



DesignLights Consortium Test Report

Reference Standards

UL1598-2008
ANSI C82.77-10-2014
IES LM-79-2008

Prepared For
P.Q.L., Inc.
2285 Ward Avenue
Simi Valley, CA 93065

Test Laboratory:
UL-CCIC Company Limited
Test Laboratory Address:

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Catalog Number
55722

Project Number
4790484059
Report Number
4790484059_16

Test Date
2022-09-17~2022-09-20

Issue Date
2022-09-29

Revision Date
N/A

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Approved By

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Test Summary

DLC Technical Requirements V5.1- issued 2020-02-14

Requirement Category	Test Method	Requirements	Tolerance	Test Result
Minimum Light Output (lm)-Luminaires	IES LM-79-2008	≥10000	-10%	58584.2
Zonal Lumen Requirement 1(20°-50°)	IES LM-79-2008	≥30%	-10%	52.50%
Minimum Luminaire Efficacy (lm/W)-Luminaires	IES LM-79-2008	≥135	-3%	147.90
Allowable CCT (4000K)	IES LM-79-2008/ANSI C78.377-2015	3985±275	N/A	3828
Allowable CCT (5000K)	IES LM-79-2008/ANSI C78.377-2015	5029±283	N/A	4875
Minimum CRI	IES LM-79-2008/CIE 13.3-1995	≥70	-1	80
Minimum R9	IES LM-79-2008	≥40	-1	-9.0
Minimum Rg	IES LM-79-2008	≥89	-1	94
Minimum Rf	IES LM-79-2008	≥70	-1	81
Rcs,h1	IES LM-79-2008	-18%-23%	-1%	-15%
Unified Glare Rating (UGR)	IES LM-79-2008	≤28	N/A	27.9
L70 Lumen maintenance (Hours)	N/A	≥50000	N/A	≥50000
L90 Lumen maintenance (Hours)	N/A	≥36000	N/A	≥36000
Power Factor	ANSI C82.77-10-2014	≥0.9	-0.03	0.9549
Total Harmonic Distortion (A%)	ANSI C82.77-10-2014	≤20%	5%	11.29%
In-Situ Temperature Measurement Test for LED 1 (°C)	UL1598-2008	≤105	N/A	55.0
In-Situ Temperature Measurement Test for Driver 1 (°C)	UL1598-2008	≤90	N/A	55.4
Max Chromaticity Shift (1000-6000h)	N/A	≤0.007	0.0004	0.0023
Minimum Luminaire Warranty (Years)	N/A	≥5	N/A	≥5



Test List

Sample Received Date: 2022-09-07

Test Item	Test Date	Model Number	Tests Conducted By
Integrating Sphere Test	2022-09-17	55722-40K	Yang, Gavin X
Integrating Sphere Test	2022-09-17	55722-50K	Yang, Gavin X
Goniophotometer Test	2022-09-17	55722-40K	Yang, Gavin X
Goniophotometer Test	2022-09-17	55722-50K	Yang, Gavin X
THD and PF Test	2022-09-17	55722-40K	Yang, Gavin X
THD and PF Test	2022-09-17	55722-50K	Yang, Gavin X
In-Situ Temperature Measurement Test	2022-09-20	55722-40K	Yang, Gavin X
In-Situ Temperature Measurement Test	2022-09-20	55722-50K	Yang, Gavin X

Remark (if any)

1. UL test equipment information is recorded on Meter Use in UL's Aurora database.
2. The accuracy method decision rule is applied when the compliance or verdict is made to the results of this report.



Product Description

Lamp/Luminaire Description: High-bay Luminaires for Commercial and Industrial Buildings

Model Number: 55722

Electrical Parameter: 120-277V, 50/60Hz

LED Package: BXEN-(A)E-21L-3A, BXEN-(A)E-21L-39

Dimming Information: Continuous dimming capability

Products Scaled Value

Model Number	CCT	Luminous Flux	Power	Luminous Efficacy
55722	4000K	60000	400	150
55722	5000K	60400	400	151

Photos of Products Characteristics





Integrating Sphere Test

Model No.	55722-40K	Sample ID.	5308011
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

1. The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.

2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.

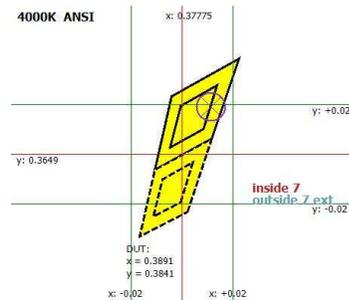
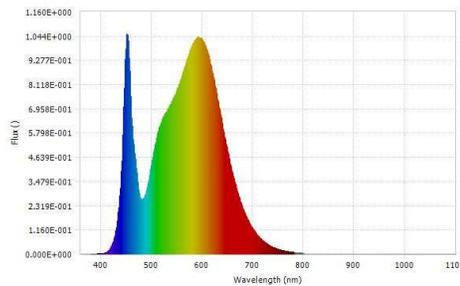
3. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.2	120.14	60	3.2423	388.61	0.9977	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3828	81	-4.0	0.0010	59259.5	152.49	N/A



Luminous Flux (lm)	59259.5	Chrom x	0.3891
Chrom y	0.3841	Chrom u	0.2279
Chrom v	0.3374	Duv	0.0010
Chrom u'	0.2279	Chrom v'	0.5061
CCT (K)	3828	Luminous Efficacy (lm/W)	152.49
Ra	81	R1	78.0
R2	88.0	R3	95.0
R4	79.0	R5	78.0
R6	83.0	R7	84.0
R8	59.0	R9	-4.0
R10	72.0	R11	77.0
R12	59.0	R13	81.0
R14	98.0	R15	71.0
Rf	82	Rg	94
Rcs,h1	-14%		

