

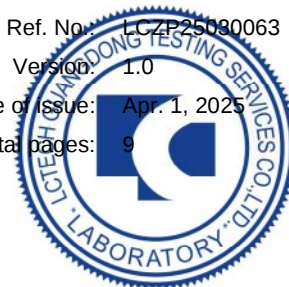


Ref. No.: LCZP25080063

Version: 1.0

Date of Issue: Apr. 1, 2025

Total pages: 9



Test report of

IES LM-79-08

Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Rendered to:

Beyond LED Technology

1939 Parker Court, Stone Mountain, GA 30087

For products:

Horizontal Refrigerated Case Luminaires

Models No.:

ZS-T8V1840T-57

Test Date: Mar. 26, 2025

Test Lab.: **LCTECH Guangdong Testing Services Co., Ltd.**

1/F., Building I, & 2, 3, 4/F., Building II, Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China

Tel: +86-760-22833366 E-mail: Service@lccert.com <http://www.lccert.com>

Test Sites: 1/F., Building I, Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China

Template No.: LC-RT-PL-051 Rev.1.4

Test Note:

Compiled by:

Pengkang Liang

Apr. 1, 2025

Reviewed by:

Lin Qiu

Apr. 1, 2025

The duplication of this report or parts of it and its use for advertising purposes is only allowed with permission of the testing laboratory. This report contains the result of the examination of the product sample submitted by the applicant. A general statement concerning the quality of the products from the series manufacture cannot be derived therefore. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the US Government.

This report contains data that are not covered by the NVLAP accreditation. Please refer section 1.2 for details.

Table of Contents

1. General	3
1.1 Product Information	3
1.2 Standards or methods	4
1.3 Equipment list	4
2. Test conducted and method	5
2.1 Ambient Condition	5
2.2 Power Supply Characteristics	5
2.3 Seasoning and Stabilization	5
2.4 Electrical Instrumentation	5
2.5 Color Measurement Method	5
2.6 Total Luminous Flux Measurement Method	5
2.7 Spatial Non-uniformity of Chromaticity	5
3. Test Result Summary	6
3.1 Electrical data	6
3.2 Photometric data	6
3.3 Color Rendering Details	6
3.4 Electrical data on 277V	6
4. Test Data	7
4.1 ANSI Chromaticity Quadrangles Diagram	7
4.2 ANSI/IES TM-30-18 Full Report	8
Appendix A Product Photo	9

1. General

1.1 Product Information

Brand Name	-
Category	Indoor
General Application	Case Lighting
Primary Use	Horizontal Refrigerated Case Luminaires
Model Number	ZS-T8V1840T-57
Rated Inputs	AC100-277V, 50/60Hz
Rated Power	40W
Rated Light output	5200lm
Declared CCT	5700K
Power Supply	ZY-TQC36-CB
LED Package, Array or Module	HL-AS-2835DW-3C-S1-08-PCT-HR3(R9), Hongli Zhihui Group Co.,Ltd. Guangzhou Branch
Dimming	Continuous Dimming
Integral Controls	No
Controls Controllability	No
Receipt Samples	1 unit
Sample Code of lab.	250311107002
Date of Receipt Samples	Mar. 11, 2025
Note	-



LCTECH



1.2 Standards or methods

The following standards are partly or totally used or referenced for test:

No.	Name
ANSI/NEMA/ ANSLG C78.377- 2017	Specifications for the Chromaticity of Solid State Lighting Products
ANSI/IES TM-30-18 ¹	IES Method for Evaluating Light Source Color Rendition
ANSI C82.77-2002	Harmonic Emission Limits—Related Power Quality Requirements for Lighting Equipment
CIE Pub. No. 13.3-1995	Method of Measuring and Specifying Color Rendering of Light Sources
CIE Pub. No. 15:2004	Colorimetry
IES LM-79-08	Electrical and Photometric Measurements of Solid-State Lighting Products

Note:

1, For reference only and not in the scope of NVLAP.

