

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: P925190

Luminaire Tested: DFN2DIP-PN4F0-100D050US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925190
REPORT IS A COMBINATION OF REPORTS P899640 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D050US950-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

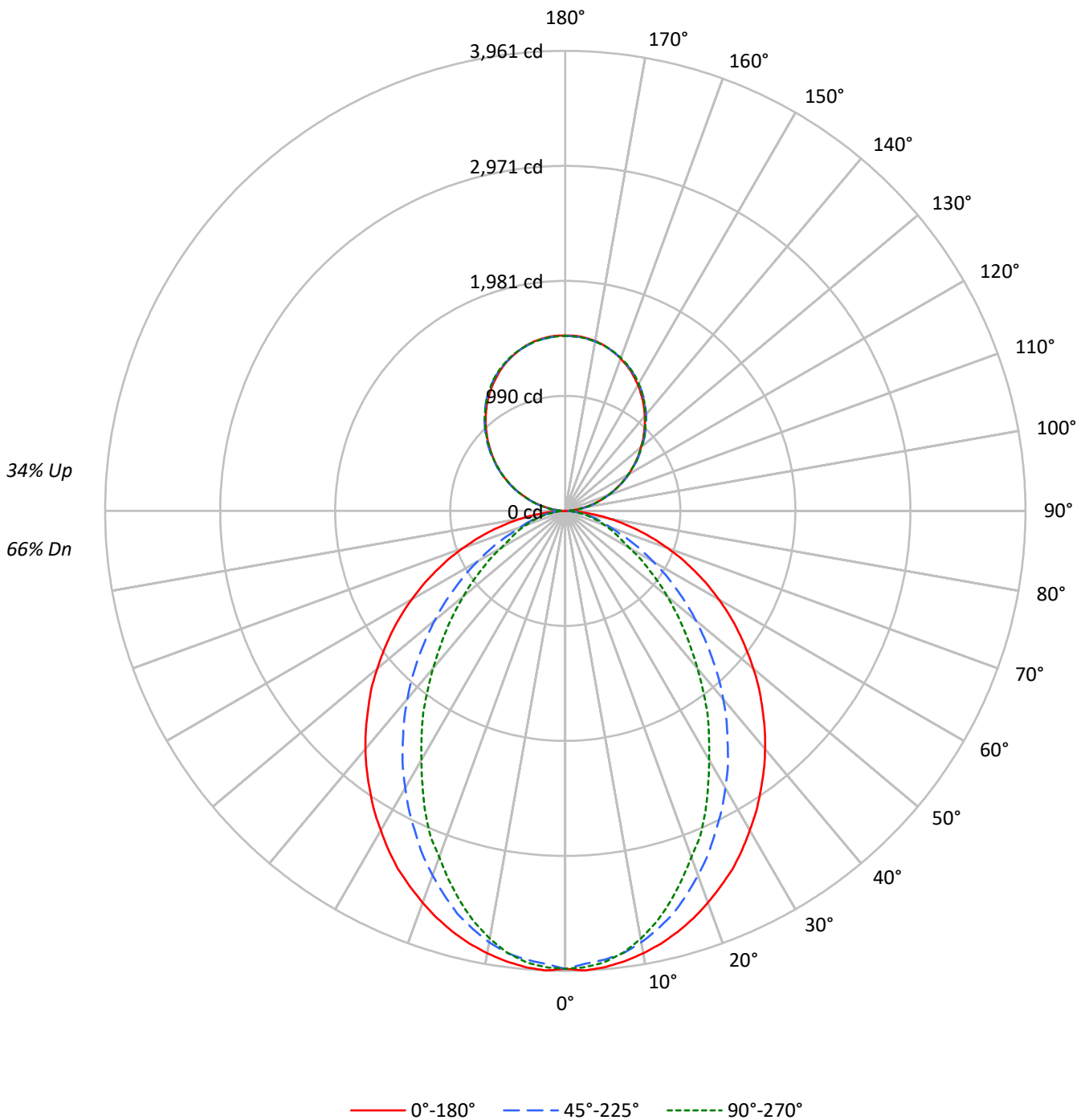
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12330.4 lumens
Efficiency: N/A
Efficacy: 89.0 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-Direct

Input Watts (W): 138.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66			
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61	57			
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52	49			
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45	42			
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40	36			
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35	32			
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31	29			
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28	26			
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25	23			
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23	21			
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21	19			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2878	2878	2878
5°	2883	2833	2851
10°	2854	2778	2759
15°	2815	2686	2616
20°	2763	2560	2440
25°	2710	2418	2271
30°	2638	2273	2056
35°	2568	2117	1866
40°	2497	1956	1650
45°	2414	1777	1453
50°	2328	1595	1261
55°	2239	1402	1076
60°	2136	1200	886
65°	2017	994	798
70°	1872	802	724
75°	1691	708	659
80°	1429	595	574
85°	995	399	434

