

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: P914035

Luminaire Tested: DFN2DIP-PN3F0-090D040US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914035
REPORT IS A COMBINATION OF REPORTS P901058 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D040US927-RLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

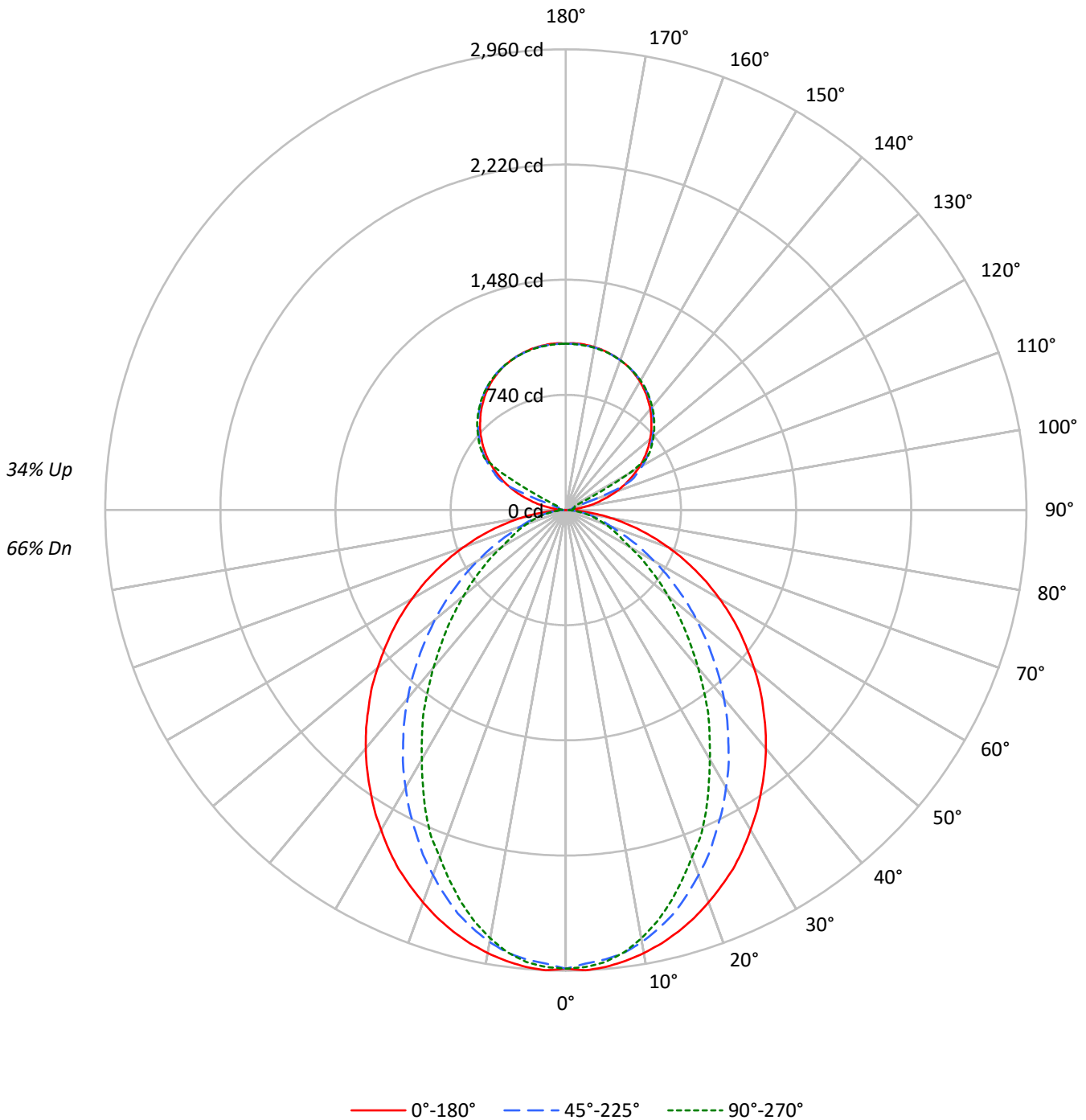
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9197.2 lumens
Efficiency: N/A
Efficacy: 74.8 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): 123
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	71	69	64	62	61	57			
2	93	86	80	75	88	81	76	72	73	68	65	64	61	59	57	54	52	49			
3	86	76	69	63	80	72	66	61	65	60	55	57	54	50	51	48	45	42			
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40	37			
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	43	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	37	31	27	33	28	25	30	26	23	21			
10	51	39	32	27	48	37	30	26	34	28	24	31	26	23	28	24	21	19			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3445	3445	3445
5°	3448	3388	3410
10°	3412	3319	3298
15°	3363	3207	3125
20°	3299	3053	2913
25°	3233	2882	2709
30°	3145	2706	2450
35°	3059	2517	2223
40°	2972	2322	1963
45°	2870	2106	1727
50°	2765	1888	1497
55°	2655	1656	1276
60°	2528	1413	1049
65°	2381	1167	942
70°	2203	937	850
75°	1979	821	770
80°	1655	681	663
85°	1123	443	490

