

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: P905903

Luminaire Tested: DFN2DIP-PN4F0-040D110US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905903
REPORT IS A COMBINATION OF REPORTS P901256 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D110US835-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

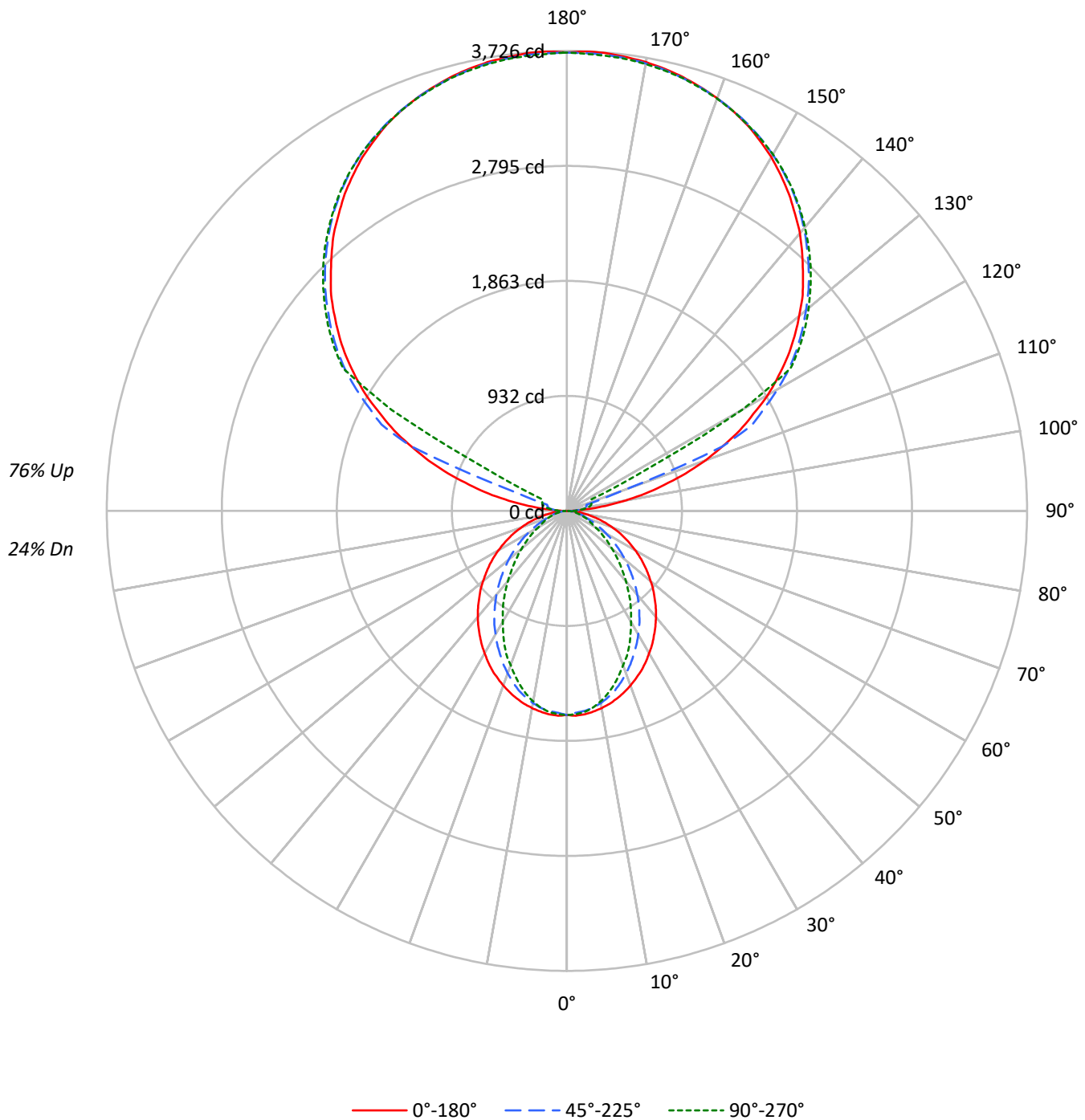
Lumens per Lamp: N/A
Luminaire Lumens: 14290.0 lumens
Efficiency: N/A
Efficacy: 114.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 125
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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32
1	92	88	84	81	82	78	75	73	60	58	57	44	43	42	29	28	27
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	25	24	23
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	20	19	18
5	64	53	46	40	57	48	41	37	37	33	29	28	25	22	19	17	15
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	17	15	14
7	55	43	36	30	49	39	32	28	30	26	22	23	20	17	15	14	12
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11
9	47	36	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10
10	44	32	26	21	39	29	23	19	23	19	16	18	15	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1207	1207	1207
5°	1209	1188	1195
10°	1197	1165	1157
15°	1180	1126	1097
20°	1158	1073	1023
25°	1136	1014	952
30°	1106	953	862
35°	1077	888	783
40°	1047	820	692
45°	1012	745	609
50°	976	669	529
55°	939	588	451
60°	895	503	372
65°	846	417	335
70°	785	336	303
75°	709	297	276
80°	599	249	241
85°	417	167	182