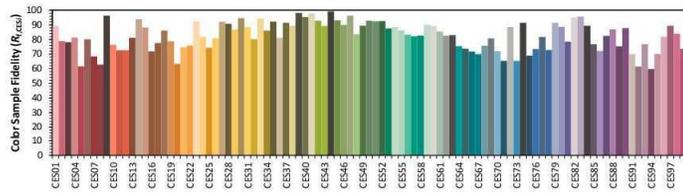
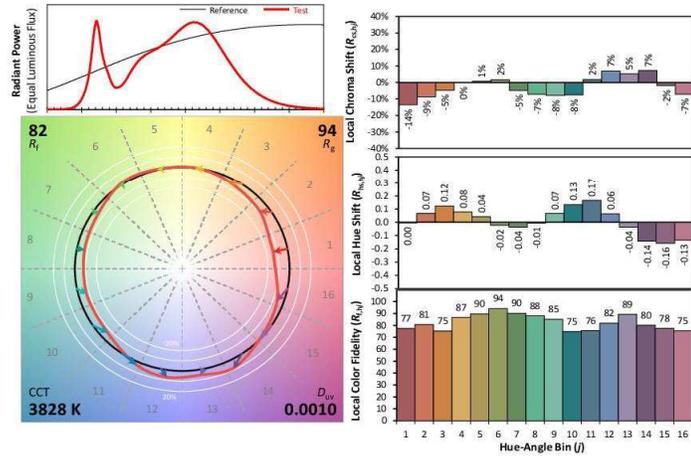


Integrating Sphere Test (Cont'd)

TM-30 Report

ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-(A)E-21L-3A Manufacturer: P.Q.L., Inc.
 Date: 9/17/2022 Model: 55722-40K



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3891	CIE 13.3-1995 (CRI)
y	0.3841	
u'	0.2278	
v'	0.5061	

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



Integrating Sphere Test

Model No.	55722-50K	Sample ID.	5308011
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

1. The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.

2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.

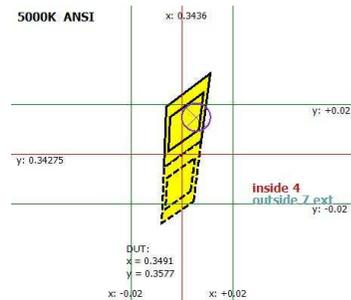
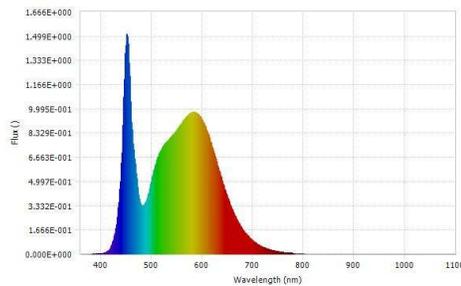
3. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4 π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.2	120.01	60	3.4037	407.49	0.9976	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
4875	80	-9.0	0.0015	60421.1	148.28	N/A