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2870 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.2	3.0
10°-20°	758.1	8.2
20°-30°	1064.4	11.6
30°-40°	1160.3	12.6
40°-50°	1066.4	11.6
50°-60°	837.5	9.1
60°-70°	545.1	5.9
70°-80°	280.6	3.1
80°-90°	73.5	0.8
90°-100°	35.2	0.4
100°-110°	131.5	1.4
110°-120°	348.6	3.8
120°-130°	578.2	6.3
130°-140°	614.2	6.7
140°-150°	570.9	6.2
150°-160°	458.9	5.0
160°-170°	295.7	3.2
170°-180°	101.8	1.1
0°-30°	2098.7	22.8
0°-40°	3258.9	35.4
0°-60°	5162.8	56.1
0°-90°	6062.1	65.9
90°-120°	515.3	5.6
90°-150°	2278.7	24.8
90°-180°	3135.0	34.1
0°-180°	9197.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2947	2947	2947	2947	2947	
5°	2947	2933	2899	2923	2915	279
15°	2803	2773	2683	2632	2606	790
25°	2544	2459	2283	2173	2133	1170
35°	2192	2056	1822	1653	1595	1372
45°	1792	1613	1333	1144	1080	1384
55°	1363	1155	867	707	656	1218
65°	920	704	464	373	365	912
75°	491	304	213	195	192	519
85°	114	58	51	51	51	132
90°	1	9	15	19	21	9
95°	50	25	30	34	33	60
105°	235	258	47	56	59	251
115°	445	458	477	119	64	438
125°	629	639	654	659	662	561
135°	778	791	798	806	804	601
145°	903	902	915	921	917	565
155°	994	988	997	1001	995	458
165°	1048	1043	1045	1051	1045	296
175°	1072	1066	1068	1073	1066	102
180°	1069	1069	1069	1069	1069	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2946.7	2946.7	2946.7	2946.7	2946.7
2.5°	2960.0	2946.7	2917.2	2944.1	2938.8
5°	2946.7	2933.4	2898.6	2922.6	2914.7
7.5°	2922.6	2906.8	2869.4	2879.9	2866.6
10°	2890.7	2872.0	2818.8	2810.6	2794.7
12.5°	2850.7	2826.7	2754.6	2738.7	2709.3
15°	2802.7	2773.3	2682.7	2632.0	2605.5
17.5°	2746.7	2704.0	2591.9	2533.3	2490.6
20°	2682.7	2629.2	2495.9	2429.5	2370.6
22.5°	2613.4	2552.0	2397.2	2306.7	2266.8
25°	2544.1	2458.6	2282.7	2173.4	2133.3
27.5°	2461.5	2370.6	2176.0	2050.6	1989.2
30°	2373.5	2271.9	2058.6	1922.8	1850.6
32.5°	2288.0	2165.2	1946.8	1786.7	1719.9
35°	2192.1	2056.0	1821.5	1653.4	1594.6
37.5°	2098.7	1951.9	1704.1	1519.9	1453.4
40°	2000.0	1840.2	1581.3	1392.0	1322.7
42.5°	1898.7	1728.1	1458.7	1261.3	1194.8
45°	1792.1	1613.3	1333.4	1143.8	1079.9
47.5°	1690.8	1501.5	1213.5	1023.9	965.4
50°	1578.7	1389.4	1096.1	911.9	856.1
52.5°	1469.3	1269.2	984.0	808.0	757.4
55°	1362.6	1154.6	866.6	706.8	656.1
57.5°	1253.4	1040.1	762.8	613.4	570.7
60°	1141.3	928.0	653.3	517.5	474.8
62.5°	1032.1	818.8	559.9	432.1	410.8
65°	920.0	703.9	464.0	373.4	365.3
67.5°	813.4	597.2	373.4	327.9	320.0
70°	701.4	493.4	309.3	282.7	271.9
72.5°	594.7	397.2	258.6	237.3	232.0
75°	490.6	303.9	213.3	194.6	192.1
77.5°	386.7	215.9	168.0	157.3	151.9
80°	290.6	154.8	127.9	117.4	117.4
82.5°	202.6	104.1	88.0	82.6	82.6
85°	114.5	58.5	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	0.7	9.3	15.4	19.4	20.8
92.5°	19.4	16.2	18.5	20.1	20.8
95°	50.2	24.7	30.1	34.1	33.3
97.5°	90.5	27.1	39.5	41.8	42.5
100°	137.0	31.0	44.1	50.2	51.8
102.5°	188.0	186.6	45.6	54.1	56.5
105°	235.2	258.5	47.2	55.7	58.8
107.5°	290.2	309.5	48.8	57.3	60.4
110°	342.9	359.0	135.5	58.1	61.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	392.4	406.2	393.1	59.6	61.9
115°	444.9	458.0	477.4	119.1	63.5
117.5°	490.6	506.0	519.3	408.5	205.8
120°	541.7	553.3	567.2	576.5	472.1
122.5°	584.9	597.4	612.9	617.5	618.3
125°	629.1	639.2	653.9	659.3	661.6
127.5°	669.3	680.2	691.8	699.6	700.3
130°	707.3	719.7	728.1	736.6	735.9
132.5°	745.9	756.1	764.5	771.5	770.8
135°	778.5	790.9	797.8	805.6	804.1
137.5°	812.5	821.7	829.6	837.3	835.0
140°	845.7	852.0	860.5	867.4	863.6
142.5°	873.7	879.1	889.1	895.2	891.4
145°	903.1	902.3	915.4	920.8	916.9
147.5°	928.5	926.2	939.4	943.3	940.2
150°	953.3	947.9	960.4	965.0	961.1
152.5°	974.2	968.0	979.6	984.3	978.9
155°	994.3	987.5	996.7	1001.3	995.1
157.5°	1010.6	1004.4	1011.5	1016.8	1010.6
160°	1024.5	1019.9	1024.5	1029.1	1023.7
162.5°	1036.9	1032.3	1036.2	1041.6	1034.6
165°	1047.7	1043.1	1045.4	1050.8	1045.4
167.5°	1056.3	1051.5	1054.0	1059.4	1052.4
170°	1063.3	1058.6	1060.1	1065.6	1058.6
172.5°	1067.9	1063.3	1064.8	1070.2	1063.3
175°	1071.7	1066.3	1067.9	1073.2	1065.6
177.5°	1073.2	1067.9	1068.7	1074.1	1067.1
180°	1069.4	1069.4	1069.4	1069.4	1069.4



