

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: P924250

Luminaire Tested: DFN2DIP-HX2F0-020D040US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924250
REPORT IS A COMBINATION OF REPORTS P899171 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D040US950-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

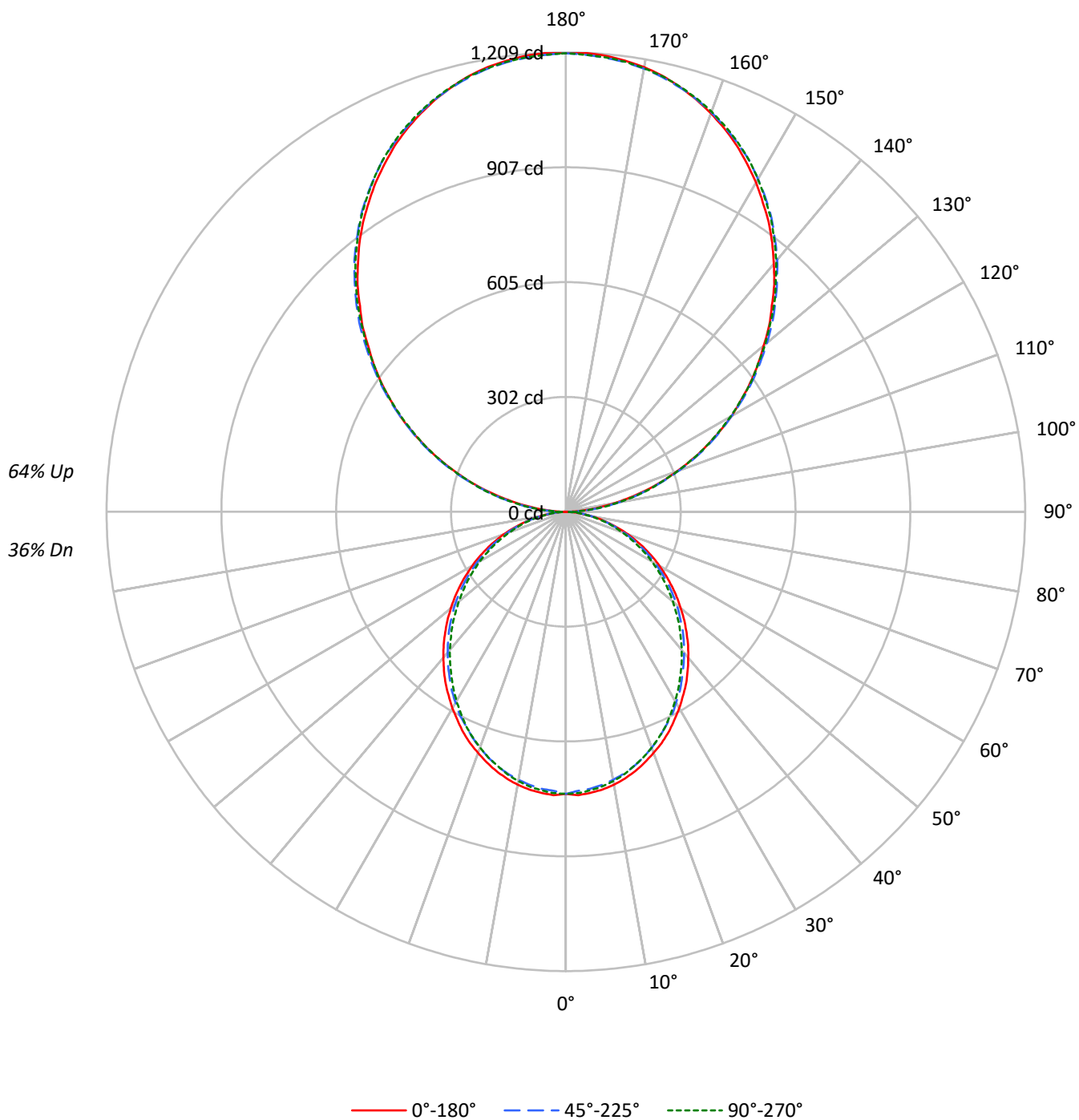
Lumens per Lamp: N/A
Luminaire Lumens: 5266.1 lumens
Efficiency: N/A
Efficacy: 118.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 44.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1749	1749	1749
5°	1749	1721	1733
10°	1732	1693	1707
15°	1704	1661	1667
20°	1667	1618	1626
25°	1630	1568	1579
30°	1584	1521	1521
35°	1540	1466	1460
40°	1487	1410	1401
45°	1434	1354	1341
50°	1376	1295	1272
55°	1314	1227	1207
60°	1245	1147	1133
65°	1169	1063	1046
70°	1072	961	951
75°	939	838	859
80°	778	683	693
85°	527	429	429

