

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: G3-1907-388-4

Luminaire Tested: **HLB4SP-4000K**

Test Date: 07/05/19

**Test Information**

Test Method: LM-41-14  
Report Number: G3-1907-388-4  
Test Lab: INNOVATION CENTER(G3)  
Test Date: 07/05/19  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HLB4SP-4000K  
Description: 4IN HLBSP AT 4000K.  
Light Source: (64) SEOUL LEDS 90 CRI 4000K  
CSPY11  
Ballast/Driver: (1) LEEDARSON ELECT DRIVER  
4HLBSP-CCTS

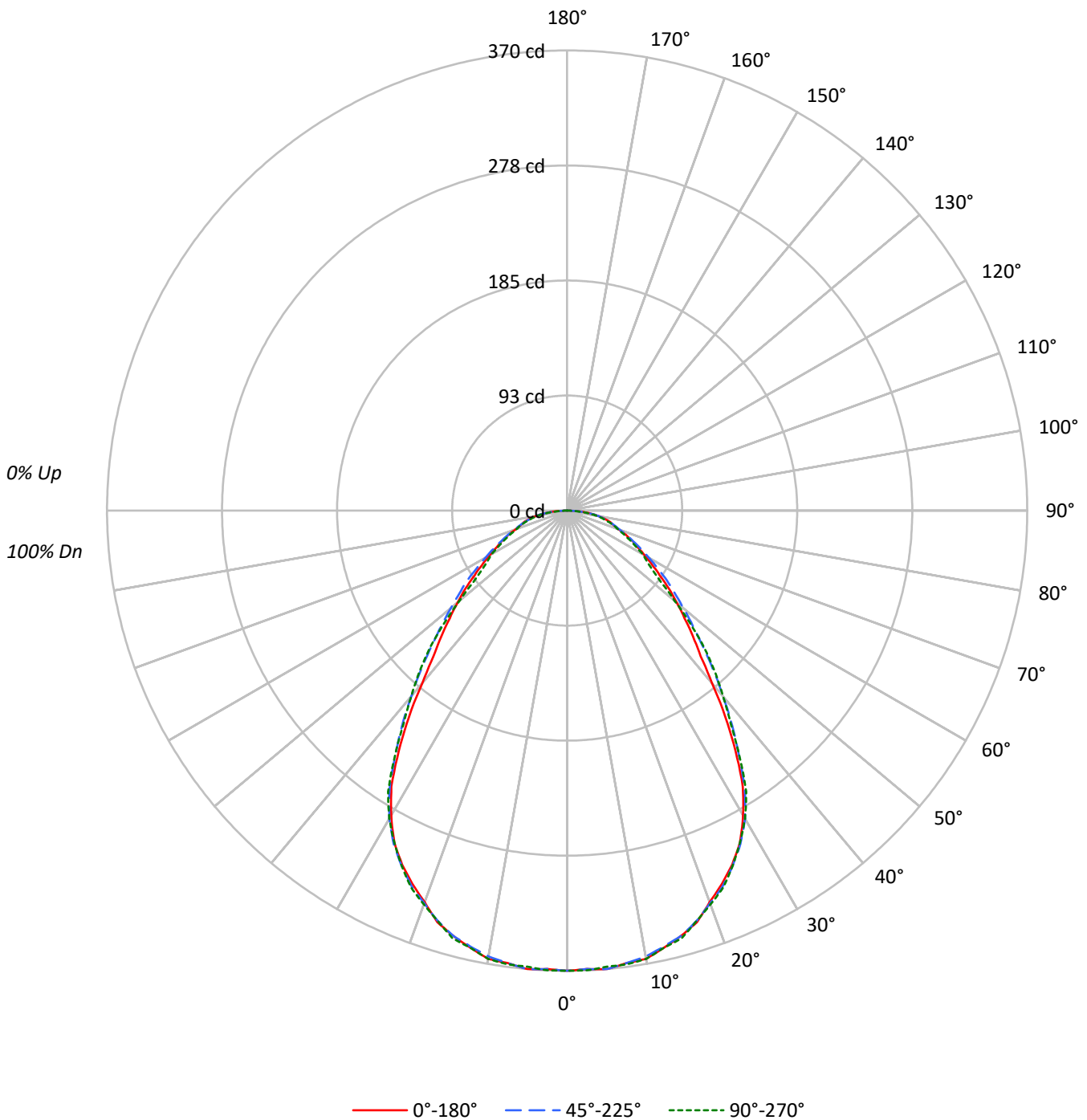
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 737.4 lumens  
Efficiency: N/A  
Efficacy: 75.3 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.16 / 1.16  
Luminous Opening: Rectangular (W 0.21' x L: 0.21' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 9.79  
Input Voltage (V): 120.0  
Input Current (Ain): 0.0834  
Voltage Rise (V): NR  
Power Factor: 0.9781  
Total Harmonic Distortion (THDi): 11.8%  
Frequency (hertz): 60  
Stabilization Time: 0.5 HR  
Operation Time: 3 HR  
Ambient Temperature (°C): 24.6  
Test Distance: 25 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	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92	90	88	86
2	101	94	88	83	99	92	86	82	89	84	80		85	81	78		82	79	76	74
3	93	84	77	71	91	82	76	70	80	74	69		77	72	68		74	70	67	65
4	86	76	68	62	84	74	67	61	72	65	60		70	64	60		68	63	59	57
5	80	69	60	54	78	67	60	54	65	59	53		64	58	53		62	57	52	50
6	75	62	54	48	73	62	54	48	60	53	48		58	52	47		57	51	47	45
7	70	57	49	44	68	56	49	43	55	48	43		54	47	43		52	47	43	41
8	65	53	45	39	64	52	45	39	51	44	39		50	43	39		48	43	39	37
9	61	49	41	36	60	48	41	36	47	40	36		46	40	36		45	39	35	34
10	58	45	38	33	56	45	38	33	44	37	33		43	37	33		42	37	33	31

