

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: P908312

Luminaire Tested: DFN2DIP-PN2F0-020D040US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908312
REPORT IS A COMBINATION OF REPORTS P899481 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D040US840-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

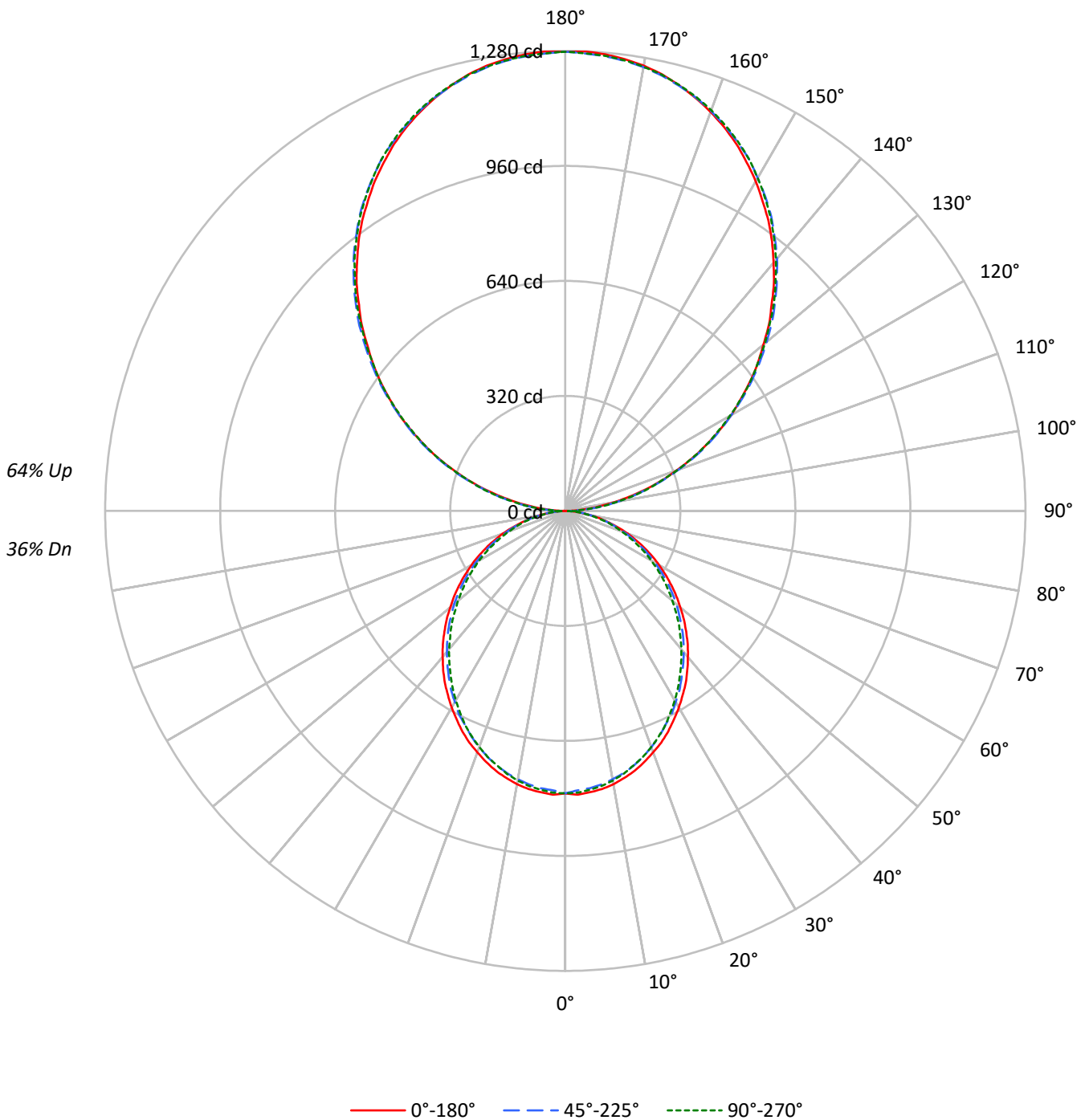
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5574.5 lumens
Efficiency: N/A
Efficacy: 117.9 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-Indirect