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1617 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.9	1.3
10°-20°	196.6	3.7
20°-30°	288.9	5.5
30°-40°	335.6	6.4
40°-50°	335.2	6.4
50°-60°	292.2	5.5
60°-70°	216.0	4.1
70°-80°	122.2	2.3
80°-90°	35.7	0.7
90°-100°	74.7	1.4
100°-110°	237.3	4.5
110°-120°	406.1	7.7
120°-130°	534.0	10.1
130°-140°	599.4	11.4
140°-150°	587.8	11.2
150°-160°	493.1	9.4
160°-170°	327.0	6.2
170°-180°	114.3	2.2
0°-30°	555.4	10.5
0°-40°	891.0	16.9
0°-60°	1518.4	28.8
0°-90°	1892.4	35.9
90°-120°	718.0	13.6
90°-150°	2439.3	46.3
90°-180°	3374.0	64.1
0°-180°	5266.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	742	742	742	742	742	
5°	742	740	732	737	736	70
15°	707	702	693	696	692	199
25°	640	634	622	623	622	294
35°	552	545	533	529	525	345
45°	449	444	433	426	423	347
55°	340	336	327	318	315	304
65°	229	225	218	211	208	227
75°	120	119	115	111	112	128
85°	29	28	28	26	25	33
90°	1	13	36	34	34	5
95°	53	63	65	65	63	59
105°	219	222	224	226	226	231
115°	408	413	412	410	408	403
125°	593	602	599	596	594	530
135°	767	778	780	779	776	593
145°	931	938	944	945	941	582
155°	1064	1067	1070	1076	1072	490
165°	1158	1157	1157	1164	1159	327
175°	1205	1202	1200	1207	1201	114
180°	1207	1207	1207	1207	1207	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	742.4	742.4	742.4	742.4	742.4
2.5°	746.7	743.2	735.2	742.4	741.1
5°	742.4	739.6	731.7	737.4	736.0
7.5°	737.4	733.1	725.3	731.1	729.6
10°	729.6	724.7	716.1	721.7	719.6
12.5°	718.8	714.6	706.1	709.6	708.2
15°	706.7	702.5	693.2	696.0	692.5
17.5°	691.7	687.5	678.2	681.7	678.2
20°	675.3	671.0	661.0	663.2	660.4
22.5°	658.9	652.5	643.2	643.2	641.8
25°	639.7	633.9	621.8	623.2	621.8
27.5°	618.2	613.2	604.0	601.9	598.3
30°	596.8	591.1	580.4	578.3	575.4
32.5°	573.9	569.7	558.3	554.0	551.1
35°	551.9	544.7	533.3	529.0	525.4
37.5°	526.9	520.4	509.0	504.0	500.4
40°	501.1	495.4	484.0	477.7	474.7
42.5°	476.1	470.4	459.1	451.9	447.6
45°	449.0	444.1	433.3	425.5	422.6
47.5°	422.6	417.7	406.2	398.3	394.1
50°	394.8	391.2	381.2	371.2	367.7
52.5°	367.7	362.6	353.4	345.5	340.6
55°	339.8	335.5	326.9	318.4	314.8
57.5°	312.0	308.4	299.1	290.6	287.6
60°	284.1	281.3	271.3	263.4	261.3
62.5°	257.0	252.0	244.9	237.7	234.9
65°	229.2	224.9	217.8	211.3	207.8
67.5°	200.6	197.0	190.6	185.6	182.8
70°	174.2	171.3	164.9	159.9	157.1
72.5°	147.1	144.2	140.6	135.7	133.6
75°	119.9	118.6	114.9	110.7	112.1
77.5°	95.7	92.8	91.3	89.2	87.1
80°	71.5	70.7	69.3	67.1	65.6
82.5°	48.6	48.6	47.9	45.0	45.0
85°	29.2	28.5	27.9	25.7	25.0
87.5°	12.9	11.4	10.0	7.9	7.2
90°	1.0	13.1	35.7	33.5	34.5
92.5°	22.5	30.5	31.7	32.7	32.7
95°	53.1	63.3	65.2	65.2	63.3
97.5°	88.4	97.9	101.9	101.9	101.9
100°	129.2	137.6	140.4	140.4	139.4
102.5°	172.1	178.3	182.3	183.4	182.3
105°	219.0	221.9	224.1	225.9	225.9
107.5°	265.6	270.0	270.0	270.6	265.6
110°	310.7	316.5	316.5	316.5	313.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	359.5	365.7	364.5	361.7	359.5
115°	407.5	413.4	411.5	410.4	407.5
117.5°	455.2	463.2	458.1	455.2	452.3
120°	503.2	511.2	503.2	503.2	499.9
122.5°	546.8	557.0	552.0	549.0	546.8
125°	592.7	601.8	598.9	595.6	594.5
127.5°	637.5	648.7	644.7	640.3	637.5
130°	679.2	692.4	690.6	688.4	684.4
132.5°	726.2	736.4	737.2	732.0	729.1
135°	766.6	777.9	780.1	778.9	776.1
137.5°	811.8	820.8	822.6	821.9	817.6
140°	851.3	860.5	865.6	865.6	861.6
142.5°	892.2	901.2	904.1	905.3	901.2
145°	930.7	938.0	943.8	944.9	940.9
147.5°	965.3	974.3	978.7	980.5	976.5
150°	1000.9	1007.1	1011.1	1014.4	1011.1
152.5°	1032.6	1038.7	1043.9	1047.9	1043.9
155°	1064.2	1067.1	1070.4	1075.5	1072.2
157.5°	1091.6	1093.7	1095.5	1102.8	1097.7
160°	1115.9	1118.1	1119.1	1125.3	1121.0
162.5°	1138.4	1138.4	1139.6	1146.4	1141.4
165°	1157.8	1156.6	1156.6	1163.9	1158.8
167.5°	1175.2	1171.9	1171.9	1179.2	1174.1
170°	1188.3	1185.3	1184.3	1191.5	1185.3
172.5°	1197.4	1194.5	1193.4	1200.7	1194.5
175°	1204.7	1201.8	1199.6	1206.8	1200.7
177.5°	1208.7	1205.8	1203.6	1209.8	1203.6
180°	1206.8	1206.8	1206.8	1206.8	1206.8

