



Report No.: BLC2009007E-B

LM-79-08 Test Report

For

LEDVANCE LLC

(Brand Name: SYLVANIA)

200 Ballardvale St. Wilmington, MA 01887 USA

LED Corn Lamp

Model name(s): LED18HIDRSC2MED

Representative (Tested) Model:

LED18HIDRSC2MED(3000K)

LED18HIDRSC2MED(4000K)

LED18HIDRSC2MED(5000K)

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Grace Li

Engineer: Grace Li

Date: 2020-09-11

Review By:

Jason Luo

Manager: Jason Luo



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1.1 Product Information:

Organization Name	LEDVANCE LLC		
Brand Name	SYLVANIA		
Model Number	LED18HIDRSC2MED		
SKU (if available)	N/A		
Type of Product (for integral lamps, list base type and lamp type)	LED Corn Lamp		
Rated Voltage / Frequency	100-277Vac, 50/60 Hz		
Nominal Power	18W		
Rated Initial Lamp Lumen	--		
Declared CCT	3000K, 4000K, 5000K		
LED Manufacturer	Lumileds		
LED Model	L128-XX80RA35000H1		
Sample Number	BLC2009007E-B1(3000K), B2(4000K), B3(5000K)		
Luminaire Aperture (for downlights)	--		in.
Luminaire Length	--		mm
Luminaires Width	--		mm
Number of Units (modular products)	N/A		s
Photo			
			



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1.2 Test Specifications:

Date of Receipt	2020-09-07
Date of Test	2020-09-11
Test item	<ol style="list-style-type: none">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	BL-QP-033

1.3 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.



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2.1 Electrical, Photometric and Chromaticity Measurements*(Refer to Work Instruction BL-QP-033)*

Test date	2020-09-11	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED18HIDRSC2MED(3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.156	18.59	0.991	10.93
7E-B1	277.1	60	0.072	18.50	0.932	11.14
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	1
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2923	R3	94	R11	78
Duv	-0.0011	R4	79	R12	73
Chromaticity (x, y)	x=0.4409 y=0.4027	R5	81	R13	83
Chromaticity (u', v')	u(u')=0.2537 v'=0.5214	R6	91	R14	97
Color Rendering Index (CRI)	81	R7	79	R15	72
R9	1	R8	54	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

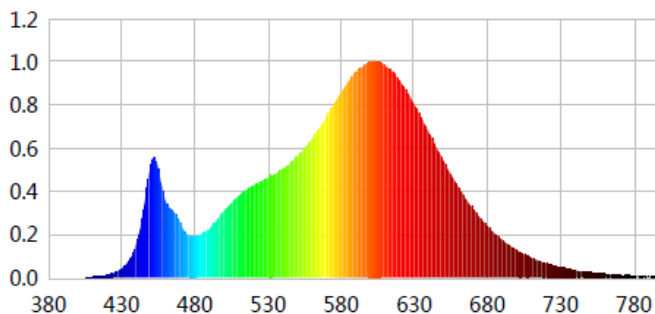
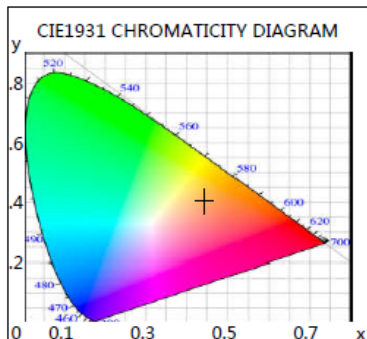
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	2742.6	2671.2
Luminous Efficacy (lm/W)	147.53	144.39
Most worst Luminous/Highest	143.69	
Beam Angle (°)	--	--
Center Beam Candle Power (cd)	139	--



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Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0053	525	0.4455	25.9022	670	0.3197	18.5865
385	0.0006	0.0327	530	0.4628	26.9115	675	0.2767	16.0888
390	0.0009	0.0510	535	0.4813	27.9842	680	0.2390	13.8988
395	0.0005	0.0267	540	0.5029	29.2428	685	0.2046	11.8982
400	0.0012	0.0693	545	0.5292	30.7668	690	0.1761	10.2402
405	0.0012	0.0677	550	0.5632	32.7481	695	0.1509	8.7714
410	0.0022	0.1281	555	0.5996	34.8621	700	0.1279	7.4392
415	0.0055	0.3208	560	0.6435	37.4180	705	0.1084	6.3018
420	0.0119	0.6919	565	0.6936	40.3271	710	0.0924	5.3734
425	0.0220	1.2764	570	0.7453	43.3322	715	0.0786	4.5684
430	0.0429	2.4928	575	0.8021	46.6351	720	0.0667	3.8774
435	0.0801	4.6565	580	0.8588	49.9315	725	0.0566	3.2936
440	0.1536	8.9282	585	0.9079	52.7881	730	0.0473	2.7482
445	0.3183	18.5045	590	0.9505	55.2661	735	0.0386	2.2459
450	0.5317	30.9145	595	0.9810	57.0381	740	0.0358	2.0835
455	0.5046	29.3417	600	0.9976	58.0039	745	0.0310	1.7998
460	0.3564	20.7251	605	0.9994	58.1055	750	0.0259	1.5044
465	0.3099	18.0180	610	0.9852	57.2845	755	0.0219	1.2744
470	0.2542	14.7784	615	0.9555	55.5544	760	0.0197	1.1448
475	0.1981	11.5183	620	0.9152	53.2129	765	0.0148	0.8623
480	0.1890	10.9887	625	0.8611	50.0688	770	0.0133	0.7723
485	0.2043	11.8767	630	0.8035	46.7203	775	0.0116	0.6766
490	0.2274	13.2223	635	0.7400	43.0257	780	0.0079	0.4601
495	0.2656	15.4441	640	0.6732	39.1402	785	0.0063	0.3691
500	0.3083	17.9267	645	0.6067	35.2731	790	0.0091	0.5282
505	0.3461	20.1256	650	0.5410	31.4533	795	0.0049	0.2860
510	0.3788	22.0237	655	0.4812	27.9764	800	0.0043	0.2480
515	0.4051	23.5532	660	0.4202	24.4326			
520	0.4264	24.7944	665	0.3681	21.4009			



