

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: P922158

Luminaire Tested: DFN2DIP-PN3F0-070D030US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922158
REPORT IS A COMBINATION OF REPORTS P899520 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-070D030US940-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

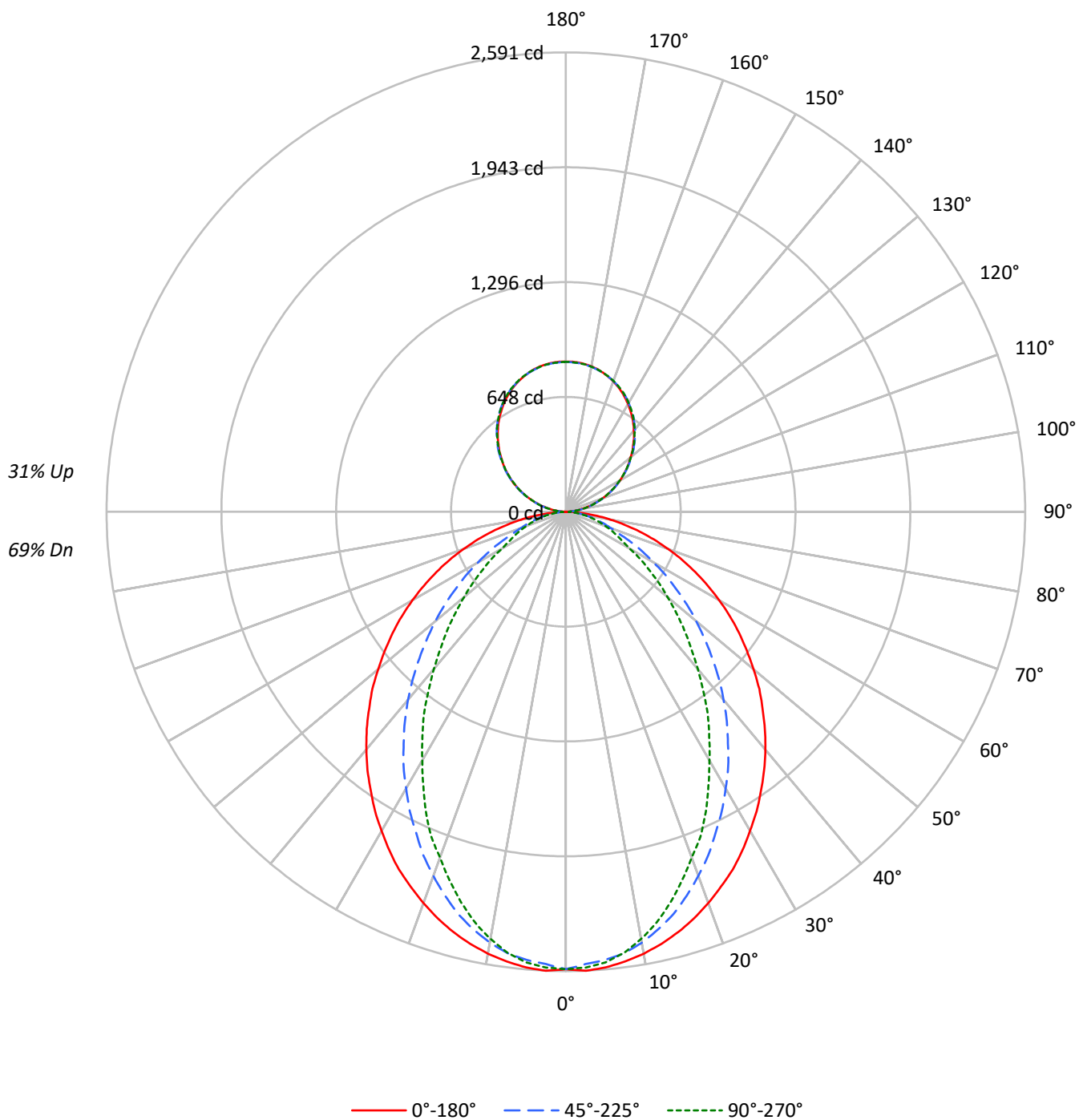
Lumens per Lamp: N/A
Luminaire Lumens: 7673.1 lumens
Efficiency: N/A
Efficacy: 82.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 92.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	50	30	10
RCR																				
0	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69		
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	66	65	64	60		
2	94	87	81	76	89	82	77	73	74	70	66	66	63	60	59	57	55	51		
3	86	77	70	64	81	73	67	62	66	61	57	59	55	52	53	50	47	44		
4	79	69	61	55	75	65	58	53	59	53	49	53	49	45	48	44	41	38		
5	73	62	54	48	69	59	51	46	53	47	43	48	43	40	43	40	36	34		
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	40	36	32	30		
7	63	51	43	37	59	48	41	36	44	38	34	40	35	31	36	32	29	27		
8	59	46	39	33	55	44	37	32	41	35	30	37	32	28	34	29	26	24		
9	55	43	35	30	52	41	34	29	37	31	27	34	29	26	31	27	24	22		
10	51	39	32	27	49	38	31	26	35	29	25	32	27	23	29	25	22	20		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3016	3016	3016
5°	3019	2966	2986
10°	2987	2905	2887
15°	2944	2807	2736
20°	2888	2673	2551
25°	2830	2523	2372
30°	2754	2369	2145
35°	2678	2204	1946
40°	2602	2033	1718
45°	2513	1844	1512
50°	2421	1653	1310
55°	2325	1450	1117
60°	2213	1237	918
65°	2084	1022	825
70°	1928	820	744
75°	1732	718	675
80°	1449	596	581
85°	984	388	429