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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	7.61	8.36	8.68	9.43	10.89	7.19	7.94	8.26	9.01	10.47
	3H	9.24	9.91	10.32	10.99	12.47	8.78	9.45	9.86	10.53	12.01
	4H	9.81	10.44	10.90	11.52	13.01	9.35	9.98	10.44	11.06	12.55
	6H	10.18	10.77	11.28	11.85	13.35	9.72	10.31	10.82	11.39	12.89
	8H	10.27	10.83	11.38	11.93	13.42	9.81	10.37	10.92	11.47	12.96
	12H	10.31	10.84	11.42	11.93	13.44	9.85	10.37	10.95	11.47	12.98
4H	2H	8.05	8.69	9.15	9.77	11.25	7.71	8.35	8.81	9.43	10.91
	3H	9.88	10.41	10.98	11.52	13.01	9.49	10.03	10.60	11.13	12.63
	4H	10.57	11.05	11.68	12.15	13.67	10.17	10.66	11.28	11.76	13.28
	6H	11.05	11.47	12.17	12.59	14.10	10.66	11.08	11.77	12.20	13.71
	8H	11.19	11.58	12.30	12.69	14.22	10.79	11.18	11.91	12.29	13.82
	12H	11.24	11.60	12.38	12.72	14.25	10.84	11.19	11.97	12.32	13.85
8H	4H	10.74	11.13	11.86	12.25	13.77	10.39	10.78	11.51	11.90	13.42
	6H	11.34	11.66	12.48	12.82	14.34	10.99	11.31	12.13	12.47	13.99
	8H	11.54	11.83	12.69	12.96	14.50	11.19	11.47	12.33	12.61	14.15
	12H	11.65	11.90	12.80	13.03	14.61	11.29	11.53	12.43	12.67	14.24
12H	4H	10.72	11.08	11.85	12.20	13.73	10.38	10.73	11.51	11.86	13.39
	6H	11.37	11.65	12.51	12.78	14.33	11.02	11.31	12.17	12.44	13.98
	8H	11.58	11.83	12.73	12.96	14.54	11.24	11.49	12.38	12.62	14.20