

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: P904307

Luminaire Tested: DFN2DIP-TR2F0-040D030US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904307
REPORT IS A COMBINATION OF REPORTS P901756 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D030US830-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

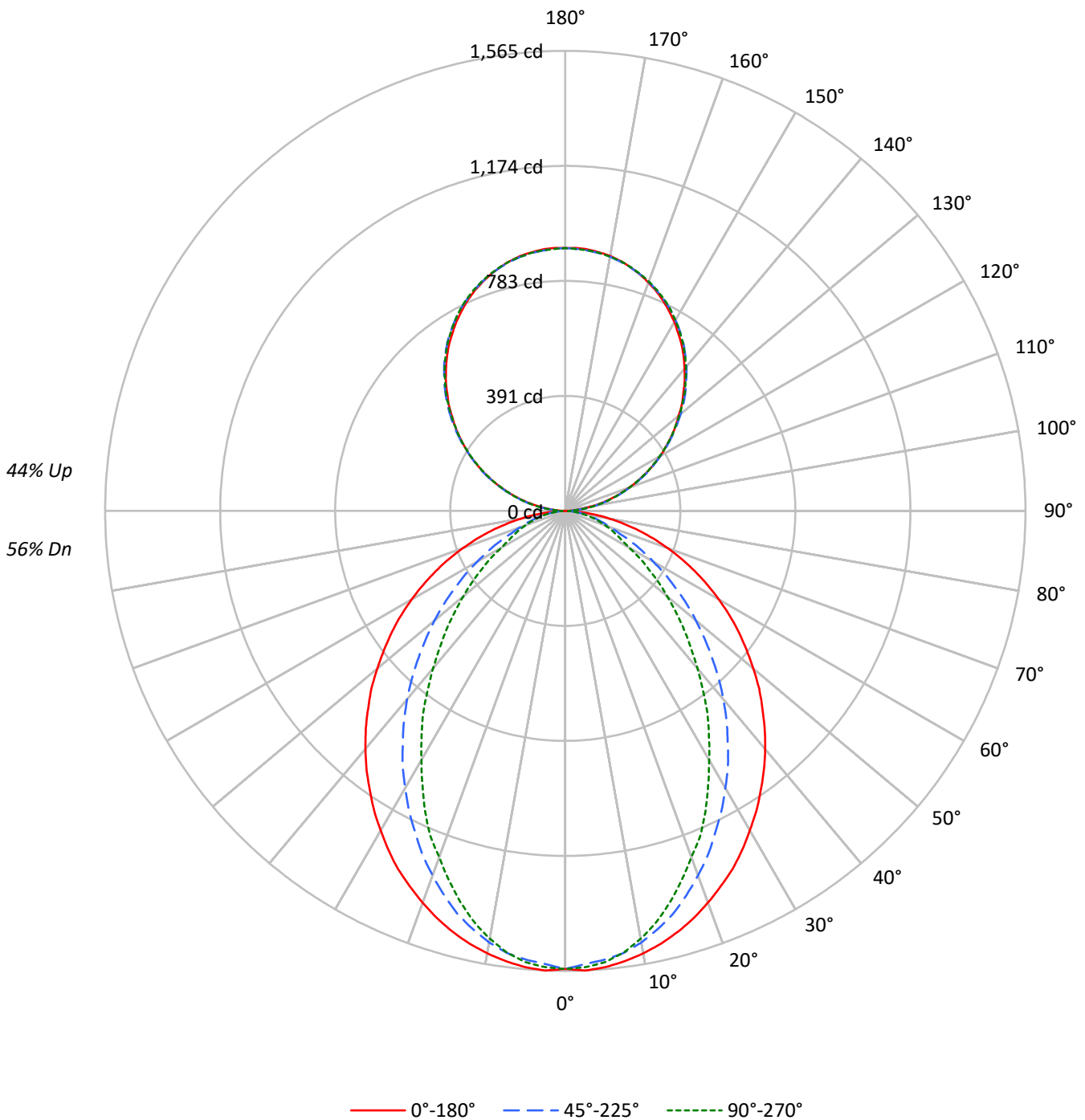
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5707.1 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 57.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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				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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56			56
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	55	54	53	48			48
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	49	47	46	41			41
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40	36			36
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35	31			31
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	30	27			27
6	65	53	46	40	61	50	43	38	44	38	34	38	34	31	33	30	27	24			24
7	61	48	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24	22			22
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22	20			20
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20	18			18
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18	16			16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3475	3475	3475
5°	3476	3413	3436
10°	3436	3338	3319
15°	3384	3220	3140
20°	3316	3061	2923
25°	3247	2884	2714
30°	3155	2703	2451
35°	3065	2509	2220
40°	2974	2310	1956
45°	2868	2089	1717
50°	2758	1868	1484
55°	2642	1632	1261
60°	2508	1386	1033
65°	2354	1137	922
70°	2167	906	826
75°	1930	783	740
80°	1591	636	624
85°	1045	395	440

