

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: 766686

Luminaire Tested: **MHKC-100xxxx**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: 766686
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MHKC-100xxxx
Description: FAIL-SAFE SHALLOW PARKING GARAGE LIGHT
Light Source: #201 - 100W MH CL BU MED 8500 LUMENS
Ballast/Driver: -

Luminaire Equipment:	<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
	AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
	AS-5443-2	Good	REFLECTOR
	AS-5443-3	Good	DRIVER
	AS-5443-4	Good	UPPER MODULE
	AS-5443-5	Good	LENS
	AS-5443-6	Good	DRIVER 2
	AS-5443-7	Good	TRIM RING

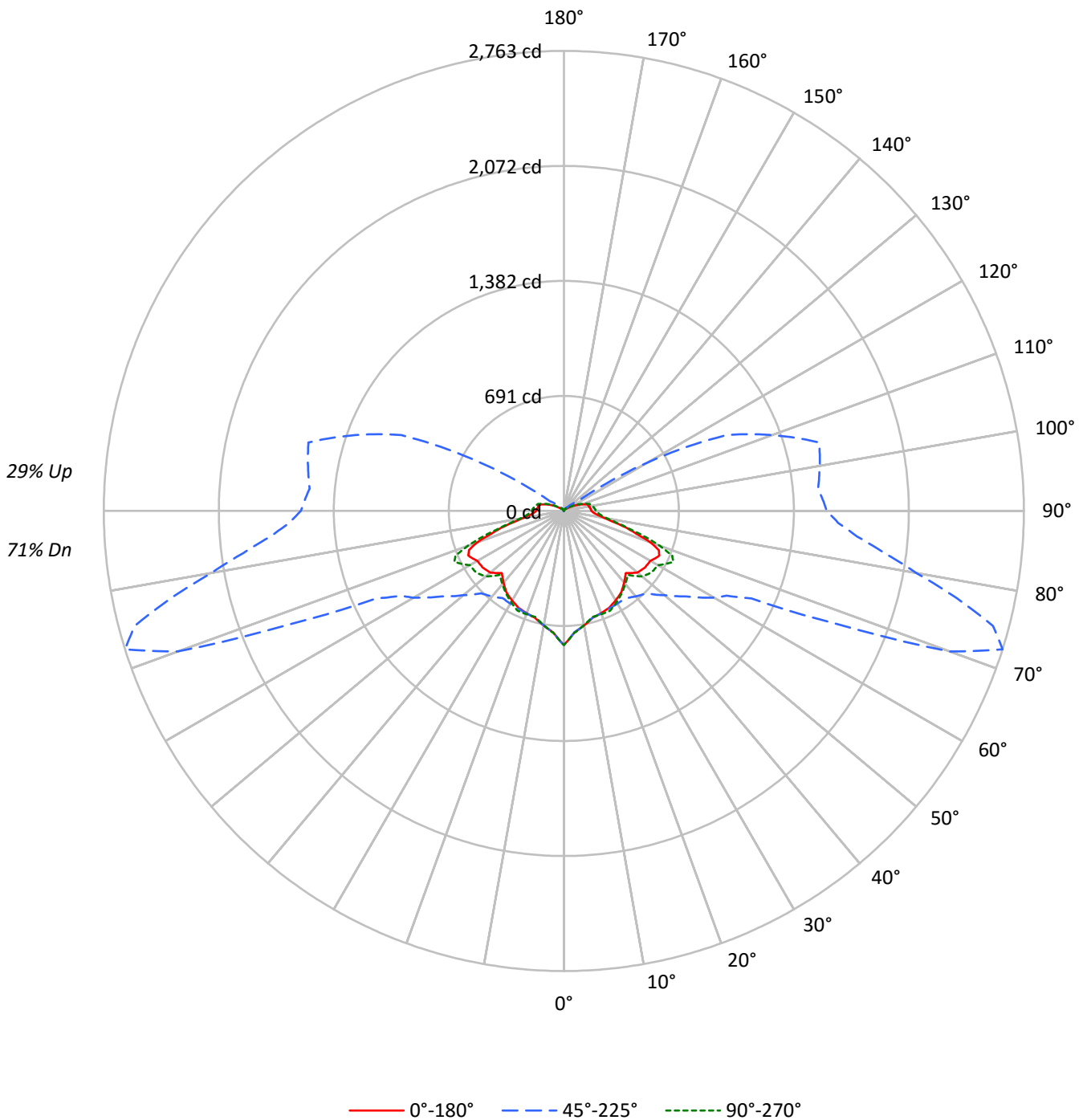
Summary

Lumens per Lamp: 8500 (1 lamp)
Luminaire Lumens: 7286.6 lumens
Efficiency: 85.7%
Efficacy: 72.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.73
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: Semi-Direct

Input Watts (W): 100
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
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	96	96	96	96	91	91	91	91	82	82	82	73	73	73	65	65	65	61
1	82	76	70	65	77	71	66	61	63	59	55	55	52	49	48	45	43	39
2	72	62	54	48	67	59	51	45	51	45	40	45	40	36	38	35	31	28
3	64	53	44	37	60	50	41	35	43	37	31	37	32	27	32	28	24	21
4	58	46	37	30	54	43	35	28	37	30	25	32	27	22	28	23	19	16
5	53	40	31	25	49	38	29	23	33	26	21	28	23	18	24	20	16	13
6	49	36	27	21	45	33	25	20	29	23	18	25	20	15	22	17	13	11
