# ISTMT Test Report

For

## MIC Optoelectronic CO., LTD

2nd floor, Third Building, 97# AiNan Road, LongDong, BaoLong Street, LongGang District, Shenzhen, China

## LED Street Light

Model Name(s):
MSL-F150

Representative (Tested) Model:
MSL-F150

**Model Difference: N/A**

Prepared by:

Alan Wang

Engineer: Alan Wang
Date: 2025-05-09

Reviewed by:

Vincent Yuan

Technical Lead: Vincent Yuan
Issue Date: 2025-05-14
Revised Date: N/A

Note: 1. The results contained in this report pertain only to the tested samples.

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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

**Client Information:**

| | |
|---|---|
| Applicant Name: | MIC Optoelectronic CO., LTD |
| Brand Name: | MIC |
| Manufacturer Name: | MIC Optoelectronic CO., LTD |
| Manufacturer Address: | 2nd floor, Third Building, 97# AiNan Road, LongDong, BaoLong Street, LongGang District, Shenzhen, China |

**Product Information:**

| | |
|---|---|
| Model Number: | MSL-F150 |
| Product Type: | LED Street Light |
| Rating Input: | 100-277Vac, 50/60Hz, 150W |
| Declared CCT: | 5000K |
| Declared Light Output: | 24388 lm |
| Declared Lifetime: | 50000 hours |
| LED Manufacturer: | Bridgelux, Inc. |
| LED Model: | L150-AABB50CC00000 |
| LED Quantity: | 96 pcs |
| LED Driver Manufacturer: | MOSO |
| LED Driver Model: | CP-150M062 EN 1021500540 F.2 |

**Test Information:**

| | |
|---|---|
| Date of Receipt Samples: | 2025-05-06 |
| Quantity of Receipt Samples: | 1 pc |
| Sample Number: | 250506022-S1 |
| Test Representation: | N/A |

**Laboratory Information:**

| | |
|---|---|
| Test Laboratory: | Dongguan New Testing Centre Co., Ltd |
| Laboratory Address: | 3F, No. 1 the 1st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China |
| Laboratory Contact Name: | Neil Zhong |
| Laboratory Contact E-mail: | Neil_zhong@ntc-cert.com |

**Report Information:**

| | |
|---|---|
| Test Report Form: | ISTMT_TRF_V1.5 |
| Issued Date of Test Report: | 2025-05-14 |
| Revised Date of Test Report: | N/A |
| Test Report No.: | NTCLR25050042 |
| Remark *(If applicable)*: | N/A |

| Test Specification: | |
|---|---|
| Date of Test | 2025-05-07 |
| Test Item | 1. In-Situ Temperature Measured Test (ISTMT) |
| Reference Standard | ANSI/UL 1598 Luminaire<br>ANSI/UL 1598C Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits<br>ANSI/UL 153 Standard Portable Electric Luminaires<br>ANSI/IES LM-84:2020 Measuring Optical Radiation Maintenance of LED Lamps, Light Engines, and Luminaires |

## Test Methods:

**1. In-Situ Temperature Measurement Test (ISTMT)**

According to UL 1598 and ANSI/IES LM-84:2020, Annex A, maximum LED source operated temperature measurements were taken on one test sample per model with a thermocouple and temperature meter. The SSL sample could reach thermal equilibrium for at least 3 hours before measurements were taken. LED source temperature was measured at the point as indicated by the included diagram in accordance with manufacturers declared hot spot location. The maximum temperature was recorded for the sample. A simulated ceiling or other enclosure may be used in accordance to UL 1598 as applicable.

