

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: P918834

Luminaire Tested: DFN2DIP-HX2F0-040D040US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918834
REPORT IS A COMBINATION OF REPORTS P899175 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D040US935-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

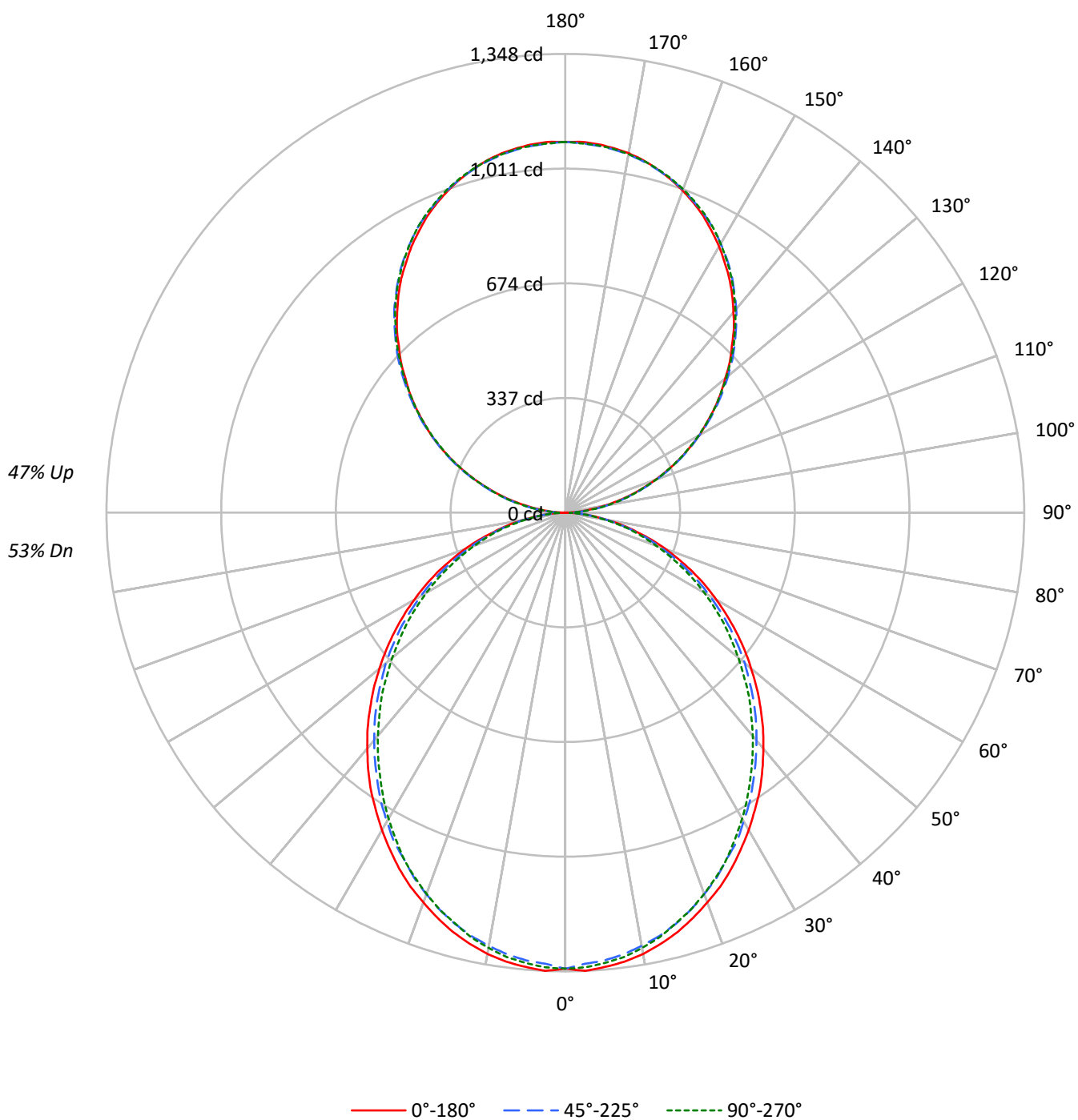
Lumens per Lamp: N/A
Luminaire Lumens: 6457.5 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3157	3157	3157
5°	3157	3106	3129
10°	3127	3057	3080
15°	3076	2999	3009
20°	3009	2921	2935
25°	2942	2830	2851
30°	2859	2745	2746
35°	2780	2646	2635
40°	2685	2545	2529
45°	2588	2444	2420
50°	2483	2337	2295
55°	2373	2215	2178
60°	2247	2070	2045
65°	2109	1918	1888
70°	1934	1734	1716
75°	1695	1513	1551
80°	1403	1231	1252
85°	953	773	774