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TM30

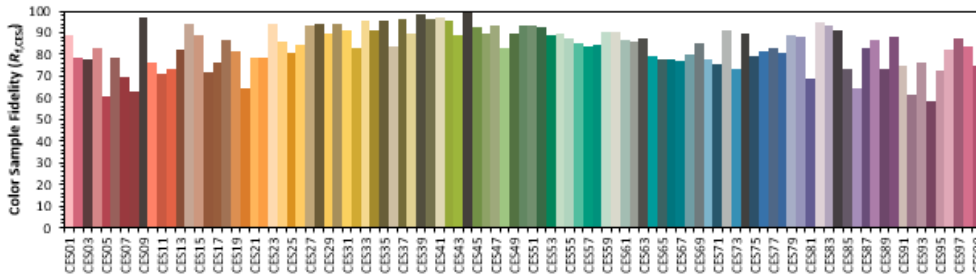
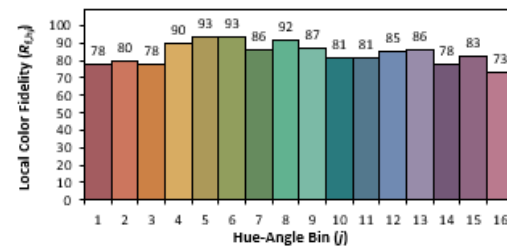
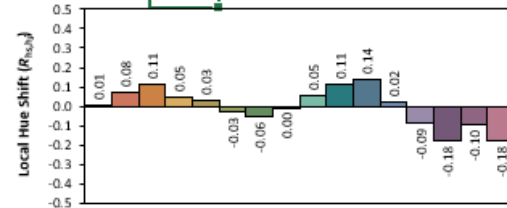
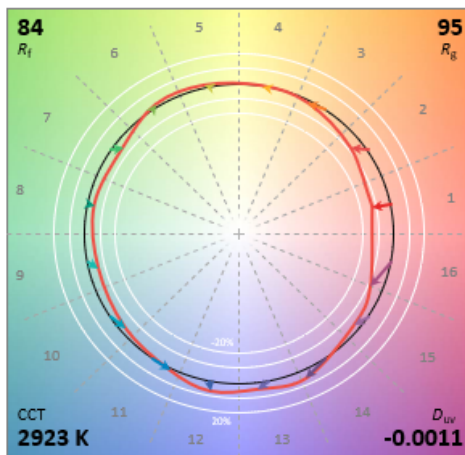
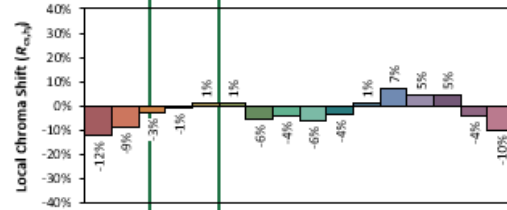
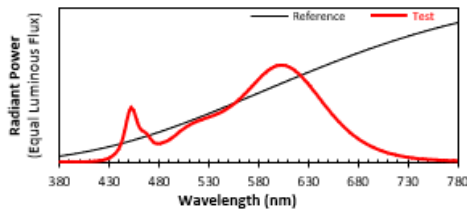
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-3080RA35000H1

Manufacturer: ASHART LIGHT CO., LTD

Date: 2020/9/11

Model: LED18HIDRSC2MED(3000K)



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

x 0.4409

y 0.4027

u' 0.2538

v' 0.5214

CIE 13.3-1995
(CRI)

R_a 81

R_g 0

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



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Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	147.6	5.4%	5.4%
0-40	289.7	10.6%	10.6%
0-60	730.7	26.6%	26.6%
60-90	825.9	30.1%	30.1%
70-100	839.5	30.6%	30.6%
90-120	763.7	27.8%	27.8%
0-90	1,556.6	56.8%	56.8%
90-180	1,186.1	43.2%	43.2%
0-180	2,742.8	100%	100%

Lumens Per Zone

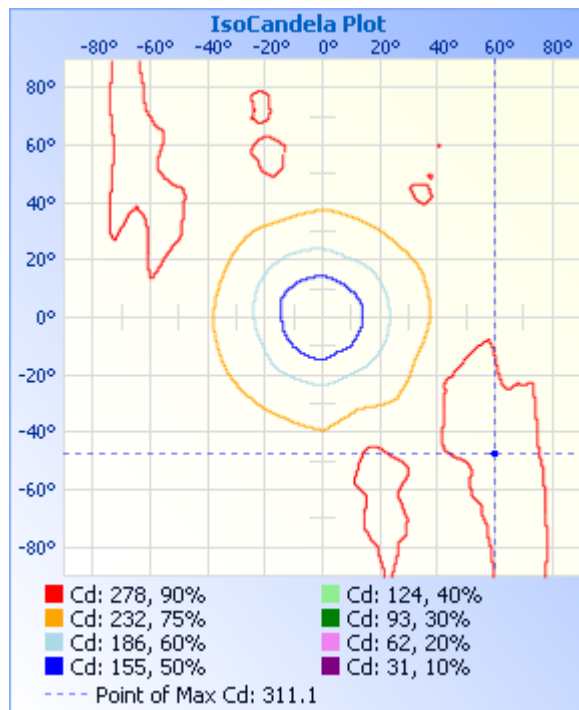
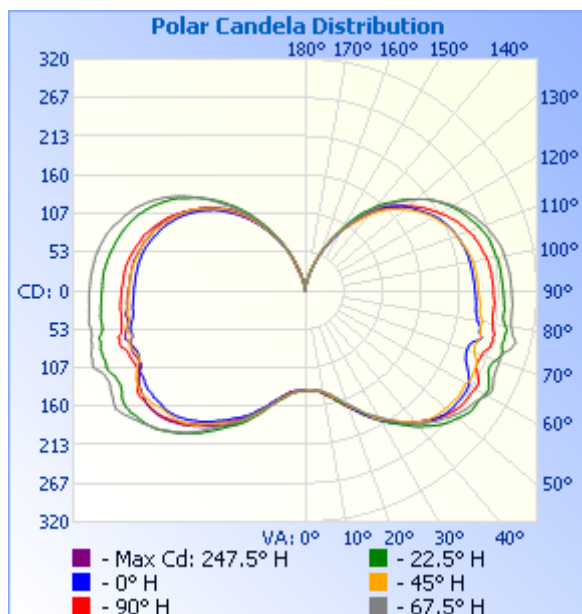
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	13.5	0.5%	90-100	277.3	10.1%
10-20	45.1	1.6%	100-110	259.8	9.5%
20-30	89.0	3.2%	110-120	226.6	8.3%
30-40	142.1	5.2%	120-130	180.6	6.6%
40-50	198.2	7.2%	130-140	127.1	4.6%
50-60	242.9	8.9%	140-150	74.1	2.7%
60-70	263.8	9.6%	150-160	32.5	1.2%
70-80	280.0	10.2%	160-170	7.8	0.3%
80-90	282.1	10.3%	170-180	0.4	0%