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2868 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	2.6
10°-20°	400.9	7.0
20°-30°	562.8	9.9
30°-40°	613.5	10.8
40°-50°	563.9	9.9
50°-60°	442.9	7.8
60°-70°	288.3	5.1
70°-80°	148.4	2.6
80°-90°	40.4	0.7
90°-100°	55.3	1.0
100°-110°	175.8	3.1
110°-120°	300.9	5.3
120°-130°	395.7	6.9
130°-140°	444.2	7.8
140°-150°	435.6	7.6
150°-160°	365.4	6.4
160°-170°	242.3	4.2
170°-180°	84.7	1.5
0°-30°	1109.8	19.4
0°-40°	1723.3	30.2
0°-60°	2730.1	47.8
0°-90°	3207.2	56.2
90°-120°	532.1	9.3
90°-150°	1807.5	31.7
90°-180°	2500.0	43.8
0°-180°	5707.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	1	10	26	25	26	6
95°	39	47	48	48	47	44
105°	162	164	166	167	167	171
115°	302	306	305	304	302	299
125°	439	446	444	441	440	392
135°	568	576	578	577	575	439
145°	690	695	699	700	697	431
155°	789	791	793	797	795	363
165°	858	857	857	862	859	242
175°	893	890	889	894	890	85
180°	894	894	894	894	894	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	0.8	9.7	26.4	24.8	25.6
92.5°	16.7	22.6	23.5	24.2	24.2
95°	39.4	46.9	48.3	48.3	46.9
97.5°	65.5	72.5	75.5	75.5	75.5
100°	95.7	101.9	104.1	104.1	103.3
102.5°	127.5	132.1	135.1	135.9	135.1
105°	162.3	164.5	166.1	167.4	167.4
107.5°	196.8	200.0	200.0	200.6	196.8
110°	230.3	234.6	234.6	234.6	232.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	266.4	271.0	270.1	268.0	266.4
115°	302.0	306.2	304.9	304.2	302.0
117.5°	337.2	343.2	339.4	337.2	335.1
120°	372.9	378.8	372.9	372.9	370.4
122.5°	405.2	412.7	409.0	406.8	405.2
125°	439.2	445.9	443.7	441.3	440.5
127.5°	472.3	480.7	477.8	474.5	472.3
130°	503.3	513.0	511.7	510.1	507.1
132.5°	538.1	545.6	546.2	542.4	540.3
135°	568.1	576.4	578.1	577.2	575.0
137.5°	601.4	608.2	609.5	609.1	605.8
140°	630.8	637.6	641.4	641.4	638.4
142.5°	661.1	667.8	670.0	670.8	667.8
145°	689.7	695.0	699.4	700.1	697.2
147.5°	715.3	722.0	725.2	726.6	723.6
150°	741.7	746.3	749.2	751.7	749.2
152.5°	765.2	769.7	773.5	776.5	773.5
155°	788.6	790.7	793.1	796.9	794.6
157.5°	808.8	810.4	811.8	817.2	813.4
160°	826.9	828.5	829.3	833.9	830.7
162.5°	843.6	843.6	844.4	849.5	845.7
165°	857.9	857.1	857.1	862.4	858.7
167.5°	870.8	868.4	868.4	873.7	870.0
170°	880.5	878.4	877.6	883.0	878.4
172.5°	887.2	885.1	884.3	889.7	885.1
175°	892.7	890.5	888.9	894.3	889.7
177.5°	895.6	893.4	891.8	896.5	891.8
180°	894.3	894.3	894.3	894.3	894.3



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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	11.91	12.79	12.82	13.71	14.90	7.89	8.77	8.80	9.69	10.88
	3H	13.56	14.35	14.48	15.29	16.49	9.06	9.85	9.99	10.79	11.99
	4H	14.16	14.90	15.09	15.84	17.06	9.51	10.25	10.44	11.19	12.41
	6H	14.56	15.25	15.51	16.19	17.42	9.82	10.50	10.76	11.45	12.68
	8H	14.68	15.33	15.64	16.29	17.52	9.90	10.55	10.85	11.51	12.74
	12H	14.73	15.36	15.69	16.31	17.56	9.94	10.56	10.90	11.51	12.77
4H	2H	11.93	12.67	12.87	13.61	14.83	8.48	9.22	9.42	10.16	11.38
	3H	13.73	14.35	14.69	15.32	16.55	9.81	10.43	10.76	11.40	12.63
	4H	14.41	14.98	15.37	15.94	17.19	10.35	10.91	11.31	11.88	13.13
	6H	14.90	15.39	15.88	16.38	17.63	10.75	11.24	11.73	12.23	13.48
	8H	15.07	15.52	16.04	16.50	17.77	10.87	11.33	11.85	12.31	13.58
	12H	15.15	15.56	16.15	16.56	17.83	10.93	11.34	11.93	12.34	13.61
8H	4H	14.38	14.83	15.35	15.81	17.08	10.62	11.07	11.59	12.05	13.32
	6H	14.92	15.29	15.92	16.32	17.58	11.12	11.49	12.12	12.51	13.78
	8H	15.12	15.45	16.13	16.46	17.75	11.30	11.63	12.30	12.64	13.92
	12H	15.25	15.54	16.26	16.54	17.87	11.40	11.69	12.42	12.70	14.03
12H	4H	14.33	14.74	15.32	15.74	17.01	10.62	11.03	11.62	12.03	13.30
	6H	14.89	15.22	15.90	16.23	17.52	11.16	11.49	12.17	12.50	13.79
	8H	15.10	15.39	16.11	16.39	17.73	11.36	11.65	12.37	12.65	13.98