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	91761	91761	91761
5°	92111	92111	91613
10°	92169	91665	92169
15°	90889	90889	91403
20°	88412	88676	88940
25°	85923	86196	86196
30°	81042	81901	81901
35°	71450	72964	73266
40°	58597	63130	63130
45°	50154	54012	54713
50°	44369	47070	43598
55°	39346	42373	36320
60°	35712	37696	34720
65°	34036	34622	32275
70°	31905	32630	31180
75°	34495	33537	32579
80°	37133	37133	34276
85°	36991	34146	31300



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.1	4.8
10°-20°	99.6	13.5
20°-30°	144.4	19.6
30°-40°	149.4	20.3
40°-50°	117.7	16.0
50°-60°	83.6	11.3
60°-70°	57.3	7.8
70°-80°	36.7	5.0
80°-90°	13.5	1.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	279.1	37.9
0°-40°	428.5	58.1
0°-60°	629.9	85.4
0°-90°	737.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	737.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	370	370	370	370	370	
5°	370	369	370	368	368	35
15°	354	354	354	354	356	100
25°	314	316	315	314	315	144
35°	236	242	241	237	242	146
45°	143	159	154	147	156	111
55°	91	91	98	93	84	82
65°	58	58	59	57	55	57
75°	36	34	35	36	34	37
85°	13	12	12	13	11	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	370	370	370	370	370
2.5°	369	370	369	370	370
5°	370	369	370	368	368
7.5°	367	368	367	368	368
10°	366	364	364	364	366
12.5°	360	360	359	361	360
15°	354	354	354	354	356
17.5°	347	346	346	346	346
20°	335	338	336	338	337
22.5°	325	327	327	326	328
25°	314	316	315	314	315
27.5°	301	301	302	302	301
30°	283	287	286	284	286
32.5°	263	267	266	264	268
35°	236	242	241	237	242
37.5°	209	219	218	211	216
40°	181	199	195	184	195
42.5°	159	179	174	163	176
45°	143	159	154	147	156
47.5°	128	137	137	131	134
50°	115	119	122	117	113
52.5°	103	104	109	104	96
55°	91	91	98	93	84
57.5°	81	81	86	84	76
60°	72	73	76	74	70
62.5°	64	65	67	65	62
65°	58	58	59	57	55
67.5°	51	50	52	49	49
70°	44	44	45	43	43
72.5°	39	39	40	40	39
75°	36	34	35	36	34
77.5°	31	29	30	31	29
80°	26	25	26	26	24
82.5°	20	19	20	21	18
85°	13	12	12	13	11
87.5°	5	5	5	5	4
90°	0	0	0	0	0

(END OF REPORT)