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Photometric Data





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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	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139
1	139	139	139	139	138	139	139	138	138	139	139	139	139	139	139	139	139
2	139	140	139	139	139	139	139	138	138	139	139	139	139	139	140	139	139
3	139	140	139	139	139	139	140	139	139	140	139	139	139	139	140	139	139
4	139	140	139	139	139	140	140	139	139	140	140	139	139	139	140	139	139
5	139	140	139	139	139	140	140	139	140	141	141	140	139	140	140	139	139
6	139	140	140	139	140	141	141	140	140	142	142	141	140	140	140	140	139
7	140	140	140	139	140	142	142	140	141	143	143	142	140	141	141	141	140
8	140	140	140	140	141	143	144	142	142	145	144	143	142	141	142	141	140
9	142	142	141	140	143	144	146	143	144	147	146	145	144	143	142	143	142
10	143	142	142	142	145	146	146	146	146	149	148	147	145	145	145	145	143
11	145	145	144	143	147	147	147	148	148	151	150	149	147	147	146	147	145
12	148	148	146	145	149	149	150	150	150	153	152	151	150	148	149	150	148
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29	204	201	202	198	201	205	203	208	202	214	208	209	207	206	206	212	204

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90	235	274	240	285	260	241	261	246	236	281	243	298	253	241	263	244	235
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2.2 Electrical, Photometric and Chromaticity Measurements*(Refer to Work Instruction BL-QP-033)*

Test date	2020-09-11	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED18HIDRSC2MED(4000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.153	18.15	0.99	10.92
7E-B2	277.1	60	0.070	18.03	0.928	10.49
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	83	R9	12
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	3765	R3	96	R11	82
Duv	-0.0018	R4	83	R12	66
Chromaticity (x, y)	x=0.3899 y=0.3785	R5	84	R13	86
Chromaticity (u', v')	u(u')=0.2306 v'=0.5037	R6	89	R14	99
Color Rendering Index (CRI)	84	R7	84	R15	77
R9	12	R8	64	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Sphere-Spectroradiometer Method:

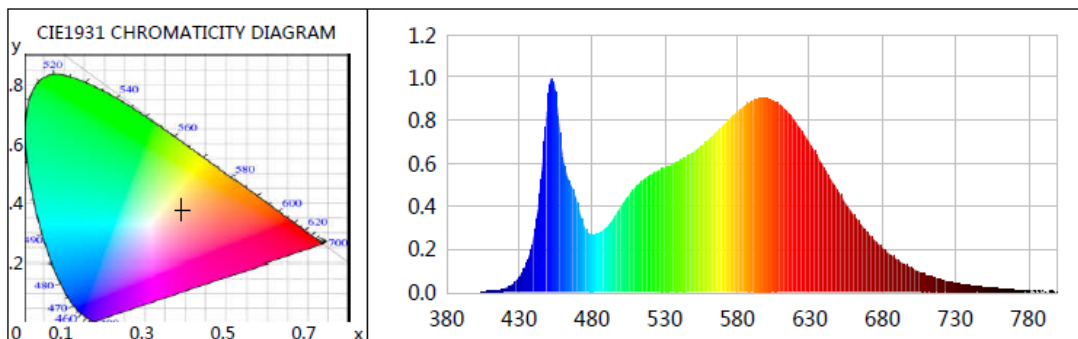
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	2871.3	2794.6
Luminous Efficacy (lm/W)	158.20	155.00
Most worst Luminous/Highest Watts	153.97	



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Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0001	0.0044	525	0.5634	32.5992	670	0.2745	15.8832
385	0.0005	0.0318	530	0.5798	33.5469	675	0.2375	13.7397
390	0.0009	0.0512	535	0.5943	34.3897	680	0.2046	11.8388
395	0.0003	0.0146	540	0.6124	35.4371	685	0.1759	10.1760
400	0.0008	0.0487	545	0.6310	36.5119	690	0.1521	8.7988
405	0.0018	0.1069	550	0.6537	37.8231	695	0.1308	7.5683
410	0.0028	0.1630	555	0.6790	39.2914	700	0.1109	6.4154
415	0.0078	0.4520	560	0.7100	41.0838	705	0.0950	5.4980
420	0.0177	1.0230	565	0.7428	42.9776	710	0.0793	4.5910
425	0.0349	2.0221	570	0.7735	44.7538	715	0.0680	3.9322
430	0.0699	4.0451	575	0.8090	46.8133	720	0.0590	3.4160
435	0.1367	7.9084	580	0.8417	48.7034	725	0.0498	2.8798
440	0.2581	14.9334	585	0.8670	50.1676	730	0.0421	2.4339
445	0.5297	30.6508	590	0.8889	51.4321	735	0.0335	1.9402
450	0.9268	53.6269	595	0.9029	52.2419	740	0.0313	1.8138
455	0.9355	54.1331	600	0.9035	52.2776	745	0.0283	1.6382
460	0.6316	36.5465	605	0.8908	51.5451	750	0.0218	1.2603
465	0.5088	29.4391	610	0.8699	50.3368	755	0.0206	1.1895
470	0.4122	23.8519	615	0.8375	48.4586	760	0.0170	0.9816
475	0.3015	17.4464	620	0.7948	45.9903	765	0.0125	0.7208
480	0.2670	15.4492	625	0.7462	43.1770	770	0.0130	0.7529
485	0.2769	16.0217	630	0.6919	40.0378	775	0.0083	0.4815
490	0.3021	17.4810	635	0.6362	36.8129	780	0.0062	0.3585
495	0.3456	19.9983	640	0.5762	33.3388	785	0.0039	0.2284
500	0.3989	23.0835	645	0.5192	30.0419	790	0.0076	0.4390
505	0.4483	25.9393	650	0.4636	26.8243	795	0.0062	0.3599
510	0.4894	28.3198	655	0.4088	23.6531	800	0.0035	0.2025
515	0.5209	30.1398	660	0.3599	20.8225			
520	0.5448	31.5237	665	0.3149	18.2233			