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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	12.78	13.76	13.59	14.59	15.61	8.74	9.72	9.56	10.55	11.58
	3H	14.46	15.33	15.29	16.18	17.23	9.94	10.81	10.76	11.65	12.71
	4H	15.07	15.90	15.91	16.74	17.81	10.39	11.21	11.23	12.06	13.13
	6H	15.49	16.25	16.35	17.11	18.19	10.71	11.47	11.57	12.33	13.41
	8H	15.62	16.35	16.49	17.22	18.30	10.80	11.53	11.67	12.40	13.48
	12H	15.69	16.38	16.56	17.24	18.35	10.85	11.54	11.72	12.41	13.51
4H	2H	12.81	13.64	13.66	14.49	15.55	9.35	10.18	10.20	11.03	12.09
	3H	14.65	15.33	15.51	16.21	17.30	10.71	11.39	11.57	12.28	13.36
	4H	15.34	15.96	16.21	16.84	17.95	11.26	11.88	12.13	12.76	13.87
	6H	15.86	16.39	16.74	17.30	18.41	11.68	12.22	12.57	13.12	14.23
	8H	16.03	16.53	16.92	17.43	18.56	11.81	12.31	12.70	13.21	14.33
	12H	16.13	16.58	17.04	17.50	18.63	11.87	12.33	12.78	13.24	14.37
8H	4H	15.32	15.82	16.21	16.72	17.84	11.54	12.05	12.44	12.94	14.07
	6H	15.88	16.30	16.80	17.24	18.36	12.06	12.47	12.98	13.41	14.54
	8H	16.09	16.46	17.02	17.39	18.54	12.25	12.61	13.18	13.55	14.69
	12H	16.23	16.56	17.16	17.48	18.68	12.37	12.69	13.30	13.61	14.81
12H	4H	15.27	15.73	16.18	16.64	17.77	11.56	12.01	12.47	12.92	14.05
	6H	15.86	16.22	16.78	17.16	18.30	12.11	12.48	13.04	13.41	14.55
	8H	16.08	16.40	17.01	17.33	18.52	12.32	12.64	13.25	13.57	14.76