## In-Situ Temperature Measurement Test Results:

**Electrical Data:**

| Voltage (V) | Frequency (Hz) | Current (A) | Wattage (W) | Power Factor | Orientation | Test Time (hours) |
|---|---|---|---|---|---|---|
| 230.0 | 50 | 0.6802 | 151.76 | 0.9700 | Face Down | 3.5 |

**Test Result:**

| TC Location | LED Drive Current (mA) | Temperature (°C) | | | TM-21 Result Reported (hours) | | | Driver Lifetime (hours) |
|---|---|---|---|---|---|---|---|---|
| | | Ambient | Test Result | Corrected to 25°C | L70 | L70B10 | L90 | |
| $TMP_{LED}$ | 53.7 | 25.0 | 73.0 | 73.0 | >102000 | 164000 | 49000 | N/A |
| $TMP_{LED\ Driver}$ | N/A | 25.0 | 62.4 | 62.4 | N/A | | | 130000 |

**Note: L70B10 is reference only.**

**Test Result from TM-21:**

**L70**

***In-Situ* Inputs**

| | |
|---|---|
| Drive current for each LED package/array/module (mA): | 53.7 |
| *In-situ* case temperature ($T_c$, ºC): | 73 |
| Percentage of initial lumens to project to (e.g. for $L_{70}$, enter 70): | 70 |

**Results**

| | |
|---|---|
| Time (t) at which to estimate lumen maintenance (hours): | 50,000 |
| Lumen maintenance at time (t) (%): | 89.82% |
| Reported L70 (hours): | >102000 |

**L90**

***In-Situ* Inputs**

| | |
|---|---|
| Drive current for each LED package/array/module (mA): | 53.7 |
| *In-situ* case temperature ($T_c$, ºC): | 73 |
| Percentage of initial lumens to project to (e.g. for $L_{70}$, enter 70): | 90 |

**Results**

| | |
|---|---|
| Time (t) at which to estimate lumen maintenance (hours): | 50,000 |
| Lumen maintenance at time (t) (%): | 89.82% |
| Reported L90 (hours): | 49,000 |

## In-Situ Temperature Measurement Test Results:

**Electrical Data:**

| Voltage (V) | Frequency (Hz) | Current (A) | Wattage (W) | Power Factor | Orientation | Test Time (hours) |
|---|---|---|---|---|---|---|
| 230.0 | 50 | 0.6786 | 150.62 | 0.9650 | Face Down | 3.5 |

**Test Result:**

| TC Location | LED Drive Current (mA) | Temperature (°C) | | | TM-21 Result Reported (hours) | | | Driver Lifetime (hours) |
|---|---|---|---|---|---|---|---|---|
| | | Ambient | Test Result | Corrected to 40°C | L70 | L70B10 | L90 | |
| $TMP_{LED}$ | 53.7 | 40.0 | 80.2 | 80.2 | >102000 | 154000 | 46000 | N/A |
| $TMP_{LED\ Driver}$ | N/A | 40.0 | 69.0 | 69.0 | N/A | | | 106000 |

**Note: L70B10 is reference only.**

**Test Result from TM-21:**

**L70**

***In-Situ* Inputs**

| | |
|---|---|
| Drive current for each LED package/array/module (mA): | 53.7 |
| *In-situ* case temperature ($T_c$, ºC): | 80.2 |
| Percentage of initial lumens to project to (e.g. for $L_{70}$, enter 70): | 70 |

**Results**

| | |
|---|---|
| Time (t) at which to estimate lumen maintenance (hours): | 50,000 |
| Lumen maintenance at time (t) (%): | 89.21% |
| Reported L70 (hours): | >102000 |