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TM30

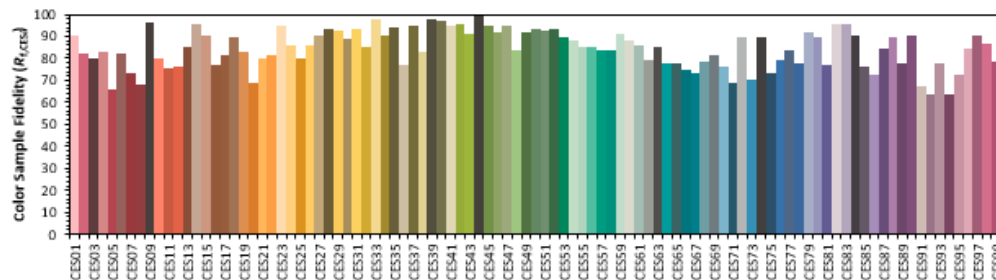
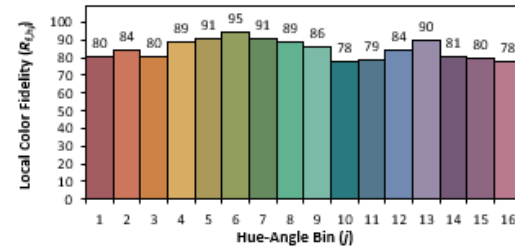
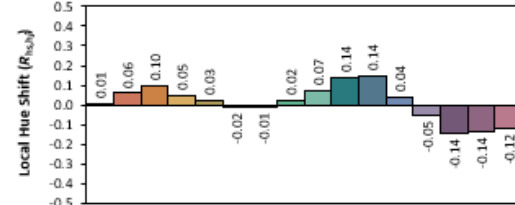
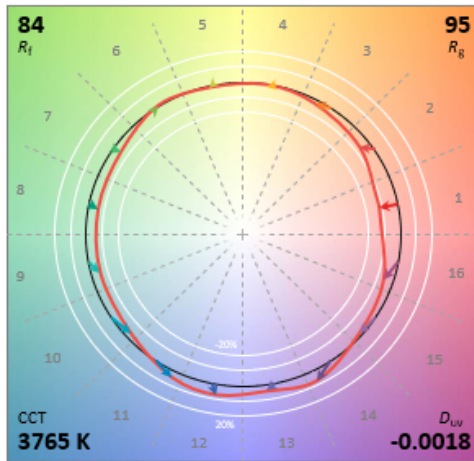
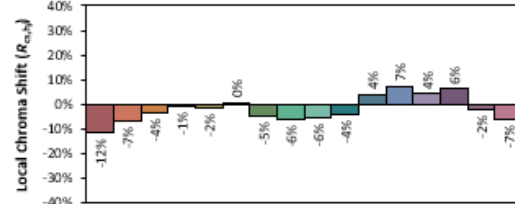
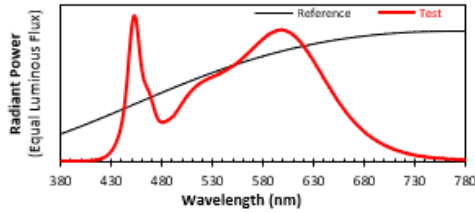
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-4080RA35000H1

Date: 2020/9/11

Manufacturer: ASMART LIGHT CO., LTD

Model: LED18HIDRSC2MED(4000K)



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

x 0.3899
 y 0.3785
 u' 0.2306
 v' 0.5037

CIE 13.3-1995
(CRI)

R_a 84
 R_9 12

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



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Zonal Lumen Tabulation

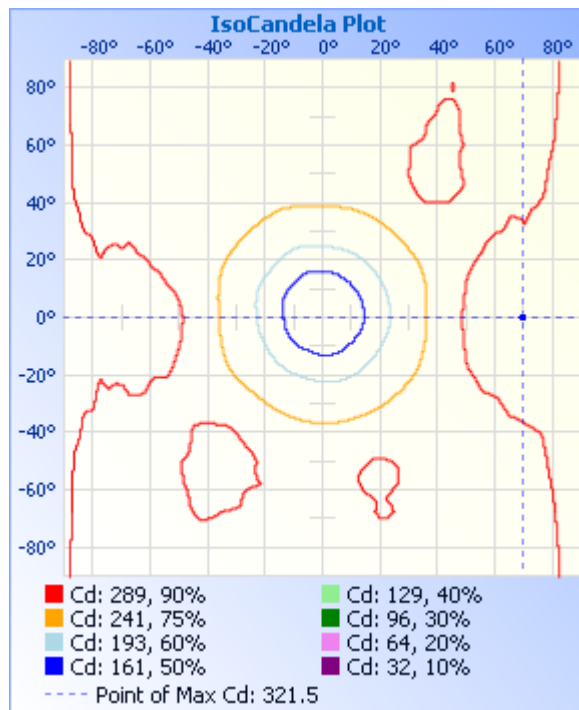
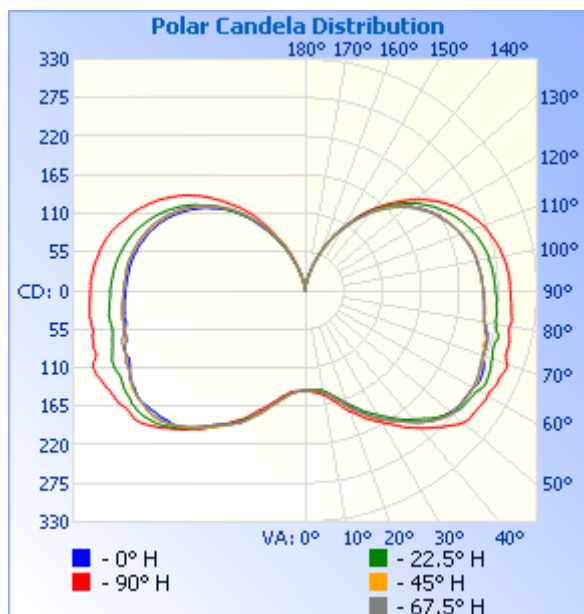
Zonal Lumen Summary				Lumens Per Zone					
Zone	Lumens	% Lamp	% Luminaire	Zone	Lumens	% Total	Zone	Lumens	% Total
0-30	153.4	5.3%	5.3%	0-10	14.0	0.5%	90-100	289.4	10.1%
0-40	300.3	10.5%	10.5%	10-20	46.9	1.6%	100-110	270.7	9.4%
0-60	763.0	26.6%	26.6%	20-30	92.6	3.2%	110-120	235.6	8.2%
60-90	871.5	30.4%	30.3%	30-40	146.9	5.1%	120-130	187.7	6.5%
70-100	877.9	30.6%	30.6%	40-50	207.2	7.2%	130-140	132.4	4.6%
90-120	795.7	27.7%	27.7%	50-60	255.5	8.9%	140-150	77.6	2.7%
0-90	1,634.5	56.9%	56.9%	60-70	283.0	9.9%	150-160	34.4	1.2%
90-180	1,236.9	43.1%	43.1%	70-80	293.3	10.2%	160-170	8.7	0.3%
0-180	2,871.4	100%	100%	80-90	295.1	10.3%	170-180	0.5	0%



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Photometric Data





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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
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39	241	236	241	241	252	250	257	252	251	252	252	250	254	246	247	241	241
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61	278	287	277	276	300	279	299	287	280	293	282	280	311	281	300	275	278

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62	280	289	278	276	301	279	299	286	280	293	281	279	312	281	300	277	280
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2.2 Electrical, Photometric and Chromaticity Measurements*(Refer to Work Instruction BL-QP-033)*

Test date	2020-09-11	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED18HIDRSC2MED(5000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.155	18.42	0.991	10.65
7E-B3	277.1	60	0.071	18.45	0.932	10.22
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	6
Frequency (Hz)	60	R2	89	R10	73
CCT (K)	4972	R3	94	R11	80
Duv	0.0030	R4	81	R12	55
Chromaticity (x, y)	x=0.3465 y=0.3587	R5	81	R13	83
Chromaticity (u', v')	u(u')=0.2097 v'=0.4883	R6	84	R14	97
Color Rendering Index (CRI)	83	R7	87	R15	75
R9	6	R8	66	--	--
Rf	83				
Rg	95				
Rcs,h1(%)	-13				

