

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: P903162

Luminaire Tested: DFN2DIP-PN4F0-040D080US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903162
REPORT IS A COMBINATION OF REPORTS P899682 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D080US830-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

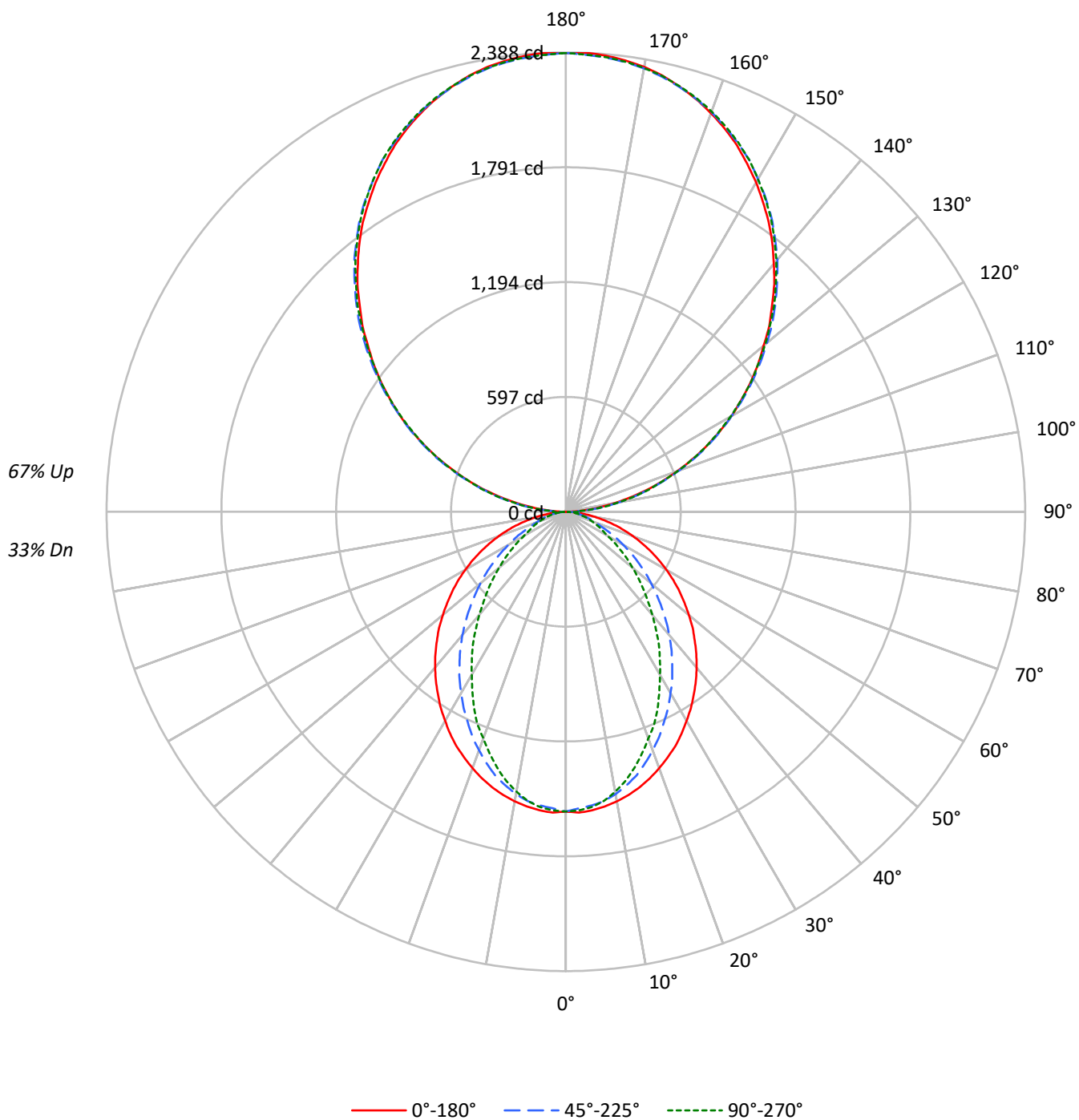
Lumens per Lamp: N/A
Luminaire Lumens: 9877.8 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 91.3
Input Voltage (V):
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1137	1137	1137
5°	1139	1120	1127
10°	1128	1098	1090
15°	1112	1062	1034
20°	1092	1012	964
25°	1071	956	897
30°	1043	898	812
35°	1015	837	738
40°	987	773	652
45°	954	702	574
50°	920	631	498
55°	885	554	425
60°	844	474	350
65°	797	393	315
70°	740	317	286
75°	668	280	261
80°	564	235	227
85°	393	158	172