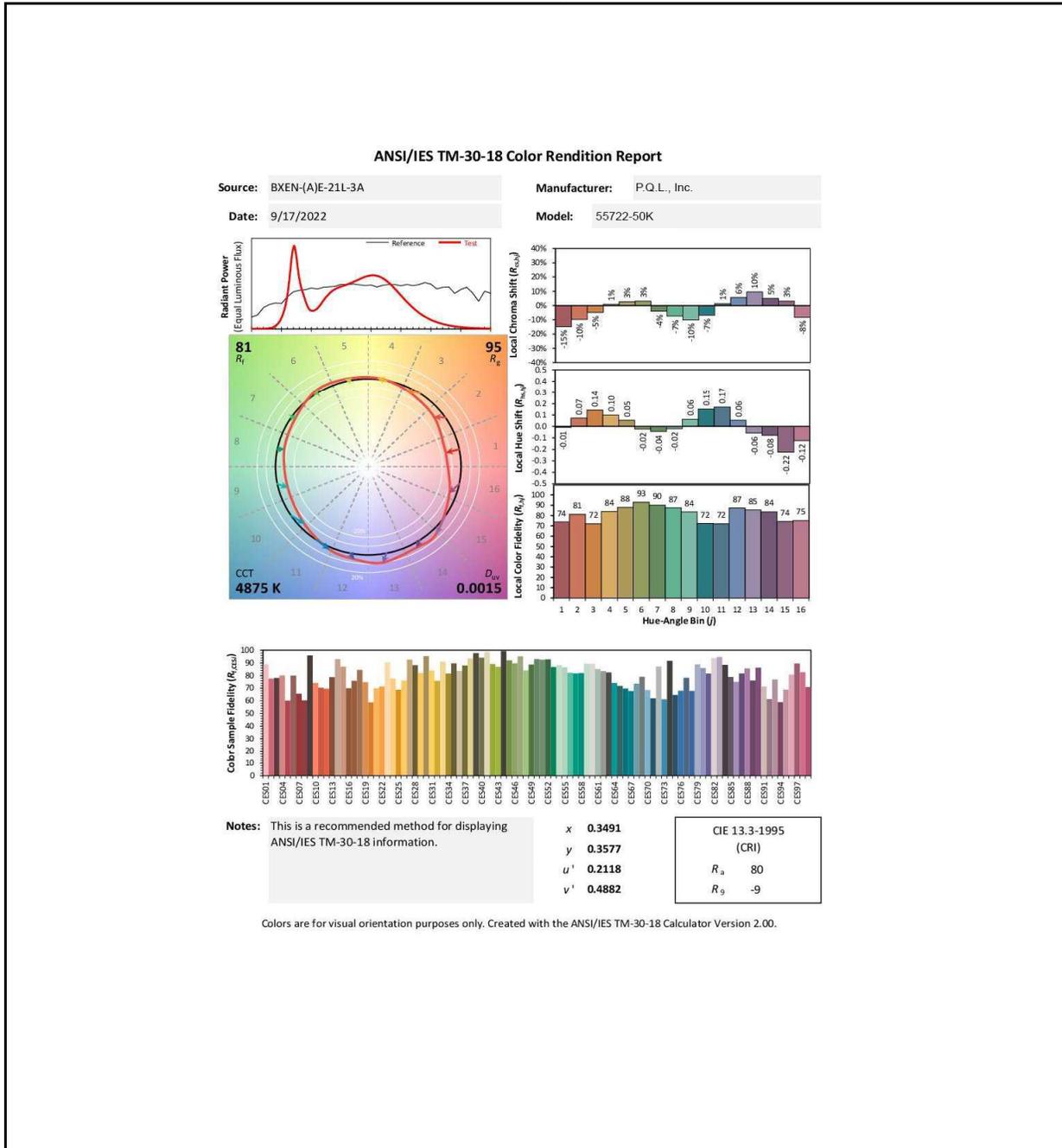


Luminous Flux (lm)	60421.1	Chrom x	0.3491
Chrom y	0.3577	Chrom u	0.2118
Chrom v	0.3255	Duv	0.0015
Chrom u'	0.2118	Chrom v'	0.4882
CCT (K)	4875	Luminous Efficacy (lm/W)	148.28
Ra	80	R1	77.0
R2	86.0	R3	93.0
R4	78.0	R5	78.0
R6	80.0	R7	85.0
R8	61.0	R9	-9.0
R10	68.0	R11	76.0
R12	53.0	R13	80.0
R14	96.0	R15	71.0
Rf	81	Rg	95
Rcs,h1	-15%		



Integrating Sphere Test (Cont'd)

TM-30 Report





Goniophotometer Test

Model No.	55722-40K	Sample ID.	5308011
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using a type C goniophotometer and software.
3.The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is rated current 3.8581A, 3.8558A, 3.8466A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonallumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.1	119.95	60	3.2491	388.74	0.9975	4.54%	Horizontal

Test Results

Luminous Flux (lm)	Zonal Lumen Requirement 1	Zonal Lumen Requirement 2	Beam Angle (50%)		Luminous Efficacy (lm/W)
	20°-50°	N/A	Horizontal Spread	Vertical Spread	
58584.2	52.70%	N/A	103.0	105.3	150.70

Backlight	Uplight	Glare
N/A	N/A	N/A

UGR		Spacing Criteria (0-180°)	Spacing Criteria (90°-270°)
Crosswise	Endwise		
27.8	27.2	N/A	N/A

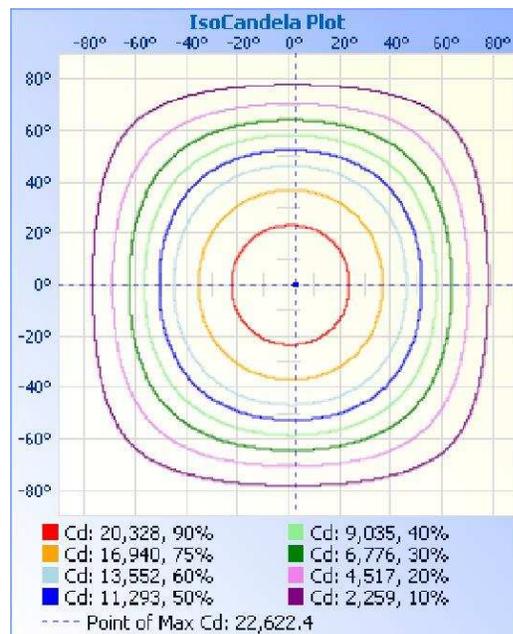


Goniophotometer Test (Cont'd)

Polar Candela Distribution



IsoCandela Plot





Goniophotometer Test (Cont'd)
Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	17445.3	29.80%
0-40	28315.8	48.30%
0-60	48173.1	82.20%
60-90	10255.6	17.50%
70-100	3996.5	6.80%
90-120	44.5	0.10%
0-90	58428.7	99.70%
90-180	155.4	0.30%
0-180	58584.2	100.00%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-5	537.3	0.90%	90-95	9.5	0.00%
5-10	1594.5	2.70%	95-100	7.8	0.00%
10-15	2598.4	4.40%	100-105	7.0	0.00%
15-20	3517.4	6.00%	105-110	6.6	0.00%
20-25	4291.8	7.30%	110-115	6.5	0.00%
25-30	4905.9	8.40%	115-120	7.1	0.00%
30-35	5328.2	9.10%	120-125	8.0	0.00%
35-40	5542.3	9.50%	125-130	9.3	0.00%
40-45	5515.8	9.40%	130-135	10.4	0.00%
45-50	5262.3	9.00%	135-140	11.3	0.00%
50-55	4836.3	8.30%	140-145	11.7	0.00%
55-60	4242.9	7.20%	145-150	11.8	0.00%
60-65	3519.4	6.00%	150-155	11.4	0.00%
65-70	2757.0	4.70%	155-160	10.9	0.00%
70-75	1988.3	3.40%	160-165	10.0	0.00%
75-80	1244.9	2.10%	165-170	8.6	0.00%
80-85	599.1	1.00%	170-175	5.5	0.00%
85-90	147.0	0.30%	175-180	1.9	0.00%



Goniophotometer Test (Cont'd)
Intensity Data(cd)

