

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: P902868

Luminaire Tested: DFN2DIP-PN2F0-030D020US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902868
REPORT IS A COMBINATION OF REPORTS P899463 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D020US830-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

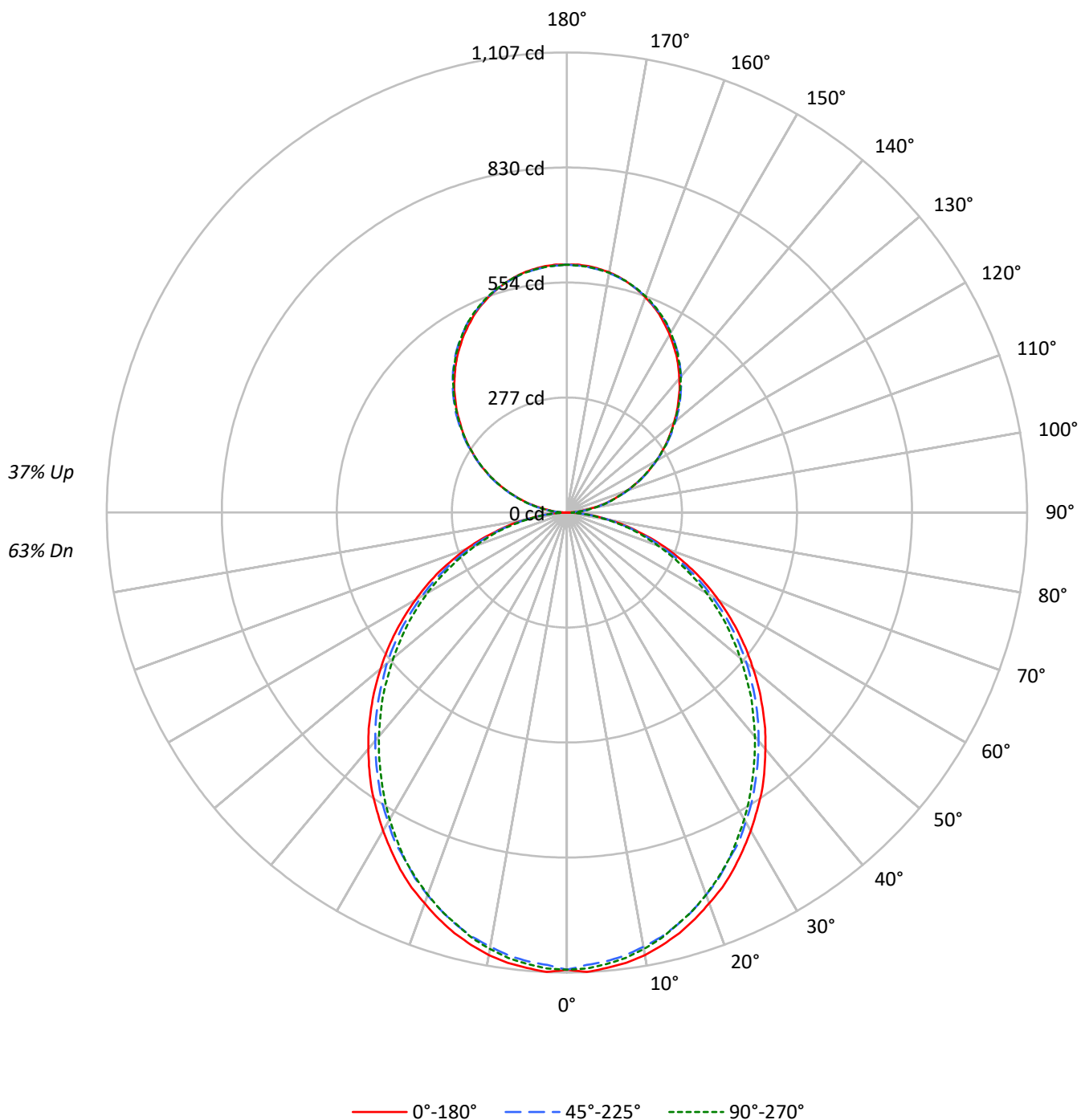
Lumens per Lamp: N/A
Luminaire Lumens: 4467.7 lumens
Efficiency: N/A
Efficacy: 102.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 43.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2383	2383	2383
5°	2383	2345	2362
10°	2360	2308	2327
15°	2321	2265	2273
20°	2271	2207	2218
25°	2220	2139	2156
30°	2158	2075	2077
35°	2098	2001	1994
40°	2026	1926	1915
45°	1953	1850	1834
50°	1873	1770	1741
55°	1790	1678	1654
60°	1695	1569	1554
65°	1592	1456	1436
70°	1460	1318	1309
75°	1278	1152	1187
80°	1057	940	964
85°	719	595	603