Input Watts (W): 47.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43	36	36	36	36
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36	30	30	30	30
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31	25	25	25	25
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26	21	21	21	21
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22	18	18	18	18
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20	16	16	16	16
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17	14	14	14	14
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15	12	12	12	12
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14	11	11	11	11
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12	10	10	10	10
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11	9	9	9	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1702	1702	1702
5°	1702	1675	1687
10°	1686	1649	1662
15°	1658	1618	1624
20°	1622	1576	1585
25°	1586	1528	1540
30°	1541	1482	1484
35°	1499	1429	1424
40°	1447	1375	1368
45°	1395	1321	1310
50°	1338	1264	1243
55°	1278	1198	1181
60°	1211	1121	1110
65°	1137	1040	1026
70°	1042	941	935
75°	913	823	848
80°	755	672	688
85°	512	425	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1723 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.0	1.3
10°-20°	208.1	3.7
20°-30°	305.8	5.5
30°-40°	355.2	6.4
40°-50°	354.8	6.4
50°-60°	309.4	5.5
60°-70°	228.7	4.1
70°-80°	129.4	2.3
80°-90°	37.8	0.7
90°-100°	79.1	1.4
100°-110°	251.2	4.5
110°-120°	429.8	7.7
120°-130°	565.3	10.1
130°-140°	634.5	11.4
140°-150°	622.2	11.2
150°-160°	522.0	9.4
160°-170°	346.2	6.2
170°-180°	121.0	2.2
0°-30°	587.9	10.5
0°-40°	943.2	16.9
0°-60°	1607.3	28.8
0°-90°	2003.2	35.9
90°-120°	760.1	13.6
90°-150°	2582.2	46.3
90°-180°	3571.0	64.1
0°-180°	5574.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	786	786	786	786	786	
5°	786	783	775	781	779	75
15°	748	744	734	737	733	211
25°	677	671	658	660	658	312
35°	584	577	564	560	556	365
45°	475	470	459	450	447	367
55°	360	355	346	337	333	322
65°	243	238	231	224	220	240
75°	127	126	122	117	119	135
85°	31	30	30	27	26	35
90°	1	14	38	35	37	5
95°	56	67	69	69	67	63
105°	232	235	237	239	239	245
115°	431	438	436	434	431	427
125°	627	637	634	630	629	561
135°	812	823	826	825	822	627
145°	985	993	999	1000	996	616
155°	1126	1130	1133	1138	1135	519
165°	1226	1224	1224	1232	1227	346
175°	1275	1272	1270	1278	1271	121
180°	1278	1278	1278	1278	1278	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	785.9	785.9	785.9	785.9	785.9
2.5°	790.4	786.7	778.3	785.9	784.5
5°	785.9	782.9	774.6	780.6	779.1
7.5°	780.6	776.1	767.8	773.9	772.3
10°	772.3	767.1	758.0	764.0	761.7
12.5°	760.9	756.5	747.4	751.1	749.6
15°	748.1	743.7	733.8	736.8	733.1
17.5°	732.3	727.8	717.9	721.6	717.9
20°	714.9	710.3	699.7	702.1	699.0
22.5°	697.5	690.7	680.9	680.9	679.3
25°	677.1	671.1	658.2	659.6	658.2
27.5°	654.4	649.1	639.3	637.1	633.3
30°	631.8	625.7	614.4	612.2	609.0
32.5°	607.5	603.1	591.0	586.4	583.4
35°	584.2	576.6	564.5	560.0	556.1
37.5°	557.7	550.9	538.8	533.5	529.7
40°	530.5	524.4	512.3	505.6	502.5
42.5°	504.0	498.0	485.9	478.4	473.8
45°	475.3	470.1	458.7	450.4	447.4
47.5°	447.4	442.1	430.0	421.6	417.2
50°	417.9	414.1	403.5	392.9	389.2
52.5°	389.2	383.8	374.1	365.8	360.5
55°	359.7	355.2	346.1	337.1	333.3
57.5°	330.2	326.5	316.6	307.6	304.5
60°	300.7	297.8	287.2	278.8	276.6
62.5°	272.1	266.7	259.2	251.7	248.6
65°	242.6	238.0	230.6	223.7	219.9
67.5°	212.4	208.5	201.8	196.5	193.5
70°	184.4	181.4	174.5	169.3	166.3
72.5°	155.7	152.7	148.9	143.6	141.4
75°	126.9	125.5	121.6	117.1	118.7
77.5°	101.3	98.3	96.6	94.4	92.2
80°	75.6	74.8	73.3	71.0	69.5
82.5°	51.4	51.4	50.7	47.7	47.7
85°	30.9	30.2	29.5	27.2	26.5
87.5°	13.6	12.1	10.6	8.4	7.6
90°	1.1	13.8	37.8	35.4	36.6
92.5°	23.8	32.3	33.5	34.6	34.6
95°	56.2	67.1	69.0	69.0	67.1
97.5°	93.6	103.6	107.9	107.9	107.9
100°	136.7	145.6	148.7	148.7	147.5
102.5°	182.2	188.7	193.0	194.1	193.0
105°	231.9	234.9	237.2	239.1	239.1
107.5°	281.1	285.8	285.8	286.5	281.1
110°	328.9	335.1	335.1	335.1	332.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	380.5	387.1	385.9	382.8	380.5
115°	431.3	437.6	435.6	434.4	431.3
117.5°	481.8	490.3	484.9	481.8	478.8
120°	532.7	541.1	532.7	532.7	529.2
122.5°	578.9	589.7	584.3	581.2	578.9
125°	627.4	637.0	634.0	630.5	629.3
127.5°	674.8	686.7	682.5	677.8	674.8
130°	719.0	733.0	731.0	728.7	724.5
132.5°	768.7	779.5	780.3	774.9	771.8
135°	811.5	823.4	825.8	824.6	821.5
137.5°	859.3	868.9	870.8	870.0	865.5
140°	901.2	910.9	916.3	916.3	912.0
142.5°	944.4	954.0	957.0	958.3	954.0
145°	985.2	992.9	999.1	1000.3	996.0
147.5°	1021.8	1031.4	1036.0	1037.9	1033.7
150°	1059.6	1066.1	1070.4	1073.8	1070.4
152.5°	1093.1	1099.5	1105.0	1109.2	1105.0
155°	1126.5	1129.6	1133.1	1138.5	1135.0
157.5°	1155.5	1157.7	1159.6	1167.4	1162.0
160°	1181.2	1183.6	1184.7	1191.2	1186.6
162.5°	1205.1	1205.1	1206.3	1213.6	1208.2
165°	1225.6	1224.4	1224.4	1232.0	1226.7
167.5°	1244.1	1240.5	1240.5	1248.3	1242.8
170°	1257.9	1254.8	1253.6	1261.3	1254.8
172.5°	1267.5	1264.5	1263.2	1271.0	1264.5
175°	1275.3	1272.1	1269.8	1277.5	1271.0
177.5°	1279.5	1276.4	1274.0	1280.6	1274.0
180°	1277.5	1277.5	1277.5	1277.5	1277.5



