

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: P902433

Luminaire Tested: DFN2DIP-HX2F0-020D050US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902433
REPORT IS A COMBINATION OF REPORTS P900702 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D050US830-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

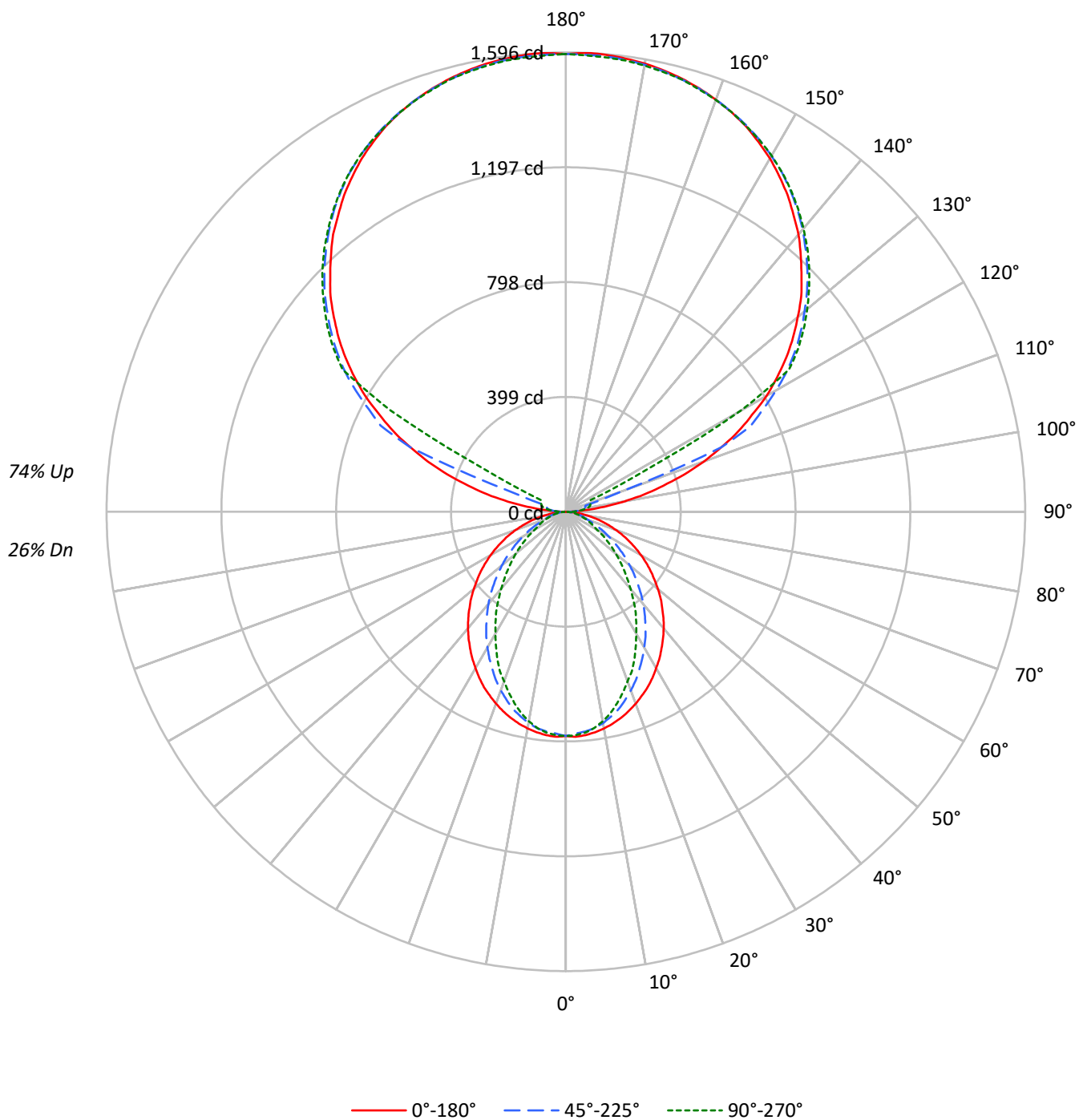
Lumens per Lamp: N/A
Luminaire Lumens: 6267.9 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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					0
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		70	70	70		51	51	51		34	34	34
1	93	88	85	82		82	79	76	73		61	59	58		45	44	43		30	29	29
2	84	77	72	67		75	69	65	60		54	51	48		40	38	36		27	26	25
3	77	68	61	56		69	61	55	51		48	44	41		35	33	31		24	23	21
4	71	60	53	47		63	54	48	43		43	38	35		32	29	26		22	20	19
5	65	54	46	41		58	48	42	37		38	33	30		28	25	23		19	18	16
6	60	48	41	35		53	43	37	32		34	30	26		26	23	20		18	16	14
7	55	43	36	31		49	39	33	28		31	26	23		23	20	18		16	14	13
8	51	39	32	27		45	36	29	25		28	24	20		21	18	16		15	13	12
9	47	36	29	24		42	32	26	22		26	21	18		20	16	14		14	12	10
10	44	33	26	21		39	30	24	20		24	19	16		18	15	13		13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1836	1836	1836
5°	1836	1802	1815
10°	1815	1763	1753
15°	1787	1700	1658
20°	1751	1616	1543
25°	1714	1522	1433
30°	1665	1426	1294
35°	1618	1324	1171
40°	1569	1218	1032
45°	1513	1102	906
50°	1455	984	783
55°	1393	860	665
60°	1322	730	544
65°	1241	599	486
70°	1141	476	435
75°	1016	412	389
80°	836	333	327
85°	547	206	230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1513 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.0	1.2
10°-20°	200.4	3.2
20°-30°	281.4	4.5
30°-40°	306.8	4.9
40°-50°	282.0	4.5
50°-60°	221.4	3.5
60°-70°	144.1	2.3
70°-80°	74.2	1.2
80°-90°	21.8	0.3
90°-100°	52.5	0.8
100°-110°	195.5	3.1
110°-120°	518.5	8.3
120°-130°	860.0	13.7
130°-140°	913.5	14.6
140°-150°	849.0	13.5
150°-160°	682.6	10.9
160°-170°	439.8	7.0
170°-180°	151.4	2.4
0°-30°	554.9	8.9
0°-40°	861.7	13.7
0°-60°	1365.1	21.8
0°-90°	1605.1	25.6
90°-120°	766.5	12.2
90°-150°	3389.0	54.1
90°-180°	4663.0	74.4
0°-180°	6267.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	766	773	771	74
15°	741	733	709	696	689	209
25°	673	650	604	575	564	309
35°	580	544	482	437	422	363
45°	474	426	353	302	286	366
55°	360	305	229	187	173	322
65°	243	186	123	99	97	241
75°	130	80	56	52	51	137
85°	30	16	13	13	13	35