7	45	32	24	18	42	30	22	17	26	20	15	23	17	13	20	15	12	9
8	41	29	21	16	39	27	20	15	24	18	13	21	16	12	18	14	10	8
9	39	26	19	14	36	25	18	13	22	16	12	19	14	10	17	12	9	7
10	36	24	17	12	34	23	16	12	20	14	10	18	13	9	16	11	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	69.5	1.0	0.8	0°	805	805	805	805	805	
10°-20°	191.2	2.6	2.2	5°	732	731	734	731	732	70
20°-30°	297.3	4.1	3.5	15°	665	663	659	663	665	192
30°-40°	389.3	5.3	4.6	25°	642	646	660	646	642	295
40°-50°	492.0	6.8	5.8	35°	599	639	605	639	599	372
50°-60°	650.7	8.9	7.7	45°	526	700	543	700	526	441
60°-70°	999.1	13.7	11.8	55°	594	894	644	894	594	530
70°-80°	1189.6	16.3	14.0	65°	633	1243	725	1243	633	607
80°-90°	911.1	12.5	10.7	75°	387	2668	401	2668	387	408
90°-100°	856.5	11.8	10.1	85°	189	1768	214	1768	189	167
100°-110°	712.3	9.8	8.4	90°	166	1580	192	1580	166	92
110°-120°	389.6	5.3	4.6	95°	161	1533	185	1533	161	130
120°-130°	114.9	1.6	1.4	105°	148	1588	161	1588	148	143
130°-140°	23.2	0.3	0.3	115°	83	1077	92	1077	83	86
140°-150°	8.7	0.1	0.1	125°	31	101	32	101	31	37
150°-160°	2.4	0.0	0.0	135°	21	37	21	37	21	17
160°-170°	0.5	0.0	0.0	145°	16	15	16	15	16	9
170°-180°	0.0	0.0	0.0	155°	5	1	4	1	5	3
0°-30°	558.0	7.7	6.6	165°	2	2	1	2	2	1
0°-40°	947.3	13.0	11.1	175°	0	0	0	0	0	0
0°-60°	2090.0	28.7	24.6	180°	0	0	0	0	0	0
0°-90°	5189.8	71.2	61.1							
90°-120°	1958.5	26.9	23.0							
90°-150°	2105.2	28.9	24.8							
90°-180°	2108.0	28.9	24.8							
0°-180°	7286.6	100.0	85.7							



