

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: P926397

Luminaire Tested: DFN2DIP-TR4F0-040D110US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926397
REPORT IS A COMBINATION OF REPORTS P902016 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D110US950-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

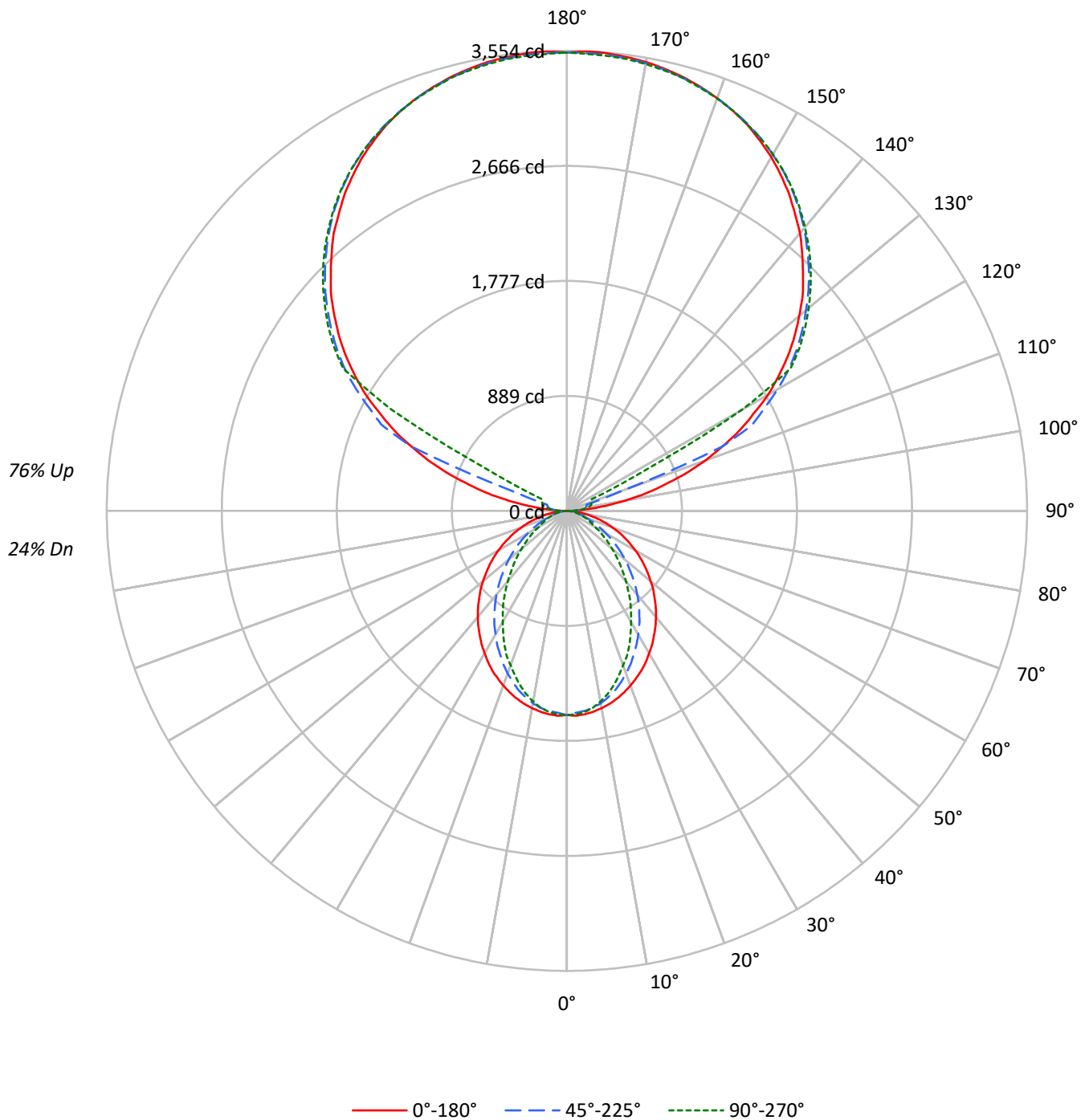
Lumens per Lamp: N/A
Luminaire Lumens: 13632.7 lumens
Efficiency: N/A
Efficacy: 116.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 116.7
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
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°	1253	1253	1253
5°	1255	1233	1241
10°	1243	1209	1201
15°	1225	1169	1138
20°	1203	1114	1061
25°	1180	1052	987
30°	1149	989	894
35°	1118	921	811
40°	1087	850	717
45°	1051	772	631
50°	1014	693	547
55°	975	609	467
60°	930	521	384
65°	878	431	346
70°	815	348	313
75°	736	306	285
80°	622	257	247
85°	433	172	185