1.3 Equipment list

Instrument	ID	Model name	Cal. date	Next cal. Date
AC Power supply	LC-I-989	APW-120N	2024-12-09	2025-12-08
Power analyzer	LC-I-PL-024	WT310E	2024-12-11	2025-12-10
Multimeter	LC-I-972	Fluke	2024-06-26	2025-06-25
Photometric colorimetric electric system ²	LC-I-956	HAAS-2000	Before use	Before use
Standard lamp ³	LC-I-963	24V50W	2024-06-26	2025-06-25
Luminous Flux Lamp ⁴	LC-I-PL-043	D204	2024-11-29	2025-11-28
Wireless temperature transmitter	LC-I-PL-009	DWLR-DLR	2024-12-12	2025-12-11

Note:

2, Bandwidth of spectroradiometer is 1 nm.

3, Halogen lamp, 50W, omni-directional type, and its traceability to NIM.

4, Incandescent lamp, 80W, omni-directional type, and its traceability to NIM.

2. Test conducted and method

The luminaire was operated at least 2 hours to reach stabilization and temperature equilibrium before test.

2.1 Ambient Condition

The ambient temperature in which measurements are being taken was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$; the air flow around the sample(s) being tested did not affect the performance.

2.2 Power Supply Characteristics

The AC power supply had a sinusoidal voltage wave shape at the prescribed frequency (60 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

The voltage of AC power supply (RMS voltage) applied to the device under test was regulated to within ± 0.2 percent under load.

2.3 Seasoning and Stabilization

No seasoning was performed in accordance with IESNA LM-79-08. And before the measurement, the sample was stabilized until the light output and power variations were less than 0.5% in 30 minutes intervals (3 readings, 15 minutes apart).

2.4 Electrical Instrumentation

The calibration uncertainties of the instruments for AC voltage and current were less than 0.2 percent, and the calibration uncertainty of the AC power meter was less than 0.5 percent (95 % confidence interval, $k=2$).

2.5 Color Measurement Method

Spectral radiant flux was measured by a sphere (2 meter)-spectroradiometer system, and the color characteristics (Color rendering index, correlated color temperature, chromaticity coordinate) were calculated from these by software automatically.

2.6 Total Luminous Flux Measurement Method

Total luminous flux was measured by sphere-spectroradiometer system.

Spectral radiant flux was measured by a sphere (2 meter)-spectroradiometer system, and the total luminous flux was calculated from these by software automatically.

2.7 Spatial Non-uniformity of Chromaticity

The customer did not require this measurement.

3. Test Result Summary

3.1 Electrical data

Criteria Item	Result(Sphere)
Input Voltage & Frequency	119.96 V~60Hz
Input Current(A)	0.346
Total Power(W)	40.22
Power Factor	0.970
I-THD	23.81%
Off-state Power(W)	-

3.2 Photometric data

Criteria Item	Result(Sphere)
Total Lumens(lm)	5640.24 ¹
Luminaire Efficacy(lm/W)	140.23
Correlated Color Temperature (CCT)(K)	5765
Color Rendering Index (CRI)	83.6
R ₉	16
R _f	83
R _g	96
R _{cs,h1}	-12%
Chromaticity Coordinate (x,y)	x = 0.3267 y = 0.3373
Chromaticity Coordinate (u',v')	u' = 0.2044 v' = 0.4747
Duv	0.0007

Note:

1, Self-absorption is 1.