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524	22524
1	22431	22395	22463	22510	22529	22546	22495	22426	22402	22394	22448	22500	22528	22545	22500	22420	22402
2	22421	22394	22437	22507	22578	22608	22542	22446	22390	22386	22434	22520	22574	22606	22547	22451	22399
3	22405	22376	22416	22493	22583	22607	22551	22443	22378	22367	22408	22511	22599	22622	22558	22460	22391
4	22386	22347	22384	22475	22566	22585	22544	22428	22362	22347	22374	22477	22587	22622	22573	22451	22381
5	22365	22316	22349	22428	22536	22548	22520	22415	22334	22304	22356	22443	22561	22581	22557	22441	22347
6	22322	22277	22315	22363	22474	22501	22482	22377	22296	22252	22314	22385	22504	22537	22515	22413	22317
7	22295	22223	22272	22291	22386	22424	22420	22339	22242	22196	22279	22317	22431	22474	22476	22380	22284
8	22244	22157	22221	22227	22292	22357	22351	22273	22194	22141	22229	22266	22357	22420	22420	22332	22240
9	22195	22098	22151	22172	22205	22287	22267	22202	22149	22072	22164	22205	22277	22360	22347	22268	22189
10	22121	22023	22078	22104	22115	22195	22175	22128	22072	22014	22086	22136	22178	22283	22256	22182	22121
11	22035	21934	21984	22016	22015	22095	22080	22020	21978	21926	21990	22053	22068	22163	22161	22088	22026
12	21927	21844	21850	21920	21899	21972	21958	21903	21862	21834	21866	21951	21972	22062	22042	21972	21920
13	21816	21915	21832	21789	21886	21833	21809	21924	21899	21875	21904	21828	21862	21927	21918	21852	21804
14	21851	21808	21771	21801	21820	21839	21830	21783	21772	21763	21789	21869	21908	21810	21925	21891	21855
15	21733	21691	21654	21661	21688	21694	21684	21639	21645	21646	21675	21733	21797	21830	21823	21767	21733
16	21606	21560	21537	21523	21550	21546	21540	21501	21508	21521	21564	21602	21670	21695	21694	21638	21610
17	21467	21422	21423	21390	21400	21394	21399	21359	21372	21392	21442	21474	21529	21549	21554	21496	21469
18	21323	21273	21293	21249	21247	21243	21244	21208	21228	21254	21314	21330	21372	21392	21399	21340	21322
19	21165	21122	21142	21103	21078	21077	21079	21049	21071	21097	21165	21184	21193	21224	21230	21178	21158
20	20997	20962	20978	20947	20893	20895	20896	20875	20900	20926	20990	21018	21008	21040	21046	21005	20989
25	20083	20020	19944	19872	19814	19835	19864	19894	19933	19951	19984	19996	20005	20068	20100	20109	20090
30	18962	18878	18810	18691	18582	18623	18664	18740	18822	18825	18834	18808	18772	18852	18897	18947	18955
35	17597	17540	17396	17262	17158	17182	17244	17332	17405	17431	17427	17403	17389	17470	17549	17602	17612
40	16068	15942	15795	15610	15500	15552	15667	15782	15854	15868	15836	15794	15769	15884	16007	16080	16064
45	14281	14153	13995	13784	13661	13711	13838	13987	14088	14076	14006	13919	13886	14001	14141	14250	14269
50	12406	12324	12119	11889	11736	11757	11894	12052	12206	12210	12137	12036	11983	12065	12225	12349	12410
55	10525	10414	10194	9933	9792	9814	9961	10138	10287	10301	10230	10113	10079	10170	10338	10484	10544
60	8554	8406	8216	7987	7865	7884	8025	8198	8322	8314	8233	8121	8096	8183	8345	8497	8538
65	6595	6514	6324	6126	6015	6035	6160	6311	6419	6422	6345	6251	6227	6306	6453	6571	6599
70	4832	4765	4589	4421	4342	4359	4456	4576	4657	4671	4617	4560	4563	4634	4752	4850	4857
75	3250	3149	3019	2900	2833	2836	2911	3001	3056	3070	3035	3000	3010	3064	3160	3238	3238
80	1802	1757	1663	1568	1514	1512	1559	1626	1677	1696	1673	1657	1662	1700	1760	1806	1804
85	688	662	599	536	498	502	534	574	605	618	610	601	605	636	676	707	703
90	38	29	20	18	18	18	18	18	20	19	21	28	33	37	39	40	35
95	14	16	16	17	16	16	15	15	18	15	16	16	15	16	14	16	16
100	16	15	13	11	13	14	14	14	15	14	12	14	13	13	12	14	15
105	13	13	12	13	12	13	14	14	14	14	12	12	14	13	13	13	14
110	14	14	13	12	14	12	12	11	14	12	13	11	12	13	13	12	12
115	14	14	14	12	13	14	14	15	14	12	13	13	13	12	14	14	12
120	13	17	15	16	16	16	15	17	15	17	16	14	17	16	15	16	17
125	21	19	21	20	19	22	18	20	20	20	19	18	19	18	19	20	19
130	24	22	25	24	24	24	24	24	23	25	24	24	23	22	24	25	25
135	27	28	29	30	27	28	28	29	29	28	30	28	28	26	27	29	26
140	32	31	33	32	35	32	33	33	33	33	32	34	34	31	32	34	31
145	37	38	38	36	39	38	37	36	39	37	38	37	38	39	37	39	38
150	42	41	41	42	44	44	40	42	41	42	43	44	41	43	43	41	42
155	48	48	49	50	50	49	49	48	49	48	48	51	50	48	49	47	48
160	55	55	55	58	58	55	57	56	57	54	56	57	56	58	56	56	54
165	67	65	65	67	68	68	67	68	66	66	68	68	67	68	69	68	66
170	73	77	74	77	78	77	76	75	75	75	78	77	77	77	77	76	76
175	76	78	77	78	80	80	78	78	77	76	77	79	78	80	78	76	76
180	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81