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2588 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	2.0
10°-20°	354.9	5.5
20°-30°	521.5	8.1
30°-40°	605.7	9.4
40°-50°	605.0	9.4
50°-60°	527.5	8.2
60°-70°	389.9	6.0
70°-80°	220.6	3.4
80°-90°	61.3	0.9
90°-100°	67.4	1.0
100°-110°	214.2	3.3
110°-120°	366.5	5.7
120°-130°	482.0	7.5
130°-140°	541.0	8.4
140°-150°	530.5	8.2
150°-160°	445.0	6.9
160°-170°	295.1	4.6
170°-180°	103.2	1.6
0°-30°	1002.5	15.5
0°-40°	1608.3	24.9
0°-60°	2740.7	42.4
0°-90°	3412.6	52.8
90°-120°	648.0	10.0
90°-150°	2201.5	34.1
90°-180°	3045.0	47.2
0°-180°	6457.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	1	12	32	30	31	6
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	11.39	12.28	12.32	13.23	14.46	10.96	11.85	11.90	12.80	14.03
	3H	13.03	13.82	13.97	14.78	16.03	12.56	13.36	13.51	14.32	15.57
	4H	13.60	14.35	14.56	15.31	16.58	13.14	13.89	14.10	14.85	16.12
	6H	13.98	14.67	14.95	15.64	16.92	13.52	14.21	14.49	15.18	16.46
	8H	14.07	14.74	15.05	15.72	16.99	13.62	14.28	14.59	15.26	16.54
	12H	14.11	14.74	15.10	15.72	17.02	13.65	14.28	14.63	15.26	16.56
4H	2H	11.84	12.60	12.81	13.56	14.82	11.50	12.26	12.47	13.22	14.48
	3H	13.68	14.31	14.66	15.30	16.58	13.30	13.93	14.27	14.92	16.20
	4H	14.38	14.95	15.36	15.94	17.24	13.98	14.56	14.97	15.55	16.85
	6H	14.87	15.37	15.87	16.38	17.67	14.48	14.97	15.47	15.98	17.28
	8H	15.01	15.47	16.00	16.47	17.79	14.61	15.07	15.61	16.08	17.39
	12H	15.07	15.49	16.09	16.51	17.83	14.67	15.08	15.68	16.10	17.42
8H	4H	14.57	15.03	15.56	16.03	17.34	14.21	14.68	15.21	15.68	16.99
	6H	15.17	15.55	16.19	16.60	17.91	14.82	15.20	15.84	16.24	17.56
	8H	15.37	15.71	16.40	16.74	18.07	15.02	15.35	16.05	16.39	17.72
	12H	15.49	15.79	16.52	16.81	18.19	15.12	15.42	16.15	16.44	17.82
12H	4H	14.55	14.97	15.56	15.99	17.31	14.21	14.62	15.22	15.64	16.96
	6H	15.19	15.53	16.22	16.56	17.89	14.85	15.19	15.88	16.22	17.55
	8H	15.42	15.71	16.45	16.74	18.11	15.07	15.37	16.11	16.40	17.77