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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	7.54	8.29	8.61	9.36	10.82	7.10	7.85	8.17	8.92	10.38
	3H	9.17	9.84	10.25	10.92	12.40	8.69	9.36	9.77	10.44	11.92
	4H	9.74	10.38	10.83	11.46	12.94	9.26	9.89	10.35	10.97	12.46
	6H	10.12	10.70	11.22	11.79	13.28	9.63	10.22	10.73	11.30	12.80
	8H	10.21	10.77	11.31	11.87	13.36	9.72	10.28	10.83	11.38	12.87
	12H	10.25	10.78	11.36	11.87	13.38	9.76	10.28	10.86	11.38	12.89
4H	2H	7.98	8.61	9.07	9.69	11.18	7.63	8.26	8.72	9.34	10.83
	3H	9.81	10.34	10.91	11.45	12.94	9.41	9.94	10.51	11.05	12.54
	4H	10.50	10.99	11.61	12.09	13.60	10.09	10.57	11.20	11.67	13.19
	6H	10.99	11.41	12.11	12.53	14.04	10.57	10.99	11.69	12.11	13.62
	8H	11.13	11.52	12.24	12.63	14.16	10.70	11.09	11.82	12.21	13.73
	12H	11.19	11.54	12.32	12.67	14.20	10.75	11.11	11.89	12.23	13.76
8H	4H	10.68	11.07	11.79	12.18	13.71	10.31	10.70	11.42	11.81	13.34
	6H	11.28	11.60	12.42	12.76	14.28	10.91	11.23	12.04	12.38	13.91
	8H	11.49	11.77	12.63	12.90	14.45	11.11	11.39	12.25	12.52	14.07
	12H	11.60	11.85	12.75	12.98	14.56	11.20	11.45	12.35	12.58	14.16
12H	4H	10.66	11.01	11.79	12.13	13.67	10.29	10.65	11.43	11.77	13.30
	6H	11.30	11.59	12.45	12.72	14.26	10.94	11.22	12.08	12.36	13.90
	8H	11.53	11.77	12.67	12.91	14.48	11.16	11.40	12.30	12.54	14.11