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1867 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.5
10°-20°	400.9	4.1
20°-30°	562.8	5.7
30°-40°	613.5	6.2
40°-50°	563.9	5.7
50°-60°	442.9	4.5
60°-70°	288.3	2.9
70°-80°	148.4	1.5
80°-90°	44.7	0.5
90°-100°	147.6	1.5
100°-110°	468.9	4.7
110°-120°	802.4	8.1
120°-130°	1055.3	10.7
130°-140°	1184.5	12.0
140°-150°	1161.5	11.8
150°-160°	974.4	9.9
160°-170°	646.2	6.5
170°-180°	225.9	2.3
0°-30°	1109.8	11.2
0°-40°	1723.3	17.4
0°-60°	2730.1	27.6
0°-90°	3211.4	32.5
90°-120°	1418.8	14.4
90°-150°	4820.1	48.8
90°-180°	6666.0	67.5
0°-180°	9877.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	2	26	70	66	68	10
95°	105	125	129	129	125	117
105°	433	439	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1534	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2286	2286	2300	2290	645
175°	2380	2375	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.6	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	614.0	625.5	625.5	625.5	619.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.6	720.4	714.6	710.3
115°	805.2	816.7	813.1	811.0	805.2
117.5°	899.4	915.2	905.1	899.4	893.6
120°	994.3	1010.1	994.3	994.3	987.8
122.5°	1080.5	1100.7	1090.6	1084.9	1080.5
125°	1171.1	1189.1	1183.4	1176.9	1174.8
127.5°	1259.6	1281.9	1273.9	1265.4	1259.6
130°	1342.3	1368.1	1364.5	1360.3	1352.4
132.5°	1435.0	1455.1	1456.6	1446.5	1440.8
135°	1514.8	1537.1	1541.4	1539.3	1533.5
137.5°	1603.9	1621.9	1625.5	1624.1	1615.4
140°	1682.3	1700.3	1710.3	1710.3	1702.4
142.5°	1762.8	1780.8	1786.6	1788.8	1780.8
145°	1839.1	1853.4	1864.9	1867.1	1859.2
147.5°	1907.3	1925.3	1933.9	1937.6	1929.7
150°	1977.8	1990.0	1997.9	2004.4	1997.9
152.5°	2040.3	2052.6	2062.7	2070.6	2062.7
155°	2102.9	2108.7	2115.2	2125.2	2118.7
157.5°	2156.8	2161.2	2164.7	2179.1	2169.1
160°	2205.0	2209.3	2211.5	2223.6	2215.1
162.5°	2249.6	2249.6	2251.7	2265.4	2255.3
165°	2287.6	2285.5	2285.5	2299.9	2289.8
167.5°	2322.1	2315.7	2315.7	2330.1	2320.0
170°	2348.1	2342.3	2340.1	2354.6	2342.3
172.5°	2366.1	2360.3	2358.1	2372.5	2360.3
175°	2380.4	2374.6	2370.3	2384.7	2372.5
177.5°	2388.3	2382.6	2378.2	2390.5	2378.2
180°	2384.7	2384.7	2384.7	2384.7	2384.7

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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	5.70	6.41	6.80	7.50	9.00	1.66	2.37	2.76	3.46	4.97
	3H	7.37	8.00	8.48	9.10	10.62	2.84	3.47	3.95	4.58	6.10
	4H	7.98	8.57	9.09	9.68	11.20	3.29	3.89	4.41	4.99	6.52
	6H	8.39	8.94	9.52	10.05	11.59	3.60	4.15	4.73	5.26	6.80
	8H	8.52	9.04	9.65	10.16	11.69	3.69	4.21	4.82	5.34	6.87
	12H	8.58	9.07	9.71	10.19	11.74	3.73	4.23	4.87	5.34	6.90
4H	2H	5.70	6.30	6.83	7.40	8.93	2.25	2.84	3.37	3.95	5.47
	3H	7.52	8.02	8.65	9.15	10.69	3.59	4.08	4.72	5.21	6.75
	4H	8.21	8.67	9.35	9.79	11.35	4.13	4.59	5.26	5.70	7.26
	6H	8.72	9.12	9.87	10.26	11.81	4.54	4.93	5.68	6.08	7.63
	8H	8.90	9.26	10.04	10.40	11.96	4.67	5.03	5.81	6.17	7.73
	12H	8.99	9.32	10.15	10.47	12.04	4.73	5.06	5.89	6.20	7.78
8H	4H	8.17	8.54	9.31	9.67	11.24	4.40	4.77	5.54	5.90	7.47
	6H	8.74	9.04	9.90	10.21	11.78	4.92	5.22	6.08	6.39	7.96
	8H	8.95	9.22	10.12	10.37	11.95	5.11	5.37	6.27	6.53	8.11
	12H	9.09	9.32	10.26	10.47	12.09	5.22	5.45	6.39	6.60	8.22
12H	4H	8.12	8.45	9.27	9.59	11.16	4.40	4.73	5.56	5.88	7.45
	6H	8.71	8.97	9.88	10.13	11.71	4.97	5.23	6.13	6.38	7.97
	8H	8.93	9.16	10.10	10.31	11.93	5.17	5.40	6.34	6.55	8.17

END OF REPORT