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1881 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	1.1
10°-20°	405.8	3.0
20°-30°	569.7	4.2
30°-40°	621.0	4.6
40°-50°	570.8	4.2
50°-60°	448.2	3.3
60°-70°	291.8	2.1
70°-80°	150.2	1.1
80°-90°	44.6	0.3
90°-100°	116.8	0.9
100°-110°	435.4	3.2
110°-120°	1154.6	8.5
120°-130°	1915.0	14.0
130°-140°	2034.2	14.9
140°-150°	1890.5	13.9
150°-160°	1519.9	11.1
160°-170°	979.4	7.2
170°-180°	337.1	2.5
0°-30°	1123.3	8.2
0°-40°	1744.3	12.8
0°-60°	2763.3	20.3
0°-90°	3249.8	23.8
90°-120°	1706.7	12.5
90°-150°	7546.4	55.4
90°-180°	10383.0	76.2
0°-180°	13632.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	2	31	51	64	69	13
95°	166	82	100	113	110	197
105°	779	856	156	184	195	832
115°	1474	1517	1581	395	210	1451
125°	2083	2117	2166	2183	2191	1858
135°	2578	2619	2642	2668	2663	1992
145°	2991	2988	3032	3050	3037	1871
155°	3293	3270	3301	3316	3296	1517
165°	3470	3454	3462	3480	3462	980
175°	3549	3531	3536	3554	3529	338
180°	3542	3542	3542	3542	3542	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	2.5	30.7	51.1	64.2	69.1
92.5°	64.2	53.9	61.4	66.7	69.1
95°	166.5	81.9	99.8	112.9	110.2
97.5°	299.7	89.8	130.5	138.4	140.9
100°	453.7	102.6	146.1	166.5	171.6
102.5°	622.6	617.7	151.2	179.3	187.2
105°	779.0	856.0	156.5	184.4	194.8
107.5°	961.1	1024.9	161.6	189.6	200.0
110°	1135.4	1189.0	448.6	192.3	202.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1299.4	1345.3	1301.8	197.2	205.1
115°	1473.5	1517.0	1581.3	394.7	210.3
117.5°	1624.8	1675.9	1719.7	1353.0	681.6
120°	1793.9	1832.3	1878.5	1909.2	1563.2
122.5°	1937.3	1978.3	2029.7	2045.0	2047.8
125°	2083.3	2116.8	2165.5	2183.4	2191.1
127.5°	2216.6	2252.5	2291.1	2316.7	2319.2
130°	2342.3	2383.4	2411.3	2439.7	2437.3
132.5°	2470.4	2503.9	2531.9	2555.0	2552.6
135°	2578.2	2619.2	2642.0	2668.0	2662.7
137.5°	2690.8	2721.5	2747.3	2772.9	2765.3
140°	2800.9	2821.6	2849.6	2872.7	2859.9
142.5°	2893.4	2911.3	2944.5	2964.9	2952.2
145°	2990.8	2988.0	3031.5	3049.6	3036.8
147.5°	3075.1	3067.5	3111.0	3123.8	3113.8
150°	3157.3	3139.3	3180.3	3195.6	3182.8
152.5°	3226.3	3205.9	3244.3	3259.8	3241.9
155°	3293.0	3270.1	3300.8	3316.1	3295.7
157.5°	3346.8	3326.4	3349.6	3367.5	3346.8
160°	3393.1	3377.5	3393.1	3408.3	3390.3
162.5°	3433.8	3418.7	3431.4	3449.4	3426.3
165°	3469.8	3454.5	3462.2	3480.1	3462.2
167.5°	3498.0	3482.6	3490.5	3508.4	3485.3
170°	3521.2	3505.7	3510.8	3528.8	3505.7
172.5°	3536.4	3521.2	3526.4	3544.3	3521.2
175°	3549.2	3531.2	3536.4	3554.4	3528.8
177.5°	3554.4	3536.4	3539.1	3557.1	3534.0
180°	3541.6	3541.6	3541.6	3541.6	3541.6

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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	4.76	5.42	5.92	6.56	8.16	0.74	1.39	1.90	2.53	4.14
	3H	6.43	7.01	7.59	8.16	9.78	1.91	2.50	3.08	3.65	5.27
	4H	7.03	7.58	8.20	8.73	10.36	2.36	2.91	3.53	4.06	5.68
	6H	7.44	7.95	8.62	9.10	10.74	2.67	3.18	3.85	4.33	5.97
	8H	7.56	8.05	8.74	9.21	10.84	2.76	3.24	3.94	4.41	6.03
	12H	7.62	8.08	8.80	9.24	10.89	2.79	3.25	3.98	4.41	6.06
4H	2H	4.76	5.32	5.94	6.47	8.09	1.31	1.87	2.49	3.02	4.64
	3H	6.57	7.04	7.76	8.21	9.85	2.65	3.11	3.83	4.28	5.92
	4H	7.26	7.68	8.45	8.85	10.50	3.19	3.61	4.37	4.78	6.43
	6H	7.76	8.13	8.95	9.31	10.96	3.60	3.96	4.79	5.15	6.79
	8H	7.94	8.28	9.13	9.45	11.11	3.72	4.06	4.91	5.24	6.90
	12H	8.02	8.33	9.23	9.52	11.18	3.78	4.09	4.99	5.28	6.94
8H	4H	7.21	7.55	8.40	8.73	10.39	3.45	3.79	4.64	4.97	6.63
	6H	7.77	8.05	8.98	9.27	10.93	3.97	4.25	5.18	5.47	7.12
	8H	7.99	8.23	9.20	9.43	11.11	4.16	4.40	5.37	5.60	7.28
	12H	8.12	8.33	9.34	9.53	11.23	4.27	4.48	5.49	5.68	7.39
12H	4H	7.16	7.47	8.36	8.65	10.32	3.45	3.76	4.66	4.95	6.61
	6H	7.75	7.99	8.96	9.19	10.86	4.02	4.26	5.23	5.46	7.13
	8H	7.96	8.17	9.18	9.37	11.08	4.22	4.43	5.44	5.63	7.34

END OF REPORT