

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: P902529

Luminaire Tested: DFN2DIP-HX3F0-030D050US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902529
REPORT IS A COMBINATION OF REPORTS P900750 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D050US830-RLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

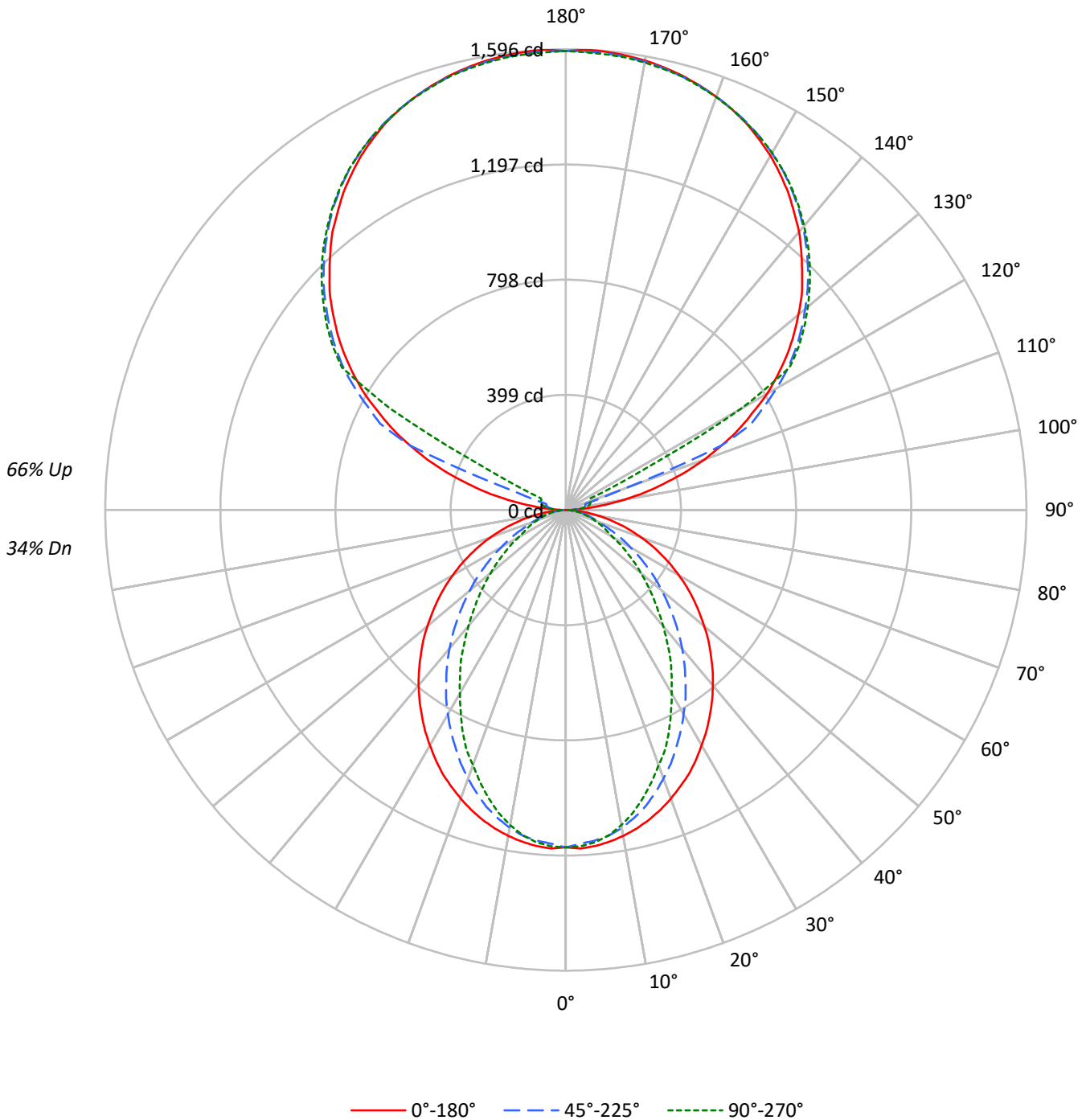
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7069.1 lumens
Efficiency: N/A
Efficacy: 117.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 60.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34				34
1	95	90	87	83	85	82	79	76	66	64	62	51	49	48	37	36	36	29				29
2	86	79	74	69	78	72	67	63	58	54	52	45	43	41	33	32	30	25				25
3	79	70	63	58	71	63	58	53	51	47	44	40	37	35	30	28	26	22				22
4	72	62	55	49	65	56	50	45	46	41	37	36	33	30	27	25	23	19				19
5	66	55	48	42	60	50	44	39	41	36	32	32	29	26	24	22	20	17				17
6	61	50	42	36	55	45	39	34	37	32	28	29	26	23	22	20	18	15				15
7	57	45	37	32	51	41	34	30	34	29	25	27	23	20	20	18	16	13				13
8	52	41	33	28	47	37	31	26	31	26	22	24	21	18	19	16	14	12				12
9	49	37	30	25	44	34	28	23	28	23	20	22	19	16	17	15	13	11				11
10	46	34	27	22	41	31	25	21	26	21	18	21	17	15	16	14	12	10				10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1354	1354	1354
5°	1355	1331	1340
10°	1341	1304	1296
15°	1322	1260	1228
20°	1297	1200	1144
25°	1272	1132	1064
30°	1237	1063	962
35°	1204	989	873
40°	1169	913	770
45°	1130	828	678
50°	1089	742	587
55°	1046	651	500
60°	996	556	411
65°	939	459	369
70°	869	368	333
75°	781	323	301
80°	656	268	259
85°	447	174	190