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	805	805	805	805	805	805	805	805	805	805	805
5°	732	737	738	724	731	731	731	733	732	736	734
15°	665	661	658	657	662	663	660	661	658	659	659
25°	642	637	637	637	645	646	652	652	647	653	660
35°	599	601	600	613	635	639	639	624	611	606	605
45°	526	531	545	587	645	700	654	601	561	546	543
50°	576	570	590	639	715	787	745	679	631	609	612
55°	594	608	635	687	800	894	835	736	688	645	644
60°	599	627	662	738	862	1041	910	813	731	694	651
62.5°	618	690	704	837	937	1102	1008	938	770	762	689
65°	633	759	720	1028	1171	1243	1210	1180	796	844	725
67.5°	617	760	719	1159	1512	1772	1546	1336	783	849	705
70°	556	707	684	1174	1665	2467	1745	1358	744	781	613
72.5°	456	621	602	1115	1716	2763	1760	1298	645	674	506
75°	387	581	515	1013	1649	2668	1727	1178	537	571	401
77.5°	304	457	436	913	1536	2415	1572	1070	450	488	323
80°	248	403	373	830	1445	2152	1471	970	384	425	266
82.5°	213	362	343	768	1390	1943	1415	906	348	382	233
85°	189	333	334	734	1374	1768	1389	864	337	346	214
87.5°	174	302	331	705	1394	1649	1377	829	331	312	203
90°	166	276	343	681	1404	1580	1378	806	335	283	192
95°	161	236	386	667	1440	1533	1489	775	373	251	185
105°	148	158	436	585	1371	1588	1500	601	466	178	161
115°	83	89	176	210	550	1077	700	229	252	92	92
125°	31	30	32	44	93	101	96	46	34	31	32
135°	21	21	20	22	28	37	29	23	21	21	21
145°	16	16	14	13	12	15	12	13	15	16	16
155°	5	5	4	2	1	1	1	2	3	4	4
165°	2	2	2	1	1	2	4	2	2	2	1
175°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	805	805	805	805	805	805	805	805	805	805
5°	736	732	733	731	731	731	724	738	737	732
15°	659	658	661	660	663	662	657	658	661	665
25°	653	647	652	652	646	645	637	637	637	642
35°	606	611	624	639	639	635	613	600	601	599
45°	546	561	601	654	700	645	587	545	531	526
50°	609	631	679	745	787	715	639	590	570	576
55°	645	688	736	835	894	800	687	635	608	594
60°	694	731	813	910	1041	862	738	662	627	599
62.5°	762	770	938	1008	1102	937	837	704	690	618
65°	844	796	1180	1210	1243	1171	1028	720	759	633
67.5°	849	783	1336	1546	1772	1512	1159	719	760	617
70°	781	744	1358	1745	2467	1665	1174	684	707	556
72.5°	674	645	1298	1760	2763	1716	1115	602	621	456
75°	571	537	1178	1727	2668	1649	1013	515	581	387
77.5°	488	450	1070	1572	2415	1536	913	436	457	304
80°	425	384	970	1471	2152	1445	830	373	403	248
82.5°	382	348	906	1415	1943	1390	768	343	362	213
85°	346	337	864	1389	1768	1374	734	334	333	189
87.5°	312	331	829	1377	1649	1394	705	331	302	174
90°	283	335	806	1378	1580	1404	681	343	276	166
95°	251	373	775	1489	1533	1440	667	386	236	161
105°	178	466	601	1500	1588	1371	585	436	158	148
115°	92	252	229	700	1077	550	210	176	89	83
125°	31	34	46	96	101	93	44	32	30	31
135°	21	21	23	29	37	28	22	20	21	21
145°	16	15	13	12	15	12	13	14	16	16
155°	4	3	2	1	1	1	2	4	5	5
165°	2	2	2	4	2	1	1	2	2	2
175°	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)