

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: P927266

Luminaire Tested: DFN2DIP-HX4F0-050D120US835-RLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927266
REPORT IS A COMBINATION OF REPORTS P900966 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D120US835-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

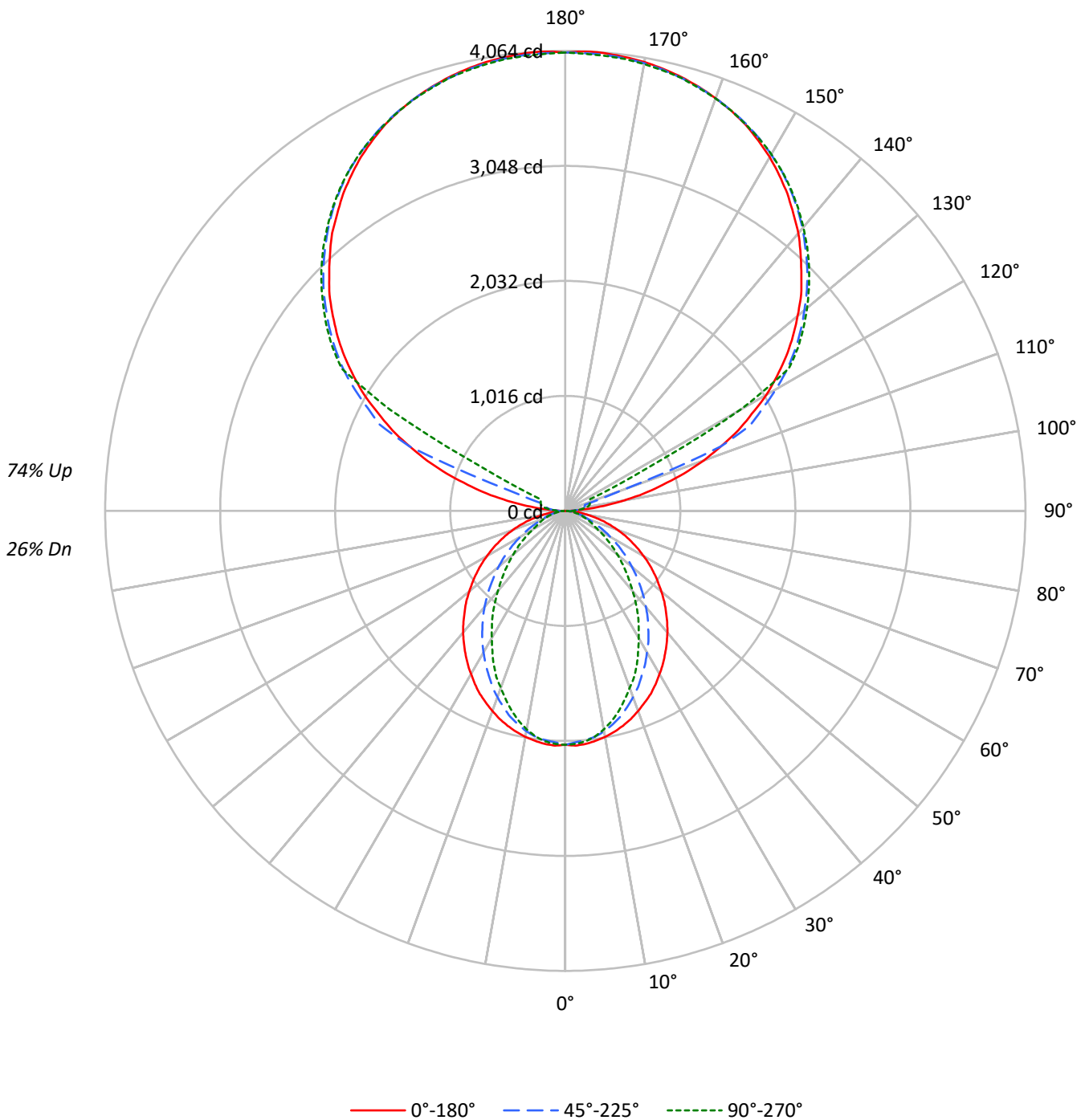
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16130.0 lumens
Efficiency: N/A
Efficacy: 115.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 139.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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				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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34	26				26
1	93	89	85	82	83	79	76	74	62	60	58	46	44	43	31	30	29	23				23
2	85	78	72	67	75	70	65	61	54	51	48	40	38	36	27	26	25	19				19
3	77	68	62	56	69	61	56	51	48	44	41	36	33	31	24	23	22	17				17
4	71	61	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19	15				15
5	65	54	46	41	58	49	42	37	38	34	30	29	26	23	20	18	17	13				13
6	60	48	41	35	53	44	37	32	35	30	26	26	23	20	18	16	15	11				11
7	55	44	36	31	49	39	33	28	31	27	23	24	20	18	17	15	13	10				10
8	51	39	32	27	46	36	29	25	28	24	20	22	18	16	15	13	12	9				9
9	48	36	29	24	42	33	26	22	26	21	18	20	17	14	14	12	11	8				8
10	44	33	26	21	40	30	24	20	24	19	16	18	15	13	13	11	10	8				8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1537	1537	1537
5°	1539	1512	1522
10°	1524	1483	1472
15°	1503	1434	1396
20°	1476	1367	1302
25°	1447	1291	1211
30°	1409	1213	1096
35°	1372	1130	995
40°	1334	1044	880
45°	1290	948	774
50°	1245	851	672
55°	1197	748	573
60°	1142	640	472
65°	1079	530	425
70°	1002	428	385
75°	906	377	350
80°	766	317	304
85°	536	212	229