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1953 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	2.3
10°-20°	291.4	6.5
20°-30°	428.2	9.6
30°-40°	497.3	11.1
40°-50°	496.7	11.1
50°-60°	433.1	9.7
60°-70°	320.2	7.2
70°-80°	181.1	4.1
80°-90°	49.5	1.1
90°-100°	36.9	0.8
100°-110°	117.2	2.6
110°-120°	200.6	4.5
120°-130°	263.8	5.9
130°-140°	296.1	6.6
140°-150°	290.4	6.5
150°-160°	243.6	5.5
160°-170°	161.5	3.6
170°-180°	56.5	1.3
0°-30°	823.1	18.4
0°-40°	1320.4	29.6
0°-60°	2250.3	50.4
0°-90°	2801.1	62.7
90°-120°	354.7	7.9
90°-150°	1205.0	27.0
90°-180°	1667.0	37.3
0°-180°	4467.7	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	6	18	16	17	4
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°	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°	0.6	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	11.27	12.25	12.11	13.12	14.19	10.83	11.82	11.67	12.68	13.76
	3H	12.92	13.80	13.77	14.68	15.78	12.44	13.32	13.29	14.20	15.30
	4H	13.50	14.33	14.36	15.21	16.33	13.01	13.85	13.88	14.73	15.85
	6H	13.89	14.66	14.77	15.55	16.67	13.40	14.17	14.28	15.06	16.19
	8H	13.99	14.72	14.88	15.63	16.76	13.50	14.24	14.39	15.14	16.27
	12H	14.03	14.73	14.93	15.63	16.79	13.54	14.24	14.43	15.14	16.29
4H	2H	11.73	12.57	12.61	13.45	14.56	11.38	12.22	12.26	13.10	14.22
	3H	13.59	14.29	14.47	15.20	16.33	13.19	13.89	14.07	14.80	15.93
	4H	14.29	14.93	15.19	15.83	16.99	13.88	14.51	14.77	15.42	16.58
	6H	14.79	15.34	15.70	16.28	17.43	14.37	14.93	15.28	15.86	17.01
	8H	14.94	15.45	15.85	16.38	17.55	14.51	15.03	15.43	15.95	17.12
	12H	15.01	15.47	15.94	16.41	17.59	14.57	15.04	15.51	15.98	17.16
8H	4H	14.49	15.00	15.40	15.93	17.10	14.12	14.63	15.03	15.56	16.73
	6H	15.10	15.52	16.04	16.49	17.66	14.72	15.15	15.67	16.12	17.29
	8H	15.31	15.68	16.26	16.64	17.83	14.93	15.30	15.88	16.26	17.45
	12H	15.43	15.76	16.38	16.71	17.95	15.03	15.37	15.99	16.32	17.55
12H	4H	14.48	14.94	15.41	15.88	17.06	14.11	14.58	15.05	15.52	16.70
	6H	15.12	15.50	16.07	16.46	17.65	14.76	15.14	15.71	16.10	17.29
	8H	15.36	15.69	16.31	16.64	17.88	14.99	15.32	15.94	16.27	17.51