Photometric Measurement – Sphere-Spectroradiometer Method:

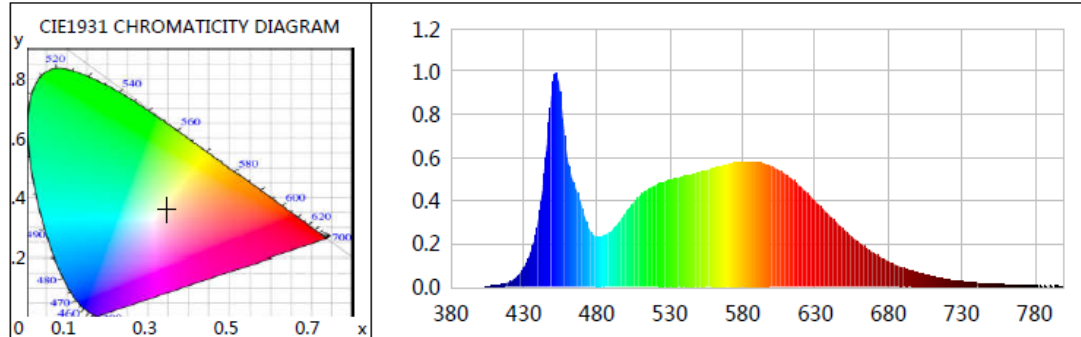
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	2776.8	2760.1
Luminous Efficacy (lm/W)	150.75	149.60
Most worst Luminous/Highest Watts	149.60	



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Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.0297	525	0.4862	36.6897	670	0.1554	11.7277
385	0.0006	0.0438	530	0.4941	37.2915	675	0.1354	10.2206
390	0.0007	0.0555	535	0.5031	37.9679	680	0.1171	8.8384
395	0.0007	0.0527	540	0.5132	38.7276	685	0.1006	7.5944
400	0.0012	0.0900	545	0.5206	39.2880	690	0.0888	6.6992
405	0.0018	0.1371	550	0.5309	40.0645	695	0.0752	5.6743
410	0.0044	0.3311	555	0.5403	40.7775	700	0.0646	4.8732
415	0.0098	0.7398	560	0.5507	41.5602	705	0.0548	4.1333
420	0.0218	1.6429	565	0.5607	42.3147	710	0.0470	3.5501
425	0.0450	3.3981	570	0.5682	42.8838	715	0.0403	3.0408
430	0.0876	6.6090	575	0.5757	43.4476	720	0.0347	2.6192
435	0.1650	12.4524	580	0.5816	43.8938	725	0.0290	2.1908
440	0.3073	23.1887	585	0.5797	43.7459	730	0.0245	1.8488
445	0.5984	45.1629	590	0.5794	43.7233	735	0.0202	1.5277
450	0.9556	72.1185	595	0.5714	43.1262	740	0.0199	1.5006
455	0.9005	67.9617	600	0.5601	42.2732	745	0.0165	1.2462
460	0.5988	45.1870	605	0.5411	40.8348	750	0.0143	1.0813
465	0.4705	35.5117	610	0.5197	39.2211	755	0.0118	0.8903
470	0.3668	27.6820	615	0.4941	37.2916	760	0.0093	0.7053
475	0.2657	20.0514	620	0.4648	35.0748	765	0.0088	0.6617
480	0.2331	17.5954	625	0.4309	32.5208	770	0.0084	0.6372
485	0.2382	17.9765	630	0.3968	29.9442	775	0.0057	0.4323
490	0.2579	19.4663	635	0.3624	27.3497	780	0.0036	0.2738
495	0.2974	22.4461	640	0.3267	24.6550	785	0.0033	0.2493
500	0.3447	26.0160	645	0.2947	22.2409	790	0.0066	0.4976
505	0.3882	29.2992	650	0.2615	19.7380	795	0.0035	0.2630
510	0.4242	32.0115	655	0.2324	17.5352	800	0.0035	0.2651
515	0.4515	34.0732	660	0.2040	15.3924			
520	0.4711	35.5511	665	0.1789	13.4978			

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TM30

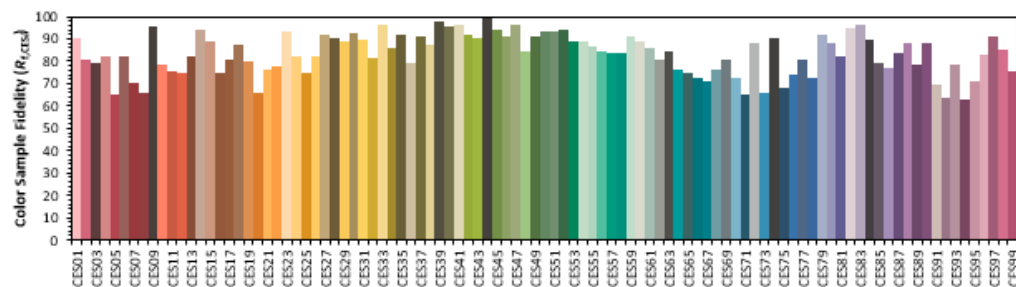
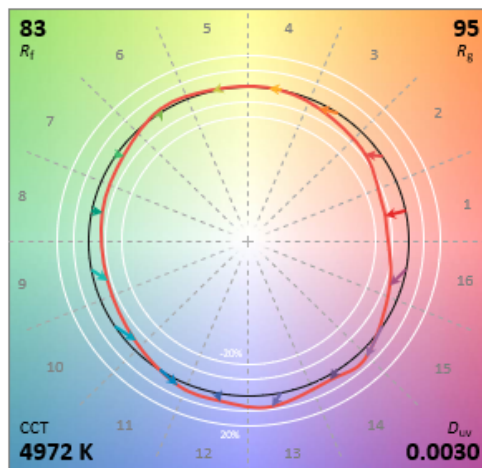
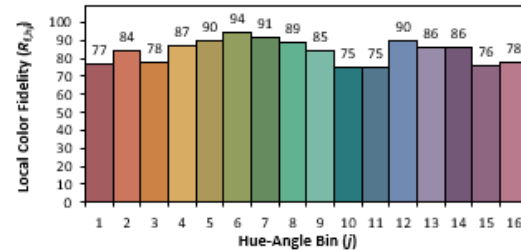
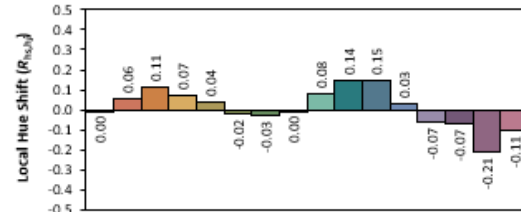
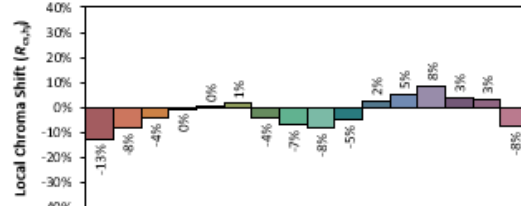
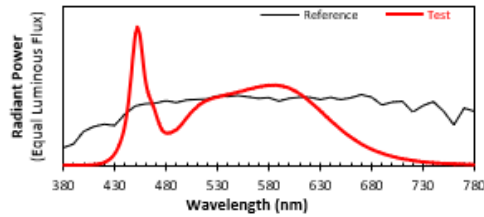
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-5080RA35000H1