Goniophotometer Test

Model No.	55722-50K	Sample ID.	5308011
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

- 1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
- 2.Photometric parameters were measured using a type C goniophotometer and software.
- 3.The ambient temperature shall be maintained at 25 °C ± 1 °C, measured at a point not more than 1 m from the sample and at the same height as the sample. The reference standard lamp is rated current 3.8606A, 3.8742A, 3.8840A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
- 4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonallumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.1	119.92	60	3.4035	407.150	0.9976	35.69%	Horizontal

Test Results

Luminous Flux (lm)	Zonal Lumen Requirement 1	Zonal Lumen Requirement 2	Beam Angle (50%)		Luminous Efficacy (lm/W)
	20°-50°	N/A	Horizontal Spread	Vertical Spread	
60217.0	52.50%	N/A	103.4	105.8	147.90

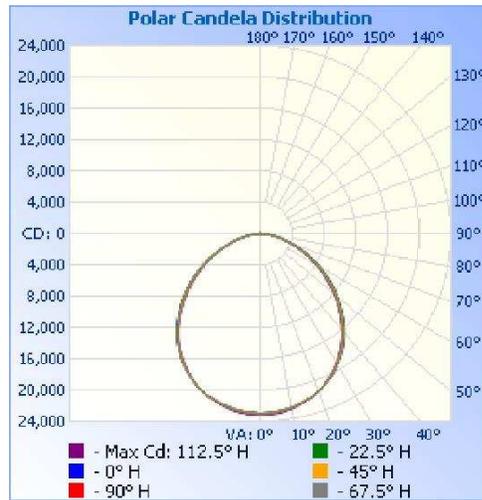
Backlight	Uplight	Glare
N/A	N/A	N/A

UGR		Spacing Criteria (0-180°)	Spacing Criteria (90°-270°)
Crosswise	Endwise		
27.9	27.5	N/A	N/A

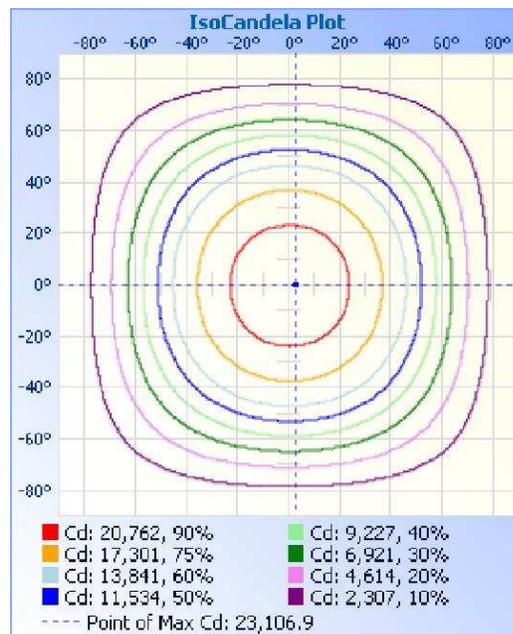


Goniophotometer Test (Cont'd)

Polar Candela Distribution



IsoCandela Plot





Goniophotometer Test (Cont'd)
Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	17833.9	29.60%
0-40	28981.6	48.10%
0-60	49407.1	82.00%
60-90	10650.9	17.70%
70-100	4173.0	6.90%
90-120	46.0	0.10%
0-90	60058.0	99.70%
90-180	159.0	0.30%
0-180	60217.0	100.00%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-5	548.8	0.90%	90-95	9.9	0.00%
5-10	1629.4	2.70%	95-100	8.1	0.00%
10-15	2649.4	4.40%	100-105	7.2	0.00%
15-20	3588.7	6.00%	105-110	6.8	0.00%
20-25	4394.6	7.30%	110-115	6.8	0.00%
25-30	5023.1	8.30%	115-120	7.3	0.00%
30-35	5463.0	9.10%	120-125	8.2	0.00%
35-40	5684.7	9.40%	125-130	9.3	0.00%
40-45	5662.6	9.40%	130-135	10.5	0.00%
45-50	5415.9	9.00%	135-140	11.5	0.00%
50-55	4977.4	8.30%	140-145	12.0	0.00%
55-60	4369.7	7.30%	145-150	12.0	0.00%
60-65	3642.6	6.00%	150-155	11.6	0.00%
65-70	2853.3	4.70%	155-160	11.1	0.00%
70-75	2062.0	3.40%	160-165	10.3	0.00%
75-80	1304.4	2.20%	165-170	8.8	0.00%
80-85	630.2	1.00%	170-175	5.6	0.00%
85-90	158.3	0.30%	175-180	1.9	0.00%



Goniophotometer Test (Cont'd)
Intensity Data(cd)