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1979 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	1.1
10°-20°	425.3	3.0
20°-30°	597.2	4.2
30°-40°	650.9	4.6
40°-50°	598.3	4.2
50°-60°	469.9	3.3
60°-70°	305.8	2.1
70°-80°	157.4	1.1
80°-90°	46.7	0.3
90°-100°	122.4	0.9
100°-110°	456.3	3.2
110°-120°	1210.3	8.5
120°-130°	2007.3	14.0
130°-140°	2132.2	14.9
140°-150°	1981.7	13.9
150°-160°	1593.2	11.1
160°-170°	1026.6	7.2
170°-180°	353.3	2.5
0°-30°	1177.4	8.2
0°-40°	1828.4	12.8
0°-60°	2896.5	20.3
0°-90°	3406.5	23.8
90°-120°	1789.0	12.5
90°-150°	7910.3	55.4
90°-180°	10883.0	76.2
0°-180°	14290.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	3	32	54	67	72	13
95°	174	86	105	118	116	207
105°	817	897	164	193	204	873
115°	1544	1590	1658	414	220	1521
125°	2184	2219	2270	2289	2297	1948
135°	2702	2746	2769	2797	2791	2088
145°	3135	3132	3178	3197	3183	1961
155°	3452	3428	3460	3476	3455	1591
165°	3637	3621	3629	3648	3629	1028
175°	3720	3702	3707	3726	3699	354
180°	3712	3712	3712	3712	3712	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	2.6	32.2	53.6	67.3	72.4
92.5°	67.3	56.5	64.4	69.9	72.4
95°	174.5	85.8	104.6	118.3	115.5
97.5°	314.2	94.1	136.8	145.1	147.7
100°	475.6	107.5	153.1	174.5	179.9
102.5°	652.6	647.5	158.5	187.9	196.2
105°	816.6	897.3	164.0	193.3	204.2
107.5°	1007.4	1074.3	169.4	198.7	209.6
110°	1190.1	1246.3	470.2	201.6	212.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1362.1	1410.2	1364.6	206.7	215.0
115°	1544.5	1590.1	1657.5	413.7	220.4
117.5°	1703.1	1756.7	1802.6	1418.2	714.5
120°	1880.4	1920.6	1969.1	2001.3	1638.6
122.5°	2030.7	2073.7	2127.6	2143.6	2146.5
125°	2183.8	2218.9	2269.9	2288.7	2296.7
127.5°	2323.5	2361.1	2401.6	2428.4	2431.0
130°	2455.2	2498.3	2527.6	2557.3	2554.8
132.5°	2589.5	2624.6	2654.0	2678.2	2675.7
135°	2702.5	2745.5	2769.4	2796.6	2791.1
137.5°	2820.5	2852.7	2879.8	2906.6	2898.6
140°	2936.0	2957.6	2987.0	3011.2	2997.8
142.5°	3032.9	3051.7	3086.5	3107.9	3094.5
145°	3135.0	3132.1	3177.7	3196.6	3183.2
147.5°	3223.4	3215.4	3261.0	3274.4	3263.9
150°	3309.5	3290.7	3333.7	3349.7	3336.3
152.5°	3381.9	3360.5	3400.7	3417.0	3398.2
155°	3451.8	3427.8	3460.0	3476.0	3454.6
157.5°	3508.2	3486.8	3511.1	3529.9	3508.2
160°	3556.7	3540.4	3556.7	3572.6	3553.8
162.5°	3599.4	3583.5	3596.9	3615.7	3591.5
165°	3637.1	3621.1	3629.1	3647.9	3629.1
167.5°	3666.7	3650.5	3658.8	3677.6	3653.4
170°	3691.0	3674.7	3680.1	3699.0	3674.7
172.5°	3706.9	3691.0	3696.4	3715.2	3691.0
175°	3720.3	3701.5	3706.9	3725.8	3699.0
177.5°	3725.8	3706.9	3709.8	3728.6	3704.4
180°	3712.4	3712.4	3712.4	3712.4	3712.4

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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	4.65	5.30	5.80	6.44	8.05	0.61	1.26	1.77	2.41	4.01
	3H	6.31	6.90	7.48	8.05	9.67	1.79	2.37	2.95	3.52	5.14
	4H	6.91	7.47	8.09	8.62	10.24	2.23	2.78	3.40	3.93	5.56
	6H	7.33	7.84	8.51	8.99	10.63	2.54	3.05	3.72	4.20	5.84
	8H	7.45	7.94	8.64	9.11	10.73	2.63	3.11	3.81	4.28	5.91
	12H	7.51	7.97	8.70	9.13	10.78	2.67	3.13	3.85	4.29	5.93
4H	2H	4.64	5.20	5.82	6.35	7.97	1.19	1.74	2.37	2.89	4.51
	3H	6.46	6.92	7.64	8.10	9.73	2.52	2.98	3.71	4.16	5.79
	4H	7.15	7.57	8.33	8.73	10.39	3.06	3.49	4.25	4.65	6.30
	6H	7.65	8.02	8.85	9.20	10.85	3.47	3.84	4.66	5.02	6.67
	8H	7.83	8.17	9.02	9.34	11.00	3.60	3.94	4.79	5.12	6.78
	12H	7.92	8.22	9.12	9.41	11.08	3.66	3.96	4.86	5.15	6.82
8H	4H	7.10	7.44	8.29	8.62	10.28	3.33	3.67	4.52	4.85	6.51
	6H	7.66	7.94	8.87	9.16	10.82	3.84	4.12	5.05	5.34	7.00
	8H	7.88	8.12	9.09	9.32	11.00	4.04	4.28	5.25	5.48	7.15
	12H	8.01	8.23	9.23	9.42	11.13	4.15	4.36	5.36	5.56	7.26
12H	4H	7.04	7.35	8.25	8.54	10.20	3.33	3.64	4.53	4.82	6.49
	6H	7.64	7.88	8.85	9.08	10.75	3.89	4.14	5.11	5.33	7.01
	8H	7.85	8.07	9.07	9.26	10.97	4.10	4.31	5.31	5.51	7.21

END OF REPORT