Manufacturer: ASMAIT LIGHT CO., LTD

Date: 2020/9/11

Model: LED18HIDRSC2MED(5000K)



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

x 0.3465
 y 0.3587
 u' 0.2097
 v' 0.4883

CIE 13.3-1995
(CRI)

R_a 83
 R_g 6

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



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Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	146.6	5.3%	5.3%
0-40	286.9	10.3%	10.3%
0-60	736.2	26.5%	26.5%
60-90	840.0	30.3%	30.2%
70-100	844.6	30.4%	30.4%
90-120	770.6	27.7%	27.7%
0-90	1,576.2	56.8%	56.8%
90-180	1,200.7	43.2%	43.2%
0-180	2,777.0	100%	100%

Lumens Per Zone

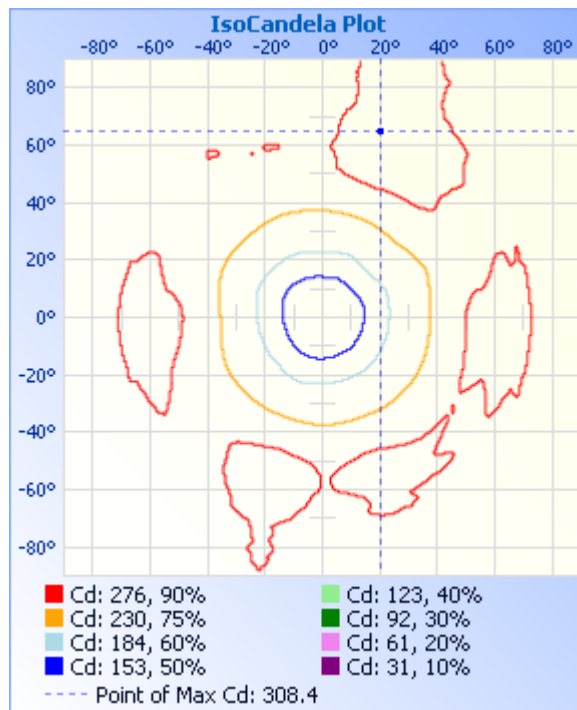
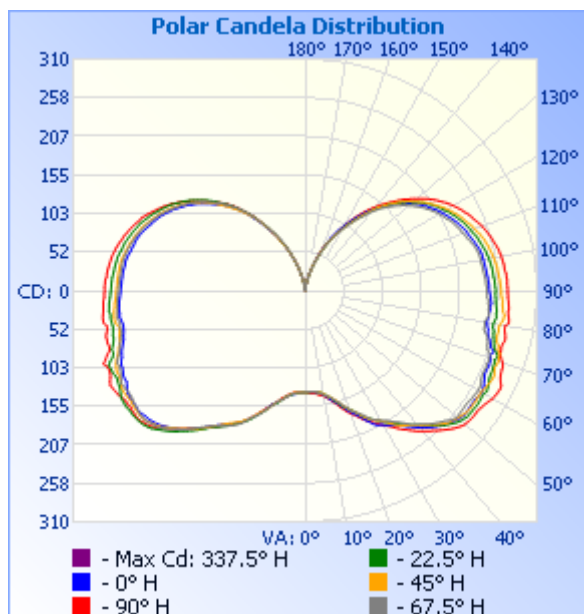
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	13.3	0.5%	90-100	279.6	10.1%
10-20	44.7	1.6%	100-110	262.3	9.4%
20-30	88.6	3.2%	110-120	228.6	8.2%
30-40	140.3	5.1%	120-130	182.7	6.6%
40-50	200.6	7.2%	130-140	129.0	4.6%
50-60	248.7	9.0%	140-150	75.9	2.7%
60-70	275.1	9.9%	150-160	33.6	1.2%
70-80	280.3	10.1%	160-170	8.5	0.3%
80-90	284.6	10.3%	170-180	0.5	0%



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Photometric Data





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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	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
1	136	136	136	136	137	137	137	137	137	137	137	137	137	136	136	136	136
2	136	136	136	136	137	137	137	137	138	137	137	137	136	137	136	135	136
3	136	136	136	135	137	138	137	138	138	138	137	137	136	137	136	135	136
4	136	136	136	135	138	137	137	139	138	138	136	137	136	137	136	136	136
5	137	136	136	136	138	138	138	138	139	138	137	137	137	137	136	136	137
6	137	136	137	136	139	139	139	139	139	139	138	138	137	137	137	137	137
7	138	137	137	137	140	140	140	139	140	140	139	139	138	138	138	138	138
8	138	138	138	138	141	142	141	140	141	141	140	141	140	139	140	139	138
9	140	139	139	140	142	143	143	142	142	143	142	143	141	140	141	141	140
10	142	141	140	142	143	144	145	143	145	144	144	145	144	143	144	141	142
11	144	142	142	143	145	147	147	146	147	147	147	147	145	144	146	144	144
12	147	145	145	145	147	149	149	148	149	150	149	149	147	146	149	146	147
13	150	146	146	147	150	151	151	150	151	152	151	151	150	149	152	149	150
14	152	149	148	149	153	154	154	153	154	155	153	153	153	152	154	151	152
15	155	153	151	151	156	157	157	155	156	157	156	157	156	155	157	154	155
16	157	156	154	154	160	160	160	158	159	160	160	160	159	157	161	157	157
17	161	159	157	157	163	164	164	161	162	164	164	164	162	160	165	160	161
18	164	163	161	161	167	168	168	164	166	168	167	167	165	164	168	163	164
19	168	166	165	164	171	172	172	167	170	171	170	171	169	168	172	166	168
20	172	168	168	168	175	175	176	171	174	175	173	175	173	172	176	169	172
21	175	171	172	172	177	179	180	174	178	178	177	178	176	175	181	172	175
22	179	174	175	175	180	183	183	178	182	183	181	182	181	178	184	177	179
23	182	178	178	178	184	186	186	182	185	187	185	186	185	182	188	181	182
24	186	183	182	181	188	191	190	186	189	190	188	190	189	185	192	185	186
25	191	187	186	184	192	194	194	190	193	193	192	194	193	189	196	189	191
26	196	190	190	188	194	198	198	193	196	197	195	198	196	191	200	193	196
27	200	193	193	192	198	199	202	196	199	200	198	201	199	194	204	196	200
28	204	196	196	196	201	201	205	200	201	203	200	204	202	196	207	200	204
29	205	199	199	198	204	204	208	204	204	206	203	207	204	198	210	203	205