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2080 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.2
10°-20°	531.7	3.3
20°-30°	746.5	4.6
30°-40°	813.7	5.0
40°-50°	747.9	4.6
50°-60°	587.3	3.6
60°-70°	382.3	2.4
70°-80°	196.8	1.2
80°-90°	57.4	0.4
90°-100°	133.5	0.8
100°-110°	497.8	3.1
110°-120°	1320.3	8.2
120°-130°	2189.8	13.6
130°-140°	2326.1	14.4
140°-150°	2161.8	13.4
150°-160°	1738.1	10.8
160°-170°	1119.9	6.9
170°-180°	385.5	2.4
0°-30°	1471.8	9.1
0°-40°	2285.5	14.2
0°-60°	3620.7	22.4
0°-90°	4257.1	26.4
90°-120°	1951.7	12.1
90°-150°	8629.4	53.5
90°-180°	11873.0	73.6
0°-180°	16130.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	3	35	58	73	79	15
95°	190	94	114	129	126	225
105°	891	979	179	211	223	952
115°	1685	1735	1808	451	240	1659
125°	2382	2421	2476	2497	2506	2125
135°	2948	2995	3021	3051	3045	2277
145°	3420	3417	3467	3487	3472	2139
155°	3766	3739	3775	3792	3769	1735
165°	3968	3950	3959	3980	3959	1121
175°	4058	4038	4044	4064	4035	386
180°	4050	4050	4050	4050	4050	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	2.8	35.1	58.5	73.4	79.0
92.5°	73.4	61.6	70.3	76.2	79.0
95°	190.3	93.6	114.1	129.1	126.0
97.5°	342.8	102.7	149.3	158.3	161.1
100°	518.8	117.3	167.0	190.3	196.3
102.5°	712.0	706.4	172.9	205.0	214.0
105°	890.8	978.9	178.9	210.9	222.7
107.5°	1098.9	1172.0	184.8	216.8	228.6
110°	1298.3	1359.6	512.9	219.9	231.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1485.9	1538.4	1488.7	225.5	234.5
115°	1684.9	1734.7	1808.1	451.3	240.5
117.5°	1857.9	1916.4	1966.5	1547.1	779.5
120°	2051.4	2095.2	2148.1	2183.3	1787.6
122.5°	2215.3	2262.3	2321.1	2338.5	2341.6
125°	2382.3	2420.6	2476.3	2496.8	2505.5
127.5°	2534.7	2575.8	2620.0	2649.2	2652.0
130°	2678.4	2725.4	2757.4	2789.8	2787.0
132.5°	2824.9	2863.2	2895.2	2921.7	2918.9
135°	2948.1	2995.1	3021.2	3050.8	3044.9
137.5°	3076.9	3112.0	3141.6	3170.8	3162.1
140°	3202.9	3226.5	3258.5	3285.0	3270.4
142.5°	3308.6	3329.2	3367.1	3390.4	3375.8
145°	3420.0	3416.9	3466.6	3487.2	3472.5
147.5°	3516.4	3507.7	3557.5	3572.1	3560.6
150°	3610.3	3589.8	3636.8	3654.2	3639.6
152.5°	3689.3	3666.0	3709.9	3727.6	3707.1
155°	3765.5	3739.4	3774.6	3792.0	3768.7
157.5°	3827.1	3803.8	3830.3	3850.8	3827.1
160°	3880.0	3862.3	3880.0	3897.4	3876.9
162.5°	3926.7	3909.3	3923.9	3944.4	3918.0
165°	3967.7	3950.3	3959.0	3979.6	3959.0
167.5°	4000.1	3982.3	3991.4	4011.9	3985.5
170°	4026.5	4008.8	4014.7	4035.2	4008.8
172.5°	4043.9	4026.5	4032.5	4053.0	4026.5
175°	4058.5	4038.0	4043.9	4064.5	4035.2
177.5°	4064.5	4043.9	4047.1	4067.6	4041.2
180°	4049.9	4049.9	4049.9	4049.9	4049.9