**L90**

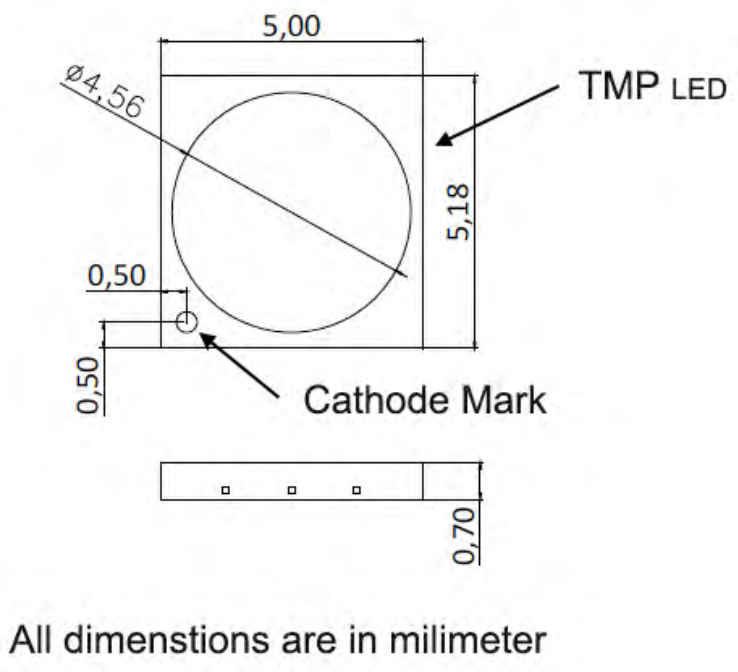
***In-Situ* Inputs**

| | |
|---|---|
| Drive current for each LED package/array/module (mA): | 53.7 |
| *In-situ* case temperature ($T_c$, ºC): | 80.2 |
| Percentage of initial lumens to project to (e.g. for $L_{70}$, enter 70): | 90 |

**Results**

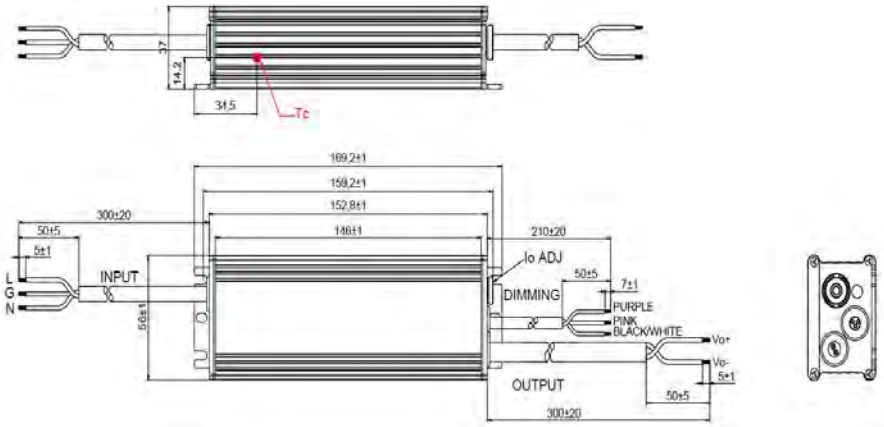
| | |
|---|---|
| Time (t) at which to estimate lumen maintenance (hours): | 50,000 |
| Lumen maintenance at time (t) (%): | 89.21% |
| Reported L90 (hours): | 46,000 |