3.3 Color Rendering Details

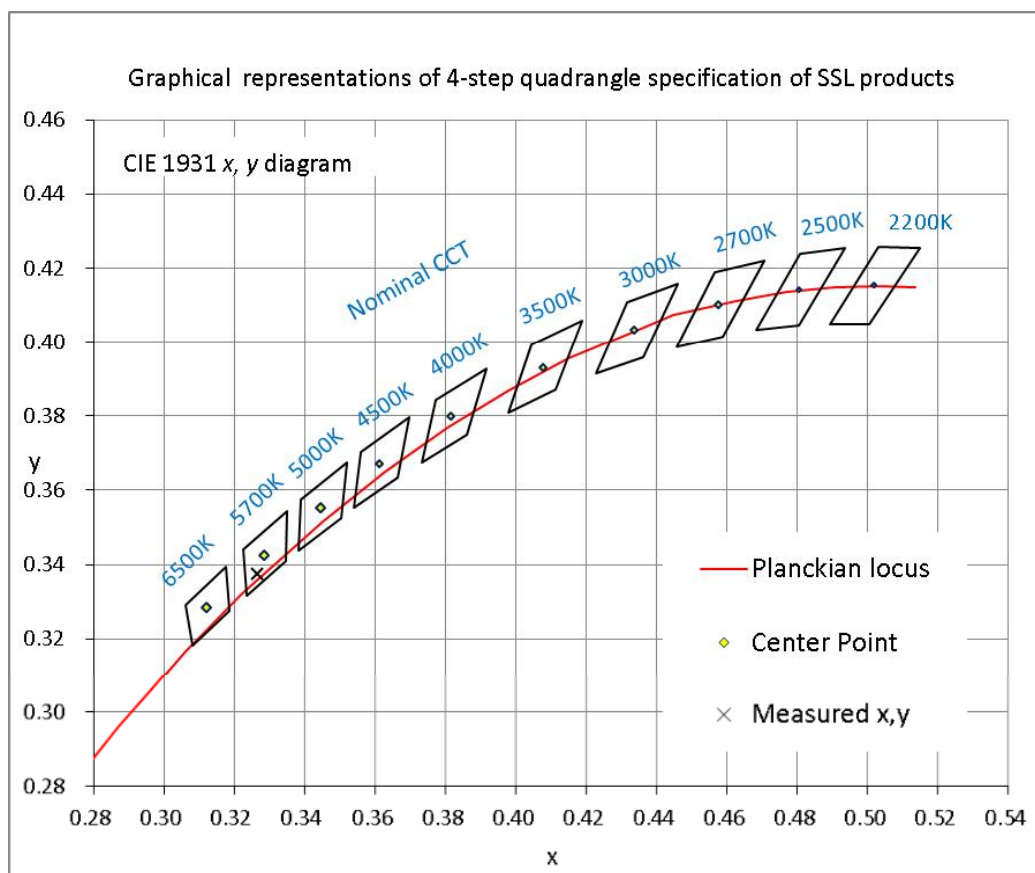
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
83	88	89	84	83	82	88	72	16	69	83	58	84	94	79

3.4 Electrical data on 277V

Criteria Item	Result(Sphere)
Input Voltage & Frequency	277.00 V~60Hz
Power Factor	0.941
I-THD	22.31%

