.36	12.16	13.10
	12H	15.48	16.23	16.26	17.01	17.98	10.63	11.38	11.41	12.17	13.13
4H	2H	12.58	13.49	13.34	14.25	15.17	9.12	10.03	9.88	10.79	11.71
	3H	14.43	15.18	15.20	15.98	16.92	10.49	11.24	11.26	12.03	12.97
	4H	15.13	15.81	15.91	16.61	17.58	11.04	11.72	11.82	12.52	13.49
	6H	15.65	16.24	16.46	17.06	18.04	11.46	12.05	12.27	12.87	13.85
	8H	15.83	16.38	16.64	17.19	18.18	11.59	12.14	12.40	12.96	13.95
	12H	15.93	16.43	16.76	17.26	18.26	11.67	12.16	12.49	13.00	13.99
8H	4H	15.11	15.66	15.92	16.48	17.47	11.33	11.88	12.14	12.70	13.69
	6H	15.68	16.14	16.52	16.99	17.98	11.85	12.31	12.69	13.16	14.15
	8H	15.90	16.30	16.74	17.16	18.16	12.04	12.44	12.89	13.30	14.30
	12H	16.04	16.40	16.89	17.24	18.31	12.16	12.52	13.01	13.36	14.43
12H	4H	15.07	15.57	15.90	16.41	17.40	11.35	11.84	12.18	12.68	13.67
	6H	15.66	16.06	16.50	16.92	17.92	11.90	12.31	12.75	13.16	14.17
	8H	15.88	16.24	16.73	17.09	18.15	12.12	12.47	12.97	13.32	14.38