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2414 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	369.5	3.0
10°-20°	1014.4	8.2
20°-30°	1424.2	11.6
30°-40°	1552.5	12.6
40°-50°	1426.9	11.6
50°-60°	1120.6	9.1
60°-70°	729.4	5.9
70°-80°	375.5	3.0
80°-90°	100.1	0.8
90°-100°	93.4	0.8
100°-110°	296.6	2.4
110°-120°	507.6	4.1
120°-130°	667.5	5.4
130°-140°	749.3	6.1
140°-150°	734.8	6.0
150°-160°	616.4	5.0
160°-170°	408.8	3.3
170°-180°	142.9	1.2
0°-30°	2808.2	22.8
0°-40°	4360.7	35.4
0°-60°	6908.2	56.0
0°-90°	8113.3	65.8
90°-120°	897.5	7.3
90°-150°	3049.2	24.7
90°-180°	4217.0	34.2
0°-180°	12330.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3943	3943	3943	3943	3943	
5°	3943	3925	3878	3911	3900	374
15°	3750	3711	3590	3522	3486	1057
25°	3404	3290	3054	2908	2854	1566
35°	2933	2751	2437	2212	2134	1836
45°	2398	2159	1784	1531	1445	1852
55°	1823	1545	1160	946	878	1629
65°	1231	942	621	500	489	1221
75°	656	407	285	260	257	694
85°	153	78	68	68	68	176
90°	1	16	45	42	43	12
95°	66	79	81	81	79	74
105°	274	277	280	282	282	289
115°	509	517	514	513	509	504
125°	741	752	749	744	743	662
135°	958	972	975	974	970	741
145°	1163	1172	1180	1181	1176	727
155°	1330	1334	1338	1344	1340	612
165°	1447	1446	1446	1455	1449	408
175°	1506	1502	1500	1509	1501	143
180°	1509	1509	1509	1509	1509	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3942.9	3942.9	3942.9	3942.9	3942.9
2.5°	3960.6	3942.9	3903.5	3939.4	3932.3
5°	3942.9	3925.0	3878.5	3910.7	3900.0
7.5°	3910.7	3889.5	3839.5	3853.5	3835.7
10°	3867.9	3842.9	3771.7	3760.8	3739.6
12.5°	3814.6	3782.3	3685.8	3664.6	3625.2
15°	3750.2	3710.8	3589.6	3521.9	3486.3
17.5°	3675.2	3618.0	3468.2	3389.8	3332.6
20°	3589.6	3518.1	3339.8	3250.9	3172.0
22.5°	3496.9	3414.7	3207.6	3086.6	3033.1
25°	3404.2	3289.9	3054.3	2908.2	2854.5
27.5°	3293.6	3172.0	2911.6	2743.9	2661.8
30°	3175.9	3039.9	2754.5	2572.8	2476.3
32.5°	3061.6	2897.2	2605.0	2390.7	2301.3
35°	2933.2	2751.1	2437.3	2212.4	2133.6
37.5°	2808.3	2611.8	2280.2	2033.7	1944.7
40°	2676.2	2462.3	2115.9	1862.6	1769.9
42.5°	2540.6	2312.3	1952.0	1687.7	1598.7
45°	2397.9	2158.6	1784.3	1530.6	1445.0
47.5°	2262.4	2009.1	1623.7	1370.0	1291.7
50°	2112.4	1859.2	1466.6	1220.2	1145.6
52.5°	1965.9	1698.3	1316.7	1081.2	1013.4
55°	1823.2	1545.0	1159.6	945.7	877.9
57.5°	1677.1	1391.6	1020.7	820.7	763.6
60°	1527.2	1241.7	874.2	692.4	635.3
62.5°	1381.0	1095.6	749.2	578.1	549.7
65°	1231.1	941.9	620.9	499.7	488.7
67.5°	1088.4	799.2	499.7	438.7	428.2
70°	938.4	660.3	413.7	378.2	363.9
72.5°	795.7	531.5	346.0	317.6	310.4
75°	656.4	406.6	285.4	260.4	257.0
77.5°	517.5	288.9	224.9	210.5	203.3
80°	388.8	207.1	171.1	157.1	157.1
82.5°	271.0	139.3	117.7	110.6	110.6
85°	153.3	78.3	67.7	67.7	67.7
87.5°	57.1	28.4	28.4	25.0	25.0
90°	1.3	16.4	44.6	41.9	43.2
92.5°	28.2	38.2	39.6	40.9	40.9
95°	66.4	79.2	81.4	81.4	79.2
97.5°	110.5	122.3	127.4	127.4	127.4
100°	161.4	171.9	175.5	175.5	174.2
102.5°	215.1	222.9	227.8	229.2	227.8
105°	273.8	277.4	280.2	282.4	282.4
107.5°	332.0	337.4	337.4	338.4	332.0
110°	388.4	395.7	395.7	395.7	392.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	449.3	457.1	455.7	452.1	449.3
115°	509.3	516.7	514.4	513.1	509.3
117.5°	569.0	579.0	572.6	569.0	565.3
120°	629.0	639.0	629.0	629.0	624.9
122.5°	683.5	696.3	689.9	686.3	683.5
125°	740.9	752.2	748.6	744.5	743.2
127.5°	796.8	810.9	805.9	800.4	796.8
130°	849.2	865.5	863.2	860.5	855.5
132.5°	907.8	920.5	921.5	915.1	911.5
135°	958.3	972.3	975.1	973.7	970.1
137.5°	1014.7	1026.0	1028.3	1027.4	1021.9
140°	1064.2	1075.6	1081.9	1081.9	1077.0
142.5°	1115.1	1126.6	1130.2	1131.5	1126.6
145°	1163.4	1172.5	1179.7	1181.1	1176.1
147.5°	1206.6	1218.0	1223.4	1225.7	1220.6
150°	1251.2	1258.9	1263.9	1268.0	1263.9
152.5°	1290.8	1298.5	1304.8	1309.8	1304.8
155°	1330.3	1333.9	1338.0	1344.4	1340.3
157.5°	1364.4	1367.1	1369.4	1378.5	1372.1
160°	1394.8	1397.6	1398.9	1406.7	1401.2
162.5°	1423.1	1423.1	1424.4	1433.1	1426.7
165°	1447.2	1445.8	1445.8	1454.9	1448.6
167.5°	1469.0	1464.9	1464.9	1474.0	1467.6
170°	1485.4	1481.8	1480.4	1489.5	1481.8
172.5°	1496.7	1493.1	1491.8	1500.8	1493.1
175°	1505.9	1502.2	1499.5	1508.6	1500.8
177.5°	1510.8	1507.2	1504.5	1512.2	1504.5
180°	1508.6	1508.6	1508.6	1508.6	1508.6