4. Test Data

4.1 ANSI Chromaticity Quadrangles Diagram



4.2 ANSI/IES TM-30-18 Full Report

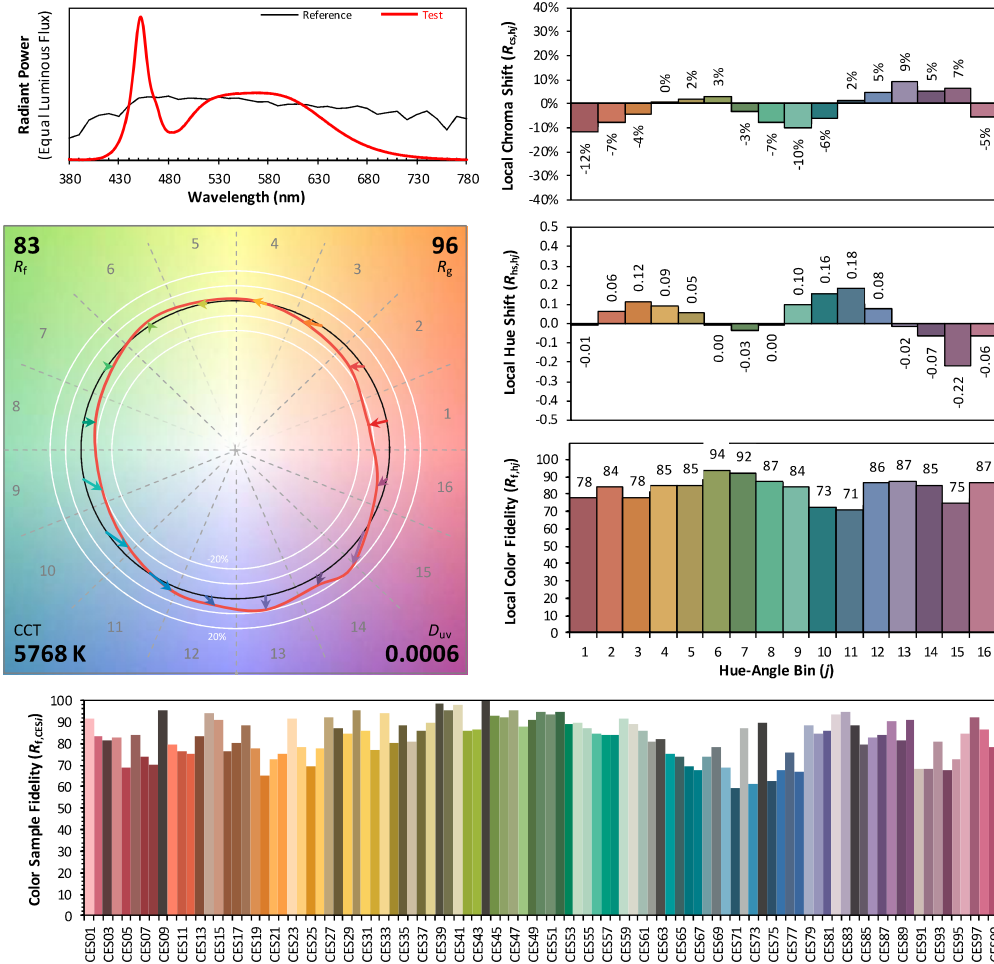
ANSI/IES TM-30-18 Color Rendition Report

Source: SPD

Manufacturer: Huizhou Zenith Technology Co Ltd

Date: 2025/4/1

Model: ZS-T8V1840T-57



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

x 0.3266
 y 0.3371
 u' 0.2044
 v' 0.4746

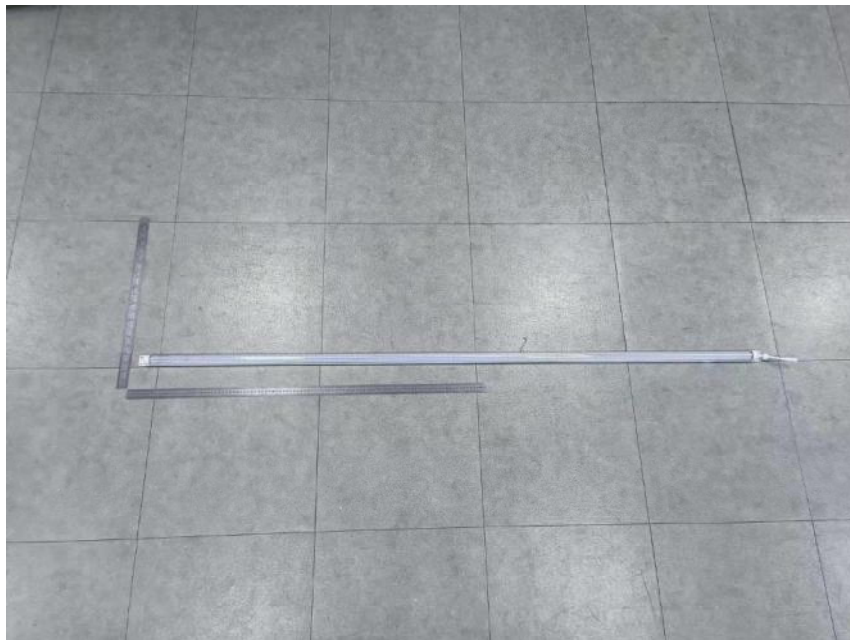
CIE 13.3-1995
(CRI)

R_a 84
 R_9 16

Note:

This is a recommended method for displaying ANSI/IES TM-30-18 information, Created with the IES TM-30-18 Calculator Version 2.00.

Appendix A Product Photo



Picture 1



Picture 2

****End of test report****