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1130 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.5	1.5
10°-20°	300.7	4.3
20°-30°	422.1	6.0
30°-40°	460.2	6.5
40°-50°	422.9	6.0
50°-60°	332.2	4.7
60°-70°	216.2	3.1
70°-80°	111.3	1.6
80°-90°	31.2	0.4
90°-100°	52.5	0.7
100°-110°	195.5	2.8
110°-120°	518.5	7.3
120°-130°	860.0	12.2
130°-140°	913.5	12.9
140°-150°	849.0	12.0
150°-160°	682.6	9.7
160°-170°	439.8	6.2
170°-180°	151.4	2.1
0°-30°	832.3	11.8
0°-40°	1292.5	18.3
0°-60°	2047.6	29.0
0°-90°	2406.3	34.0
90°-120°	766.5	10.8
90°-150°	3389.0	47.9
90°-180°	4663.0	66.0
0°-180°	7069.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1169	1169	1169	1169	1169	
5°	1169	1163	1150	1159	1156	111
15°	1112	1100	1064	1044	1033	313
25°	1009	975	905	862	846	464
35°	869	815	722	656	632	544
45°	711	640	529	454	428	549
55°	540	458	344	280	260	483
65°	365	279	184	148	145	362
75°	194	121	85	77	76	206
85°	45	23	20	20	20	52
90°	1	14	23	29	31	7
95°	75	37	45	51	50	89
105°	350	384	70	83	88	374
115°	662	681	710	177	94	651
125°	936	951	972	980	984	834
135°	1158	1176	1186	1198	1196	894
145°	1343	1342	1361	1370	1364	840
155°	1479	1469	1482	1489	1480	681
165°	1558	1551	1555	1563	1555	440
175°	1594	1586	1588	1596	1585	152
180°	1590	1590	1590	1590	1590	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1168.7	1168.7	1168.7	1168.7	1168.7
2.5°	1173.9	1168.7	1157.0	1167.6	1165.5
5°	1168.7	1163.4	1149.6	1159.1	1155.9
7.5°	1159.1	1152.8	1138.0	1142.2	1136.9
10°	1146.4	1139.1	1117.9	1114.7	1108.4
12.5°	1130.6	1121.1	1092.5	1086.2	1074.5
15°	1111.5	1099.9	1063.9	1043.9	1033.3
17.5°	1089.3	1072.4	1027.9	1004.8	987.8
20°	1063.9	1042.7	989.9	963.6	940.2
22.5°	1036.5	1012.1	950.7	914.8	899.0
25°	1009.0	975.1	905.3	862.0	846.0
27.5°	976.2	940.2	863.0	813.3	788.9
30°	941.3	901.1	816.4	762.6	734.0
32.5°	907.4	858.8	772.1	708.6	682.1
35°	869.4	815.4	722.4	655.7	632.4
37.5°	832.4	774.1	675.8	602.8	576.5
40°	793.2	729.8	627.2	552.0	524.6
42.5°	753.0	685.4	578.5	500.2	473.8
45°	710.8	639.8	528.9	453.6	428.3
47.5°	670.5	595.5	481.3	406.0	382.9
50°	626.1	551.0	434.7	361.7	339.5
52.5°	582.7	503.4	390.3	320.5	300.4
55°	540.4	457.9	343.7	280.3	260.2
57.5°	497.1	412.5	302.6	243.3	226.3
60°	452.6	368.1	259.1	205.2	188.3
62.5°	409.3	324.7	222.1	171.4	163.0
65°	364.9	279.2	184.0	148.1	144.9
67.5°	322.6	236.9	148.1	130.1	126.9
70°	278.1	195.7	122.6	112.1	107.8
72.5°	235.8	157.5	102.5	94.2	92.0
75°	194.5	120.6	84.6	77.2	76.2
77.5°	153.4	85.6	66.6	62.4	60.2
80°	115.3	61.4	50.7	46.6	46.6
82.5°	80.3	41.3	34.9	32.8	32.8
85°	45.4	23.2	20.1	20.1	20.1
87.5°	17.0	8.4	8.4	7.4	7.4
90°	1.1	13.8	23.0	28.8	31.0
92.5°	28.8	24.2	27.6	30.0	31.0
95°	74.7	36.8	44.9	50.7	49.5
97.5°	134.6	40.3	58.6	62.2	63.2
100°	203.8	46.1	65.6	74.7	77.1
102.5°	279.7	277.4	68.0	80.5	84.1
105°	349.9	384.5	70.2	82.8	87.5
107.5°	431.6	460.2	72.6	85.1	89.8
110°	509.9	534.0	201.4	86.3	90.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	583.5	604.2	584.7	88.6	92.1
115°	661.8	681.3	710.1	177.3	94.4
117.5°	729.6	752.6	772.3	607.6	306.1
120°	805.6	822.8	843.6	857.4	702.0
122.5°	870.0	888.4	911.5	918.4	919.6
125°	935.6	950.6	972.5	980.5	984.0
127.5°	995.4	1011.5	1029.0	1040.4	1041.5
130°	1051.9	1070.4	1082.9	1095.6	1094.6
132.5°	1109.5	1124.5	1137.0	1147.5	1146.3
135°	1157.8	1176.3	1186.5	1198.2	1195.8
137.5°	1208.3	1222.2	1233.8	1245.3	1241.9
140°	1257.8	1267.2	1279.7	1290.1	1284.4
142.5°	1299.4	1307.5	1322.4	1331.5	1325.8
145°	1343.1	1341.9	1361.4	1369.5	1363.8
147.5°	1381.0	1377.5	1397.1	1402.9	1398.4
150°	1417.9	1409.9	1428.2	1435.1	1429.4
152.5°	1448.9	1439.7	1457.0	1464.0	1455.9
155°	1478.8	1468.6	1482.3	1489.2	1480.1
157.5°	1503.0	1493.8	1504.2	1512.3	1503.0
160°	1523.8	1516.8	1523.8	1530.6	1522.6
162.5°	1542.1	1535.3	1541.0	1549.1	1538.7
165°	1558.2	1551.4	1554.8	1562.8	1554.8
167.5°	1570.9	1564.0	1567.5	1575.6	1565.2
170°	1581.3	1574.3	1576.7	1584.7	1574.3
172.5°	1588.2	1581.3	1583.7	1591.7	1581.3
175°	1593.9	1585.8	1588.2	1596.2	1584.7
177.5°	1596.2	1588.2	1589.4	1597.4	1587.1
180°	1590.4	1590.4	1590.4	1590.4	1590.4