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30	208	202	201	201	208	207	210	207	207	209	205	209	208	202	213	206	208
31	210	205	205	203	211	210	213	211	209	212	208	212	211	205	216	209	210
32	212	209	208	205	214	212	216	214	212	215	212	214	214	208	218	212	212
33	215	211	213	208	219	215	219	217	215	218	215	216	217	210	221	215	215
34	217	214	217	212	223	219	221	221	218	221	219	219	220	214	224	219	217
35	221	218	221	215	227	222	224	225	222	224	223	222	223	217	227	222	221
36	224	222	223	219	230	226	227	229	226	229	227	225	227	220	231	227	224
37	228	225	227	223	234	229	231	233	230	233	231	229	230	223	235	231	228
38	231	228	230	227	238	232	235	236	233	237	234	233	234	227	239	235	231
39	236	232	233	231	243	236	240	240	237	241	238	238	237	230	243	239	236
40	240	235	236	234	246	240	243	244	241	245	242	242	241	234	248	243	240
41	243	239	239	237	249	244	246	248	246	249	245	247	246	237	252	246	243
42	247	243	243	241	253	247	250	253	249	254	249	250	250	241	256	250	247
43	250	247	246	244	257	251	254	257	252	258	252	254	253	244	260	254	250
44	253	251	250	247	260	254	257	261	255	262	255	257	257	247	263	258	253
45	256	255	253	250	264	257	260	266	259	265	259	261	261	250	265	263	256
46	258	259	257	253	267	260	263	270	261	269	263	265	265	253	269	267	258
47	261	262	260	256	271	263	266	274	264	272	267	268	270	257	272	271	261
48	263	266	262	260	274	264	269	279	266	276	269	270	273	260	274	275	263
49	265	269	264	262	277	267	271	283	268	278	271	272	276	262	276	279	265
50	267	271	266	264	279	268	272	288	270	281	273	274	278	263	279	283	267
51	269	273	267	264	280	270	273	291	271	282	276	276	280	264	281	287	269
52	270	275	269	264	280	270	274	293	272	283	277	276	281	264	283	291	270
53	270	275	271	264	281	271	274	295	274	283	277	276	282	264	282	294	270
54	270	275	271	264	281	272	274	297	275	284	277	275	282	264	282	296	270
55	270	275	271	264	281	272	273	298	275	284	277	275	282	265	281	297	270
56	270	276	271	264	282	274	272	299	274	285	277	274	281	265	281	297	270
57	270	276	272	266	284	274	272	299	275	285	277	273	282	267	281	297	270
58	271	276	272	266	285	274	272	299	275	285	276	273	282	267	282	297	271
59	272	276	272	266	287	274	272	300	275	285	277	272	282	267	283	299	272
60	273	276	272	267	289	275	272	300	274	284	278	273	285	267	283	300	273
61	272	278	273	267	290	275	271	299	272	282	278	273	286	267	284	302	272

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62	271	277	274	266	291	275	269	300	270	280	278	274	287	266	287	303	271
63	268	276	275	264	292	274	268	301	268	280	276	275	289	267	288	304	268
64	267	274	276	263	292	271	266	299	269	279	274	274	290	266	289	306	267
65	265	272	277	262	288	268	265	296	268	278	274	272	288	264	289	307	265
66	265	272	277	262	286	266	264	293	266	279	274	270	285	262	288	308	265
67	265	272	275	263	284	265	264	291	265	280	274	269	283	262	288	308	265
68	266	272	274	262	284	265	264	291	265	280	273	268	283	263	286	305	266
69	265	271	275	263	283	266	264	292	264	281	271	270	284	265	285	303	265
70	264	270	275	262	281	265	262	292	261	278	268	266	287	266	284	304	264
71	262	273	274	261	277	263	260	286	259	272	265	264	282	262	284	303	262
72	265	269	273	256	274	257	259	281	258	270	262	261	279	257	280	302	265
73	260	264	269	255	274	257	257	280	255	270	261	259	273	253	278	300	260
74	258	263	269	254	273	251	255	281	253	268	258	258	273	255	278	295	258
75	256	261	265	252	274	251	252	283	251	266	256	255	274	252	275	296	256
76	253	260	264	251	276	252	250	282	250	264	256	254	273	250	274	296	253
77	251	258	264	247	275	253	250	281	249	264	255	252	273	249	274	298	251
78	250	258	264	244	273	250	249	281	248	262	254	252	272	247	273	300	250
79	248	255	264	245	272	253	248	278	247	262	254	252	269	246	273	300	248
80	247	256	264	244	272	251	250	282	248	262	257	252	270	245	274	299	247
81	247	257	267	245	276	251	249	284	249	263	258	253	273	246	274	299	247
82	248	258	268	247	275	251	250	281	251	263	258	254	273	247	274	300	248
83	248	257	268	248	274	251	251	280	249	262	257	253	273	245	274	303	248
84	249	258	266	246	273	250	249	280	250	264	257	253	271	245	276	301	249
85	248	257	265	247	274	249	249	280	250	263	256	252	271	246	274	300	248
86	250	256	264	245	273	249	248	279	249	263	256	252	271	245	273	301	250
87	249	256	265	245	272	249	248	277	249	262	254	252	270	245	273	299	249
88	248	255	263	243	271	248	248	276	248	261	253	251	269	245	273	298	248
89	247	254	262	243	271	247	247	276	247	260	253	250	269	244	272	298	247
90	246	255	262	243	271	247	247	275	247	260	252	250	268	243	271	297	246
91	246	254	262	243	271	246	246	275	246	259	252	250	268	243	271	297	246
92	246	254	261	242	270	246	246	275	246	259	252	249	268	242	270	297	246
93	245	254	261	242	270	246	246	274	246	259	252	249	268	242	270	296	245