Candela Table - Type C																	
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996	22996
1	22903	22867	22936	22989	23021	23034	22994	22902	22873	22861	22941	22985	23024	23028	22989	22898	22889
2	22884	22861	22913	22990	23051	23068	23027	22927	22873	22853	22930	22987	23059	23080	23012	22916	22876
3	22869	22840	22889	22979	23065	23107	23043	22923	22868	22861	22882	22989	23078	23104	23044	22927	22857
4	22855	22822	22858	22953	23061	23086	23047	22925	22844	22818	22861	22958	23073	23093	23040	22918	22846
5	22814	22779	22830	22909	23025	23049	23022	22919	22818	22791	22829	22920	23034	23043	23028	22916	22818
6	22794	22741	22798	22859	22981	23009	22993	22882	22792	22749	22808	22864	22980	23012	22998	22896	22791
7	22756	22698	22768	22799	22908	22948	22940	22848	22755	22705	22761	22811	22917	22956	22954	22851	22754
8	22727	22630	22713	22740	22824	22880	22876	22778	22716	22634	22718	22737	22829	22901	22886	22800	22711
9	22651	22554	22643	22667	22724	22804	22777	22717	22654	22556	22642	22664	22737	22810	22798	22743	22652
10	22586	22488	22548	22582	22622	22703	22697	22634	22565	22485	22560	22592	22628	22728	22710	22643	22572
11	22495	22426	22461	22501	22523	22605	22592	22532	22476	22406	22468	22515	22538	22618	22600	22553	22494
12	22397	22328	22350	22412	22419	22499	22477	22428	22376	22324	22361	22428	22426	22515	22496	22442	22380
13	22284	22240	22240	22299	22316	22369	22357	22304	22271	22223	22236	22304	22334	22395	22377	22320	22280
14	22165	22110	22128	22170	22201	22231	22219	22172	22139	22111	22124	22170	22215	22258	22256	22201	22163
15	22045	21999	21997	22035	22074	22076	22077	22036	22018	21991	22001	22041	22085	22124	22106	22070	22040
16	21918	21881	21886	21885	21924	21923	21930	21876	21874	21855	21871	21892	21942	21969	21970	21918	21902
17	21920	21894	21908	21899	21934	21937	21934	21893	21896	21882	21908	21912	21810	21809	21914	21922	21914
18	21767	21750	21775	21750	21768	21777	21773	21739	21742	21737	21775	21768	21789	21806	21808	21763	21759
19	21604	21597	21624	21603	21596	21605	21611	21579	21584	21582	21628	21620	21618	21638	21645	21602	21605
20	21436	21434	21466	21450	21416	21428	21440	21411	21421	21421	21468	21466	21439	21464	21474	21443	21443
25	20522	20477	20450	20407	20370	20406	20445	20466	20480	20456	20447	20419	20403	20447	20488	20511	20514
30	19365	19333	19283	19188	19104	19161	19212	19283	19336	19306	19276	19202	19138	19207	19270	19340	19372
35	18010	17958	17865	17766	17688	17742	17813	17893	17940	17921	17852	17778	17726	17793	17881	17966	18008
40	16401	16350	16225	16089	16002	16082	16212	16316	16350	16309	16212	16103	16042	16140	16279	16381	16401
45	14589	14552	14399	14218	14126	14203	14345	14485	14565	14495	14371	14223	14165	14268	14427	14576	14627
50	12700	12672	12504	12298	12181	12226	12385	12534	12658	12607	12466	12297	12220	12294	12474	12636	12755
55	10790	10691	10522	10303	10196	10232	10396	10556	10670	10626	10482	10297	10226	10292	10482	10652	10758
60	8742	8678	8509	8309	8217	8258	8412	8580	8672	8614	8474	8300	8245	8317	8496	8674	8756
65	6760	6732	6574	6406	6326	6369	6501	6645	6716	6668	6535	6395	6346	6416	6577	6735	6810
70	4976	4910	4777	4646	4592	4620	4726	4840	4886	4848	4739	4631	4607	4664	4795	4918	4961
75	3323	3278	3180	3080	3039	3056	3139	3218	3251	3218	3138	3059	3052	3092	3198	3294	3315
80	1850	1838	1768	1703	1668	1679	1725	1782	1804	1786	1730	1682	1674	1705	1774	1842	1871
85	717	694	652	604	584	591	623	656	668	658	625	591	584	608	654	696	710
90	37	36	32	29	29	25	26	24	27	25	24	24	29	28	32	37	37
95	16	17	15	14	15	16	16	17	16	17	17	16	16	14	14	17	18
100	15	13	14	14	13	15	14	14	16	14	13	13	13	13	14	15	14
105	14	13	13	12	11	12	13	14	13	13	13	12	12	13	13	14	14
110	14	13	13	14	12	10	13	13	12	13	15	12	12	14	14	14	12
115	16	14	13	14	15	14	13	14	13	14	14	16	12	14	13	12	16
120	16	16	17	16	16	13	15	16	17	15	16	18	16	15	14	18	16
125	21	20	19	20	18	18	19	20	21	18	20	19	20	17	18	21	20
130	24	24	24	24	23	24	25	23	25	25	24	24	22	22	25	24	26
135	29	31	28	30	29	28	30	27	29	28	28	28	29	29	28	27	28
140	33	35	34	33	33	34	34	34	34	34	35	34	33	33	34	35	32
145	38	38	39	39	37	38	37	36	36	37	38	39	40	39	38	40	39
150	44	45	43	44	43	44	42	42	44	44	43	44	43	44	43	43	44
155	49	50	50	50	50	49	50	48	48	48	49	50	50	50	48	49	48
160	57	57	56	58	58	57	59	57	57	57	57	57	56	58	58	57	56
165	69	69	70	69	69	69	68	68	67	68	69	69	69	69	69	68	68
170	78	78	76	78	77	78	79	76	78	79	78	80	79	80	77	77	79
175	78	80	79	81	81	80	79	80	77	79	80	81	81	82	80	78	79
180	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83



THD and PF Test

Model No.	55722-50K	Sample ID.	5308011
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature ($^{\circ}\text{C}$)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.1	119.95	60	3.2491	388.74	0.9975	4.54%	Horizontal
25.1	277.06	60	1.4404	381.00	0.9549	11.08%	Horizontal



THD and PF Test

Model No.	55722-50K	Sample ID.	5308011
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature ($^{\circ}\text{C}$)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
25.1	119.91	60	3.4035	407.14	0.9976	4.34%	Horizontal
25.1	277.14	60	1.5097	399.9	0.9558	11.29%	Horizontal