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2513 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	3.2
10°-20°	663.7	8.7
20°-30°	931.9	12.1
30°-40°	1015.8	13.2
40°-50°	933.6	12.2
50°-60°	733.2	9.6
60°-70°	477.3	6.2
70°-80°	245.7	3.2
80°-90°	65.1	0.8
90°-100°	52.3	0.7
100°-110°	166.3	2.2
110°-120°	284.7	3.7
120°-130°	374.4	4.9
130°-140°	420.2	5.5
140°-150°	412.1	5.4
150°-160°	345.7	4.5
160°-170°	229.2	3.0
170°-180°	80.1	1.0
0°-30°	1837.4	23.9
0°-40°	2853.2	37.2
0°-60°	4520.0	58.9
0°-90°	5308.1	69.2
90°-120°	503.4	6.6
90°-150°	1710.0	22.3
90°-180°	2365.0	30.8
0°-180°	7673.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	1	9	25	24	24	8
95°	37	44	46	46	44	41
105°	154	156	157	158	158	162
115°	286	290	288	288	286	283
125°	416	422	420	418	417	371
135°	537	545	547	546	544	415
145°	652	658	662	662	660	408
155°	746	748	750	754	752	343
165°	812	811	811	816	812	229
175°	844	842	841	846	842	80
180°	846	846	846	846	846	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	0.8	9.2	25.0	23.5	24.3
92.5°	15.8	21.4	22.2	22.9	22.9
95°	37.3	44.4	45.7	45.7	44.4
97.5°	62.0	68.6	71.4	71.4	71.4
100°	90.5	96.4	98.4	98.4	97.7
102.5°	120.6	125.0	127.8	128.6	127.8
105°	153.6	155.6	157.1	158.4	158.4
107.5°	186.2	189.2	189.2	189.8	186.2
110°	217.8	221.9	221.9	221.9	219.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	252.0	256.4	255.6	253.5	252.0
115°	285.7	289.7	288.5	287.8	285.7
117.5°	319.1	324.7	321.1	319.1	317.0
120°	352.8	358.4	352.8	352.8	350.4
122.5°	383.3	390.5	386.9	384.9	383.3
125°	415.5	421.9	419.8	417.5	416.8
127.5°	446.8	454.8	452.0	448.9	446.8
130°	476.2	485.4	484.1	482.6	479.7
132.5°	509.1	516.2	516.7	513.2	511.1
135°	537.4	545.3	546.9	546.1	544.0
137.5°	569.0	575.4	576.7	576.2	573.1
140°	596.8	603.2	606.8	606.8	604.0
142.5°	625.4	631.8	633.8	634.6	631.8
145°	652.5	657.5	661.6	662.4	659.6
147.5°	676.7	683.1	686.1	687.4	684.6
150°	701.7	706.1	708.8	711.1	708.8
152.5°	723.9	728.2	731.7	734.6	731.7
155°	746.1	748.1	750.4	753.9	751.7
157.5°	765.2	766.7	768.0	773.1	769.5
160°	782.3	783.8	784.6	788.9	785.9
162.5°	798.1	798.1	798.9	803.7	800.1
165°	811.6	810.8	810.8	815.9	812.3
167.5°	823.9	821.5	821.5	826.6	823.0
170°	833.0	831.0	830.3	835.4	831.0
172.5°	839.4	837.4	836.6	841.7	837.4
175°	844.5	842.5	841.0	846.1	841.7
177.5°	847.3	845.3	843.7	848.1	843.7
180°	846.1	846.1	846.1	846.1	846.1



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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	12.57	13.59	13.35	14.38	15.35	8.54	9.55	9.32	10.35	11.32
	3H	14.26	15.17	15.05	15.97	16.97	9.73	10.64	10.53	11.45	12.45
	4H	14.87	15.73	15.68	16.54	17.55	10.19	11.04	11.00	11.86	12.87
	6H	15.30	16.08	16.12	16.91	17.93	10.51	11.30	11.34	12.13	13.15
	8H	15.42	16.18	16.26	17.02	18.04	10.61	11.36	11.44	12.20	13.23
	12H	15.49	16.20	16.33	17.04	18.09	10.65	11.37	11.49	12.20	13.26
4H	2H	12.61	13.47	13.43	14.28	15.29	9.15	10.01	9.97	10.82	11.84
	3H	14.45	15.16	15.28	16.01	17.04	10.51	11.22	11.34	12.07	13.10
	4H	15.14	15.79	15.98	16.64	17.69	11.06	11.71	11.90	12.56	13.61
	6H	15.66	16.22	16.52	17.09	18.15	11.48	12.04	12.34	12.91	13.97
	8H	15.84	16.36	16.70	17.23	18.30	11.61	12.13	12.47	13.00	14.07
	12H	15.94	16.41	16.82	17.29	18.37	11.68	12.15	12.56	13.04	14.12
8H	4H	15.12	15.64	15.98	16.51	17.58	11.35	11.87	12.21	12.74	13.81
	6H	15.69	16.12	16.58	17.03	18.10	11.87	12.30	12.76	13.21	14.28
	8H	15.90	16.28	16.80	17.19	18.28	12.06	12.44	12.95	13.34	14.43
	12H	16.04	16.38	16.94	17.28	18.42	12.18	12.51	13.08	13.41	14.55
12H	4H	15.08	15.55	15.96	16.44	17.52	11.36	11.83	12.24	12.72	13.80
	6H	15.66	16.05	16.56	16.95	18.04	11.92	12.30	12.81	13.20	14.29
	8H	15.89	16.23	16.79	17.12	18.26	12.13	12.47	13.03	13.36	14.50