## TMP Position in LM-80:

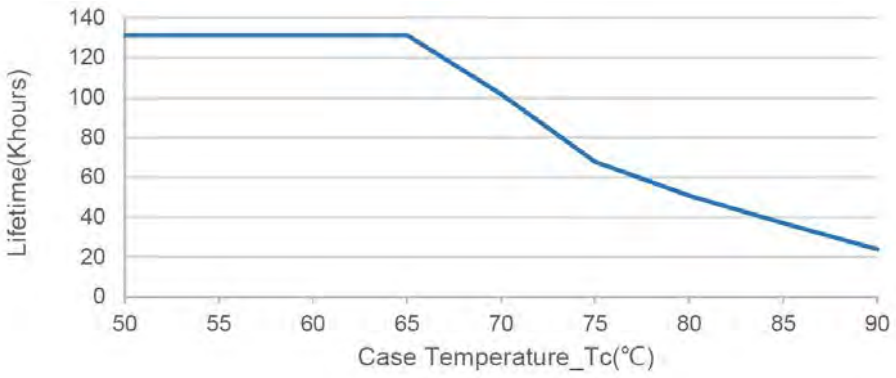



All dimenstions are in milimeter

## TMP Position in LED Driver Spec:




## Lifetime vs. Case Temperature



**Thermocouple Position on TMP:**

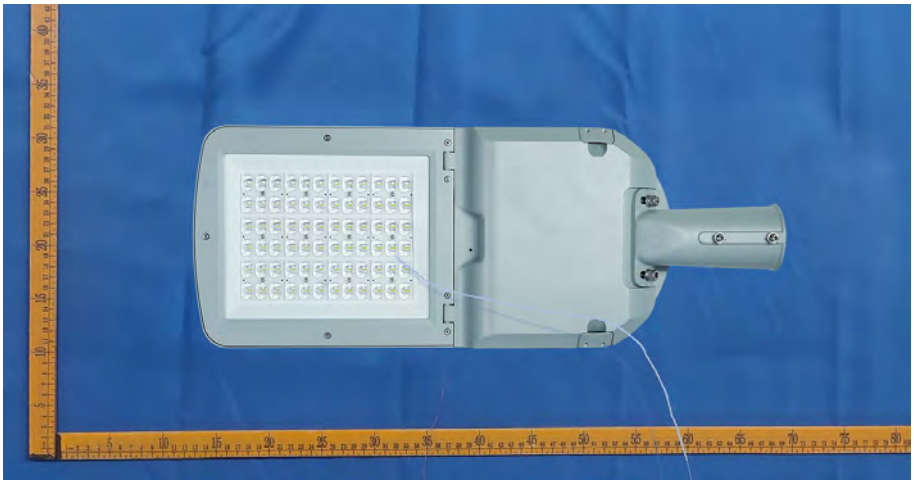
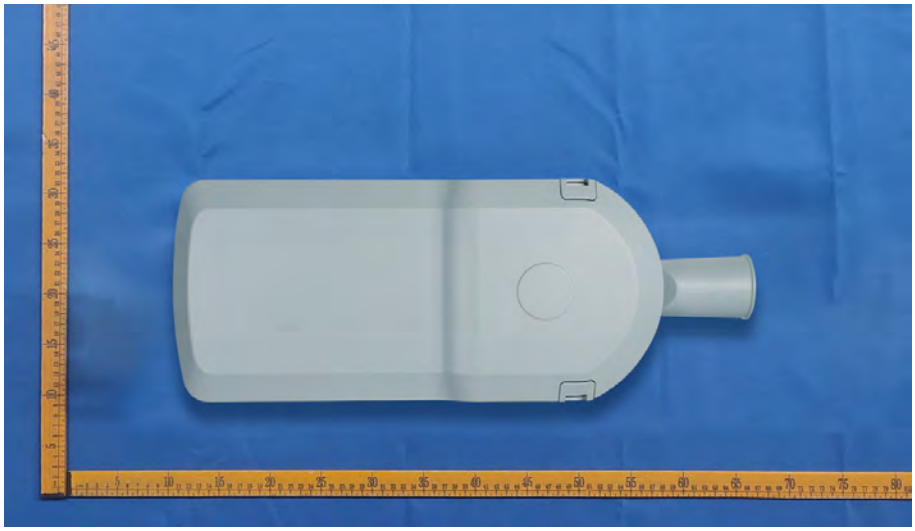


**Photo of Sample:**



**Equipment List:**

| Equipment ID | Equipment Name | Last Cal. | Due Cal. |
|---|---|---|---|
| NTC-F01-031 | Digital Power Meter | 2024-08-06 | 2025-08-05 |
| NTC-F01-020 | Temperature & Humidity Meter | 2024-10-29 | 2025-10-28 |
| NTCD-S001 | Temperature Data Logger | 2024-11-05 | 2025-11-04 |

************End of Report************