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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	6.45	7.17	7.54	8.25	9.73	2.43	3.14	3.52	4.23	5.71
	3H	8.11	8.75	9.21	9.84	11.35	3.60	4.24	4.70	5.33	6.84
	4H	8.71	9.32	9.82	10.41	11.92	4.04	4.65	5.15	5.74	7.25
	6H	9.12	9.68	10.24	10.77	12.29	4.36	4.91	5.47	6.01	7.53
	8H	9.24	9.77	10.36	10.88	12.39	4.44	4.97	5.56	6.08	7.60
	12H	9.29	9.80	10.42	10.90	12.44	4.48	4.98	5.60	6.09	7.62
4H	2H	6.45	7.06	7.57	8.15	9.66	3.00	3.61	4.12	4.70	6.21
	3H	8.26	8.77	9.38	9.89	11.41	4.34	4.84	5.46	5.96	7.48
	4H	8.95	9.41	10.07	10.52	12.06	4.88	5.34	6.00	6.45	7.99
	6H	9.45	9.84	10.58	10.98	12.51	5.29	5.68	6.42	6.82	8.35
	8H	9.62	9.99	10.75	11.11	12.66	5.41	5.78	6.54	6.90	8.45
	12H	9.70	10.04	10.85	11.17	12.73	5.47	5.80	6.62	6.94	8.49
8H	4H	8.90	9.27	10.03	10.40	11.95	5.14	5.51	6.28	6.64	8.19
	6H	9.46	9.76	10.61	10.93	12.47	5.65	5.96	6.80	7.12	8.67
	8H	9.67	9.93	10.83	11.08	12.65	5.84	6.11	7.00	7.25	8.82
	12H	9.80	10.03	10.96	11.17	12.77	5.95	6.18	7.11	7.33	8.93
12H	4H	8.85	9.18	10.00	10.32	11.87	5.14	5.48	6.29	6.61	8.17
	6H	9.43	9.70	10.59	10.84	12.41	5.70	5.97	6.86	7.11	8.68
	8H	9.64	9.88	10.80	11.02	12.62	5.90	6.14	7.06	7.28	8.88