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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	5.89	6.56	7.03	7.68	9.26	1.86	2.53	3.00	3.66	5.23
	3H	7.55	8.15	8.70	9.29	10.88	3.04	3.64	4.19	4.77	6.36
	4H	8.15	8.72	9.31	9.86	11.45	3.48	4.05	4.64	5.19	6.78
	6H	8.57	9.09	9.73	10.23	11.83	3.80	4.32	4.96	5.46	7.06
	8H	8.69	9.19	9.86	10.34	11.94	3.88	4.38	5.05	5.53	7.13
	12H	8.75	9.22	9.92	10.37	11.99	3.92	4.39	5.09	5.54	7.16
4H	2H	5.88	6.45	7.05	7.59	9.18	2.44	3.00	3.60	4.14	5.73
	3H	7.70	8.17	8.87	9.34	10.94	3.77	4.25	4.94	5.41	7.01
	4H	8.39	8.82	9.56	9.97	11.60	4.32	4.75	5.49	5.90	7.53
	6H	8.89	9.27	10.07	10.44	12.06	4.73	5.10	5.90	6.27	7.89
	8H	9.07	9.41	10.24	10.58	12.21	4.85	5.20	6.03	6.37	8.00
	12H	9.16	9.47	10.35	10.65	12.28	4.91	5.23	6.10	6.40	8.04
8H	4H	8.34	8.69	9.52	9.85	11.49	4.58	4.93	5.76	6.10	7.73
	6H	8.90	9.19	10.10	10.40	12.03	5.10	5.38	6.29	6.59	8.22
	8H	9.12	9.37	10.32	10.55	12.20	5.29	5.54	6.49	6.72	8.37
	12H	9.25	9.47	10.46	10.65	12.34	5.40	5.62	6.61	6.80	8.49
12H	4H	8.29	8.60	9.48	9.78	11.41	4.58	4.90	5.77	6.07	7.71
	6H	8.88	9.13	10.08	10.31	11.96	5.15	5.40	6.35	6.58	8.23
	8H	9.09	9.31	10.30	10.49	12.18	5.35	5.57	6.56	6.75	8.44