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94	245	253	260	241	270	245	245	274	245	258	251	248	266	241	269	296	245
95	244	252	259	241	270	245	245	274	245	258	251	248	266	240	268	295	244
96	244	252	259	240	268	245	244	273	245	257	250	248	266	240	268	294	244
97	243	252	259	239	268	245	244	272	244	257	250	247	265	239	267	294	243
98	243	251	257	239	268	244	243	272	243	256	250	247	264	239	266	293	243
99	242	250	257	239	267	244	243	271	243	255	249	247	263	240	266	292	242
100	242	250	256	238	267	243	243	270	243	255	249	246	263	239	265	291	242
101	242	248	255	238	265	242	243	270	242	254	247	246	261	238	264	291	242
102	241	247	254	237	265	241	242	268	240	252	246	244	260	237	263	289	241
103	240	246	253	237	263	240	241	267	239	251	245	244	259	236	262	288	240
104	239	245	252	235	261	238	240	266	238	250	244	243	257	234	261	287	239
105	237	244	250	234	260	237	239	265	237	250	243	241	256	233	259	286	237
106	236	242	249	232	259	236	238	265	237	248	242	240	254	232	257	284	236
107	234	241	247	230	257	235	236	264	236	247	240	239	253	231	254	282	234
108	233	240	246	228	256	234	235	262	234	245	239	238	251	229	253	281	233
109	231	238	243	227	254	233	233	261	233	243	238	236	249	228	251	279	231
110	230	236	242	225	252	231	231	259	231	242	236	234	247	226	249	276	230
111	229	235	240	223	250	229	229	257	229	240	234	233	245	225	247	273	229
112	227	233	238	222	248	227	228	254	227	238	232	231	243	223	245	270	227
113	225	231	235	220	245	226	226	251	225	236	230	229	241	222	242	268	225
114	223	230	233	219	244	224	225	249	224	234	228	227	239	220	239	264	223
115	221	227	231	217	241	222	222	247	222	232	226	225	237	219	238	262	221
116	219	226	229	215	239	220	220	244	220	230	224	223	234	217	235	259	219
117	217	223	227	212	236	218	218	241	218	227	222	221	231	214	232	255	217
118	215	221	224	211	234	216	216	238	216	225	220	219	228	213	229	252	215
119	212	218	222	208	231	214	214	236	213	222	217	216	226	210	227	248	212
120	210	216	219	206	228	211	212	232	211	220	215	214	222	208	224	245	210
121	208	213	216	204	225	209	209	228	209	217	212	210	220	206	221	241	208
122	205	211	213	202	222	206	207	225	206	215	210	208	216	203	218	236	205
123	203	209	210	199	218	204	204	221	203	212	206	205	214	200	215	232	203
124	200	205	207	196	216	201	201	217	200	209	204	203	210	197	213	228	200
125	198	203	204	194	212	198	199	214	198	206	201	200	207	195	210	224	198

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126	194	199	201	190	209	194	196	210	195	203	198	197	203	192	206	220	194
127	192	196	197	188	205	193	193	206	191	200	195	195	199	189	203	215	192
128	189	192	193	184	200	189	189	201	188	196	191	191	196	186	199	211	189
129	186	189	190	181	196	186	186	196	185	192	187	188	192	183	197	206	186
130	182	185	186	178	192	183	183	192	182	189	184	185	188	180	193	201	182
131	179	182	182	174	188	180	179	187	178	185	181	181	184	176	189	196	179
132	176	177	178	170	183	176	176	182	174	181	176	178	180	173	185	191	176
133	172	173	174	167	179	173	173	177	170	177	172	174	176	170	182	186	172
134	168	168	170	163	174	169	169	172	167	173	168	171	172	166	178	180	168
135	164	164	166	159	169	165	166	166	163	169	163	167	168	162	174	175	164
136	159	161	161	155	165	161	161	161	160	164	159	163	164	158	170	170	159
137	156	156	157	152	161	156	157	156	156	160	155	159	160	154	166	165	156
138	151	150	152	147	156	152	153	151	152	155	150	155	156	149	163	161	151
139	147	146	148	142	152	148	149	146	148	151	146	150	152	145	158	156	147
140	142	141	142	138	147	143	145	142	144	146	142	146	148	141	154	152	142
141	138	135	137	133	142	139	140	137	139	141	138	142	143	137	149	147	138
142	134	130	131	128	137	134	135	132	134	136	133	137	137	132	144	142	134
143	130	125	126	123	133	130	130	127	129	132	129	132	133	128	138	136	130
144	125	121	121	118	128	125	125	122	124	127	124	127	127	124	133	130	125
145	120	116	115	113	122	119	120	117	118	121	120	122	122	119	127	125	120
146	116	111	111	109	117	114	115	111	113	116	114	116	117	114	122	120	116
147	111	106	106	104	112	109	110	106	108	111	110	111	111	110	117	114	111
148	106	102	101	99	107	104	106	100	103	106	105	106	105	104	112	108	106
149	102	96	97	95	101	100	101	95	98	101	100	101	100	99	108	103	102
150	97	92	92	91	96	95	96	90	94	96	94	96	95	95	102	98	97
151	93	87	87	87	91	90	91	85	89	90	89	91	89	90	98	92	93
152	88	83	83	83	85	86	87	80	84	86	84	87	85	86	93	87	88
153	83	78	79	78	80	81	82	76	80	80	79	82	80	81	89	83	83
154	78	74	74	74	76	76	78	71	75	75	74	78	75	77	84	78	78
155	73	69	70	68	71	71	73	67	70	71	69	74	70	72	78	72	73
156	68	65	66	64	67	67	68	62	65	66	65	69	66	68	74	68	68
157	62	59	61	59	62	63	63	58	61	62	61	63	61	63	68	63	62

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158	58	54	57	54	57	58	57	53	56	57	56	58	57	59	63	58	58
159	53	50	52	50	52	53	53	48	51	52	52	53	52	54	58	53	53
160	49	45	48	45	47	48	48	44	47	48	47	48	47	50	52	48	49
161	45	41	43	42	43	44	44	40	42	43	42	43	43	46	47	43	45
162	40	37	39	38	39	39	40	36	38	38	38	39	39	41	42	40	40
163	36	34	35	33	35	36	36	33	34	34	34	36	35	37	39	36	36
164	31	30	31	30	31	32	31	29	30	31	30	31	31	33	35	32	31
165	28	26	27	26	27	28	27	25	26	27	26	28	27	29	30	28	28
166	25	23	24	23	23	24	24	21	22	23	22	24	23	26	25	24	25
167	21	20	21	20	20	21	21	18	20	20	19	20	20	23	21	21	21
168	17	17	17	17	17	18	17	16	17	16	16	17	17	20	18	18	17
169	14	14	14	14	14	15	14	13	14	14	13	14	14	16	16	15	14
170	13	12	12	11	12	12	12	11	11	11	11	11	11	12	13	12	13
171	10	10	9	9	9	10	9	9	9	9	9	9	10	11	9	9	10
172	8	8	8	7	7	7	8	6	7	7	7	7	6	7	7	8	8
173	6	6	6	6	6	5	6	5	5	5	5	6	4	3	5	6	6
174	4	5	4	4	4	4	3	4	4	4	4	4	2	2	3	3	4
175	3	4	3	3	3	2	2	2	3	3	3	3	2	3	2	2	3
176	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2	1	2
177	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
178	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
179	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



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3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2021/2/26
AC Power Source	CHP-500C	N/A	2021/3/29
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2021/3/1
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Integral Sphere (2M)	2M	DYJCE120067	2021/2/26
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2021/2/26
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

***** END OF REPORT *****