In-Situ Temperature Measurement Test

Model No.	55722-40K	Sample ID.	5308011
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Test Method

1. In-Situ Temperature Measurement Test is conducted according to the UL 1598-2008, Section 14.
2. The testing was conducted in a room with ambient temperature of 25 °C ± 5 °C. The apparatus construction followed those described in UL1598-2008 for normal temperature testing. Thermocouples were placed on the LED package in the locations indicated by LM-80 report. Thermocouples were placed on the LED driver case in the locations specified by the manufacture if necessary. The temperature was recorded after the lamp was operated by 7.5 hours.
3. The data and photos in LM-80 test report is provided by the customer/ The data and photos in driver specification is provided by the

In-Situ Temperature Measurement Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
23.4	119.95	60	3.2491	388.74	0.9975	4.54%	Horizontal

Test Results (LEDs)

Thermocouple Location	Declared Light Source Current (mA)	Temperature for Light Source (°C)		Max Chromaticity Shift (1000-6000h)	LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp (°C)
		Test Result	Test Result (Correct to 25 °C)				
Ambient TEMP	N/A	23.4	25.0				
TMP of Location 1	45	51.5	53.1	0.0023	BXEN-(A)E-21L39	120	105
TMP of Location 2	70	52.3	53.9	0.0023	BXEN-(A)E-21L3A	120	105

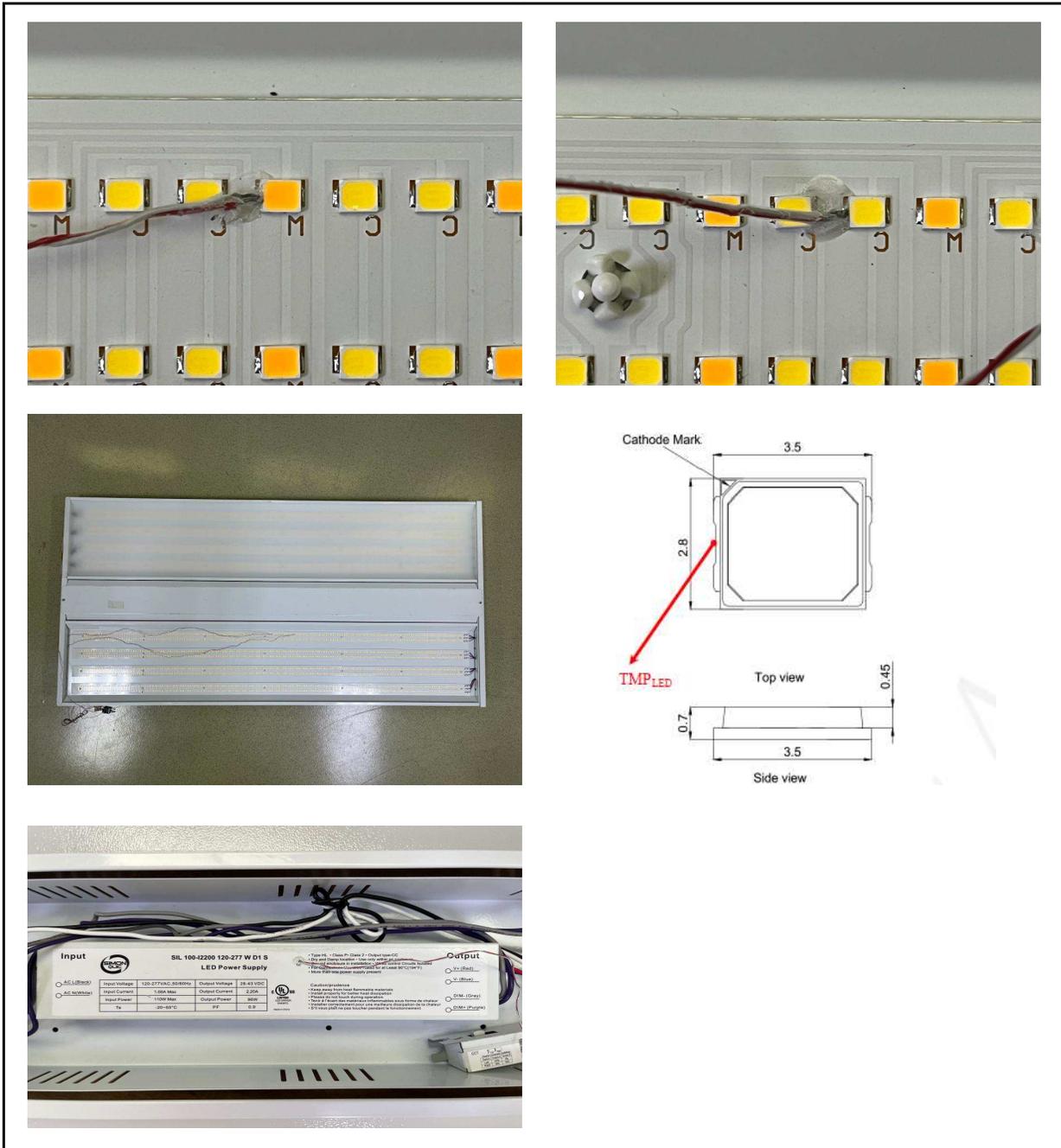
Test Results (Drivers)

Thermocouple Location	Temperature for Driver (°C)		Driver Model Number	Driver Limit Temp (°C)
	Test Result	Test Result (Correct to 25 °C)		
Ambient TEMP	23.4	25.0		
TMP of Location 1	53.2	54.8	SIL100-I2200 120-277 W D1 S	90



In-Situ Temperature Measurement Test (Cont'd)