90°	1	14	23	29	31	6
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°	779.1	779.1	779.1	779.1	779.1
2.5°	782.6	779.1	771.3	778.4	777.0
5°	779.1	775.6	766.4	772.8	770.6
7.5°	772.8	768.5	758.7	761.5	757.9
10°	764.3	759.3	745.3	743.1	739.0
12.5°	753.8	747.3	728.3	724.2	716.3
15°	741.0	733.2	709.3	695.9	688.9
17.5°	726.2	714.9	685.3	669.8	658.6
20°	709.3	695.1	660.0	642.3	626.8
22.5°	691.0	674.8	633.9	609.9	599.4
25°	672.7	650.1	603.5	574.7	564.0
27.5°	650.8	626.8	575.3	542.2	525.9
30°	627.5	600.7	544.3	508.4	489.3
32.5°	604.9	572.5	514.7	472.4	454.8
35°	579.6	543.7	481.6	437.2	421.6
37.5°	554.9	516.0	450.5	401.9	384.3
40°	528.8	486.5	418.1	368.1	349.7
42.5°	502.0	456.9	385.7	333.5	315.9
45°	473.8	426.5	352.6	302.5	285.5
47.5°	447.0	397.0	320.8	270.7	255.2
50°	417.5	367.4	289.8	241.1	226.4
52.5°	388.4	335.5	260.1	213.7	200.3
55°	360.2	305.3	229.1	186.9	173.4
57.5°	331.4	274.9	201.7	162.2	150.9
60°	301.8	245.3	172.8	136.9	125.5
62.5°	272.9	216.5	148.1	114.2	108.6
65°	243.3	186.2	122.7	98.8	96.6
67.5°	215.1	157.9	98.8	86.7	84.6
70°	185.4	130.4	81.7	74.7	71.9
72.5°	157.2	105.0	68.3	62.8	61.4
75°	129.7	80.3	56.4	51.5	50.8
77.5°	102.3	57.1	44.4	41.6	40.2
80°	76.8	40.9	33.8	31.0	31.0
82.5°	53.5	27.5	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
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	6.24	6.91	7.39	8.04	9.62	2.23	2.89	3.37	4.02	5.61
	3H	7.88	8.48	9.04	9.62	11.22	3.39	3.98	4.54	5.12	6.72
	4H	8.47	9.03	9.63	10.17	11.78	3.82	4.38	4.98	5.52	7.13
	6H	8.86	9.38	10.03	10.52	12.14	4.12	4.63	5.29	5.78	7.39
	8H	8.97	9.46	10.14	10.62	12.23	4.19	4.69	5.37	5.85	7.45
	12H	9.02	9.48	10.19	10.64	12.26	4.23	4.69	5.40	5.84	7.47
4H	2H	6.24	6.80	7.41	7.94	9.55	2.79	3.35	3.96	4.49	6.10
	3H	8.02	8.49	9.20	9.66	11.27	4.10	4.57	5.28	5.74	7.35
	4H	8.69	9.12	9.87	10.28	11.91	4.63	5.06	5.81	6.22	7.85
	6H	9.17	9.54	10.35	10.72	12.34	5.02	5.39	6.20	6.57	8.19
	8H	9.33	9.67	10.51	10.84	12.48	5.14	5.48	6.32	6.65	8.29
	12H	9.40	9.72	10.60	10.89	12.54	5.19	5.50	6.38	6.68	8.32
8H	4H	8.64	8.98	9.82	10.15	11.79	4.88	5.23	6.06	6.40	8.04
	6H	9.17	9.46	10.37	10.67	12.31	5.37	5.66	6.57	6.87	8.50
	8H	9.37	9.62	10.58	10.81	12.47	5.55	5.80	6.75	6.99	8.64
	12H	9.49	9.70	10.69	10.89	12.58	5.65	5.87	6.86	7.05	8.74
12H	4H	8.58	8.90	9.78	10.08	11.72	4.88	5.19	6.07	6.37	8.01
	6H	9.15	9.39	10.35	10.58	12.24	5.41	5.66	6.62	6.85	8.51
	8H	9.34	9.56	10.55	10.74	12.43	5.60	5.82	6.81	7.01	8.70

END OF REPORT