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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	12.19	13.17	13.00	14.00	15.03	8.15	9.13	8.97	9.96	10.99
	3H	13.88	14.75	14.71	15.60	16.65	9.35	10.23	10.18	11.07	12.13
	4H	14.50	15.32	15.34	16.17	17.24	9.81	10.64	10.66	11.49	12.55
	6H	14.93	15.69	15.79	16.55	17.63	10.14	10.90	11.00	11.76	12.84
	8H	15.06	15.78	15.93	16.66	17.74	10.23	10.96	11.10	11.83	12.91
	12H	15.13	15.82	16.00	16.68	17.79	10.28	10.97	11.16	11.84	12.95
4H	2H	12.22	13.05	13.07	13.90	14.97	8.77	9.59	9.62	10.44	11.51
	3H	14.07	14.75	14.93	15.64	16.72	10.13	10.82	10.99	11.70	12.78
	4H	14.77	15.39	15.64	16.27	17.38	10.69	11.31	11.56	12.19	13.30
	6H	15.30	15.83	16.18	16.74	17.85	11.11	11.65	12.00	12.56	13.67
	8H	15.47	15.98	16.37	16.88	18.00	11.25	11.75	12.14	12.65	13.77
	12H	15.58	16.03	16.49	16.95	18.08	11.32	11.77	12.23	12.69	13.82
8H	4H	14.75	15.25	15.64	16.15	17.27	10.98	11.48	11.87	12.38	13.51
	6H	15.32	15.74	16.24	16.68	17.80	11.50	11.92	12.42	12.86	13.99
	8H	15.54	15.91	16.47	16.84	17.99	11.70	12.06	12.63	13.00	14.14
	12H	15.69	16.01	16.62	16.94	18.13	11.82	12.15	12.75	13.07	14.27
12H	4H	14.71	15.16	15.62	16.08	17.21	10.99	11.44	11.90	12.36	13.49
	6H	15.30	15.67	16.23	16.60	17.74	11.55	11.92	12.48	12.85	14.00
	8H	15.53	15.85	16.46	16.78	17.97	11.77	12.10	12.70	13.02	14.22