Test Photos for Ts Point of Light Sources & Tc Point of Drivers





In-Situ Temperature Measurement Test

Model No.	55722-50K	Sample ID.	5308011
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Test Method

1. In-Situ Temperature Measurement Test is conducted according to the UL 1598-2008, Section 14.
2. The testing was conducted in a room with ambient temperature of 25 °C ± 5 °C. The apparatus construction followed those described in UL1598-2008 for normal temperature testing. Thermocouples were placed on the LED package in the locations indicated by LM-80 report. Thermocouples were placed on the LED driver case in the locations specified by the manufacture if necessary. The temperature was recorded after the lamp was operated by 7.5 hours.
3. The data and photos in LM-80 test report is provided by the customer/ The data and photos in driver specification is provided by the

In-Situ Temperature Measurement Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
23.2	119.91	60	3.4035	407.14	0.9976	4.34%	Horizontal

Test Results (LEDs)

Thermocouple Location	Declared Light Source Current (mA)	Temperature for Light Source (°C)		Max Chromaticity Shift (1000-6000h)	LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp (°C)
		Test Result	Test Result (Correct to 25 °C)				
Ambient TEMP	N/A	23.2	25.0				
TMP of Location 1	70	53.2	55.0	0.0023	BXEN-(A)E-21L3A	120	105

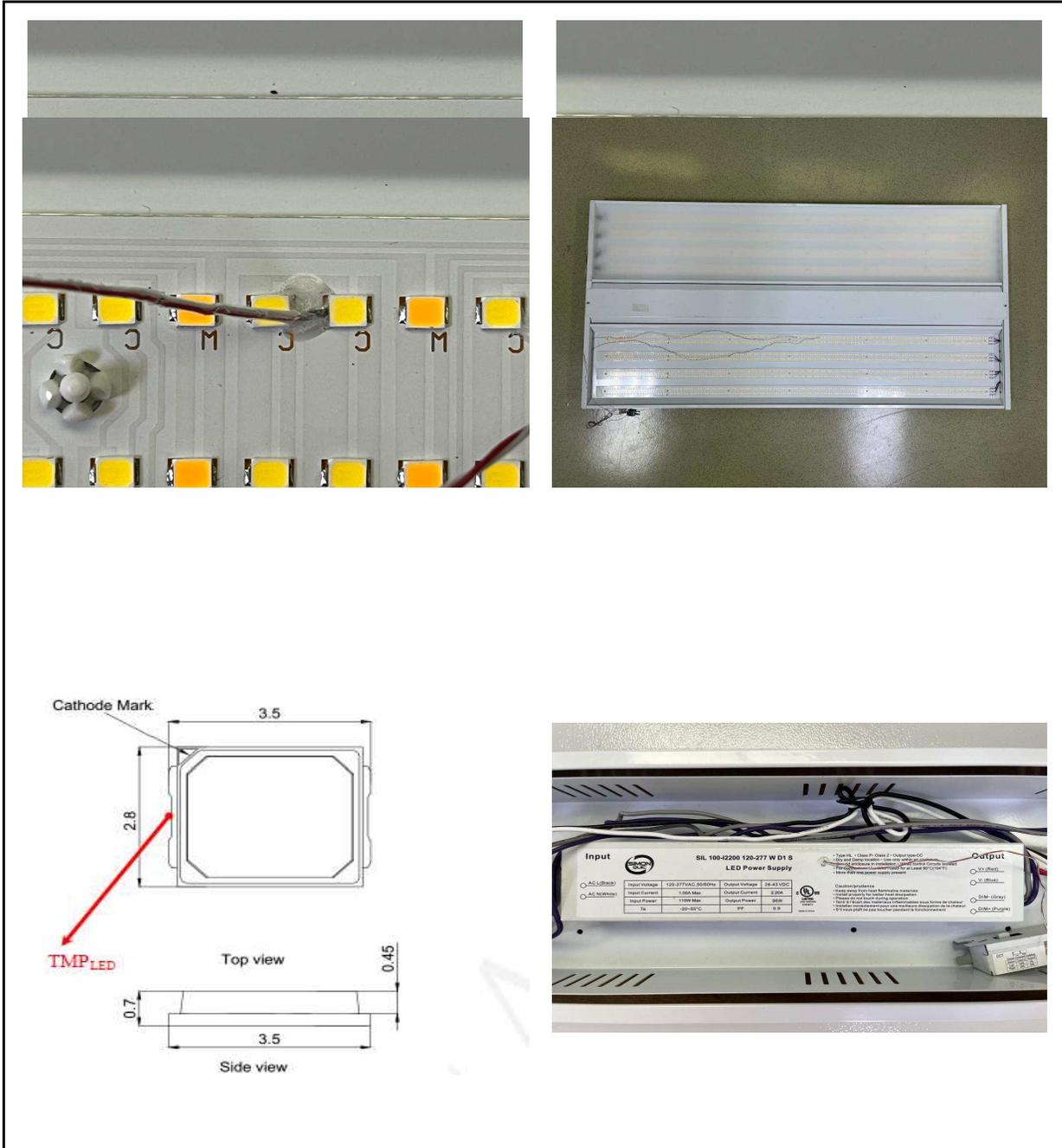
Test Results (Drivers)

Thermocouple Location	Temperature for Driver (°C)		Driver Model Number	Driver Limit Temp (°C)
	Test Result	Test Result (Correct to 25 °C)		
Ambient TEMP	23.2	25.0		
TMP of Location 1	53.6	55.4	SIL100-I2200 120-277 W D1 S	90



In-Situ Temperature Measurement Test (Cont'd)

Test Photos for Ts Point of Light Sources & Tc Point of Drivers





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