

# L156AD-4KM1

15.6inch Ultra Rugged Laptop with Intel® Alder Lake Processor



**With discrete GPU**



## KEY FEATURES

- 12th generation Intel® Processor Family – Alder Lake Processor
- 15.6" 4K Panel resolution with PCAP touch
- Optional discrete Nvidia Graphic card
- Dual battery with hot-swappable design for whole-day-work
- Anti-glare technology for sunlight readability
- Magnesium alloy enclosure with double injection for drop protection
- IP65 waterproof and dustproof
- Optional GPU Graphic Cards

## INTRODUCTION

Winmate L156 Series Rugged Laptop is a high-performance solution for professionals working in demanding environments. Powered by Intel® Alder Lake processors, it features a 15.6" FHD or optional 4K display with PCAP touch and anti-glare technology for sunlight readability. With a magnesium alloy enclosure, IP65-rated protection, and dual hot-swappable batteries, it ensures durability and all-day productivity. Optional NVIDIA and Intel GPU support makes it ideal for graphics-intensive tasks, from industrial applications to field operations.

## OVERVIEW



### Endless Expansion with Larger Screen

#### Uncompromised intelligence and comfort:

Combining the powerful Intel® 12th generation Alder Lake Processor with a crystal-clear high def. 15.6-inch and 4K display, the L156AD-M1 heavy duty laptop is built for endless expansion. The optional discrete Nvidia Graphic card offers powerful and brilliant for various on-field and industrial applications.

#### Sunlight readable:

The display is designed to thrive beneath daylight conditions with optical bonding and anti-glare technologies for an outdoor viewable.

### Durability That Survives the Elements

#### Tough exterior:

Built with a magnesium alloy enclosure with double injection for drop protection, the Winmate laptop has passed the drop test from a meter high and impact resistance with performance assurance according to the US Defence Standard MIL-STD-810H. Also, IP65 ingress protection ensures protection against dust and moisture.





### Connect Wherever

#### Boost field productivity:

Easily dock, connect, and share with any device using various peripherals and docking options. The heavy duty laptop powered by the Intel® Alder Lake Processor enhances the work performance for rugged computing solutions.

#### Collaborate from anywhere:

Limit downtime with WLAN, BT support, GPS / GLONASS, and 5G LTE(optional) connectivity options for faster data transmission rates, lower latency, and increased capacity even in remote environments.



### Optional GPU Graphic Cards

Winmate's Rugged Laptop L156 Series offers optional graphic cards from industry leaders NVIDIA and Intel, such as the NVIDIA T1000, A2000, and Intel A370M. These cards excel in driving advanced laptop workstations for various sectors. They ensure optimal connectivity and superior performance, catering to diverse professional needs.

## SPECIFICATIONS

### Display

|                       |  |                         |                                  |
|-----------------------|--|-------------------------|----------------------------------|
| <b>Bonding</b>        | Optical Bonding for Sunlight Viewability | <b>Type</b>             | Projected Capacitive Multi Touch |
| <b>Resolution</b>     | 3840x2160                                | <b>Size</b>             | 15.6 inches                      |
| <b>Contrast Ratio</b> | 800:1                                    | <b>Panel Brightness</b> | 400.0 nits                       |
| <b>View Angles</b>    | 85,85,85,85                              |                         |                                  |

### System Specification

|                          |   |                            |  |
|--------------------------|---|----------------------------|--|
| <b>Processor</b>         | Intel Core i7-12700H (up to 4.7GHz)<br>Intel Core i9 Processor (Optional)   | <b>Memory</b>              | 8+8GB DDR5 SDRAM<br>16+16GB DDR5 SDRAM (Optional)<br>32+32GB DDR5 SDRAM (Optional) |
| <b>Storage</b>           | 256GB M.2 NVMe SSD<br>512GB M.2 NVMe SSD (Optional)<br>1TB M.2 NVMe SSD (Optional)<br>2TB M.2 NVMe SSD (Optional)<br>2nd storage available with up to 2TB M.2 NVMe SSD (Optional) | <b>Security</b>            | Trusted Platform Module (TPM) 2.0<br>Kensington Lock                               |
| <b>Operating System</b>  | Windows 11 IoT Enterprise LTSC (64 bit)<br>Windows 10 IoT Enterprise LTSC (64 bit) (Optional)   | <b>WLAN</b>                | Support  |
| <b>BT</b>                | Support   | <b>WWAN</b>                | 4G LTE (Optional)  |
| <b>GNSS</b>              | GPS, GLONASS  | <b>RFID</b>                | HF RFID reader 13.56 MHz (Optional)  |
| <b>Smart Card Reader</b> | Smart Card Reader   | <b>Fingerprint Scanner</b> | Fingerprint scanner (Optional)   |
| <b>Discrete GPU</b>      | M1: T1000 MXM Graphic card (Optional)<br>M2: A2000 MXM Graphic card (Optional)<br>M3: A370 MXM Graphic card (Optional)  |                            |  |

### Camera

|                     |                  |
|---------------------|------------------|
| <b>Front Camera</b> | 2MP front camera |
|---------------------|------------------|

### Mechanical

|                       |                       |               |       |
|-----------------------|-----------------------|---------------|-------|
| <b>Dimension</b>      | 387.6 x 256 x 38.8 mm | <b>Weight</b> | 2.8kg |
| <b>Cooling System</b> | Fan Design            |               |       |

### IO Ports

|                     |  |                      |  |
|---------------------|--|----------------------|--|
| <b>USB Port</b>     | 1 x USB 3.0 (Type C with ALT, PD function)<br>3 x USB 3.0 (Type A) | <b>Serial Port</b>   | 1 x DB9 (RS232 / RS422 / RS485, software switchable)   |
| <b>SD Card Slot</b> | 1 x Micro SDXC Slot  | <b>SIM Card Slot</b> | 1 x Nano SIM card slot   |
| <b>Video</b>        | 1 x HDMI 4K Output (Optional)                                      | <b>Audio</b>         | 1 x Audio combo 3.5mm audio combo jack<br>Dual Digital Mic With Noise Cancellation<br>Dual Speaker |
| <b>LAN</b>          | 2 x RJ45-10/100/1000 GigaLAN port                                  | <b>Indicator</b>     | 4x LED Indicator for Power, Drive, Battery1, Battery2  |

### Environment

|                            |                                       |                              |  |
|----------------------------|---------------------------------------|------------------------------|--|
| <b>Operating Humidity</b>  | 10% to 90% RH, non-condensing         | <b>Operating Temperature</b> | -20°C to 60°C  |
| <b>Storage Temperature</b> | -30°C to 70°C                         | <b>Shock</b>                 | MIL-STD-810H Method 516.8 Procedure I  |
| <b>Vibration</b>           | MIL-STD-810H Method 514.8 Procedure I | <b>IP rating</b>             | IP65   |
| <b>Drop</b>                | MIL-STD-810H Method 516.8, 3 ft       | <b>EMC</b>                   | MIL-STD-461G CE101, CE102, RE101, RE102, CS118 (Default)<br>MIL-STD-461G CS101, CS114, CS115, CS116, RS101, RS103 (Optional) |

### Certification

|                      |         |
|----------------------|---------|
| <b>Certification</b> | CE, FCC |
|----------------------|---------|

### Security Function

|                         |                             |                        |                         |
|-------------------------|-----------------------------|------------------------|-------------------------|
| <b>SOTI MobiControl</b> | SOTI MobiControl Compliance | <b>Kensington Lock</b> | Kensington Lock Support |
|-------------------------|-----------------------------|------------------------|-------------------------|

### Control

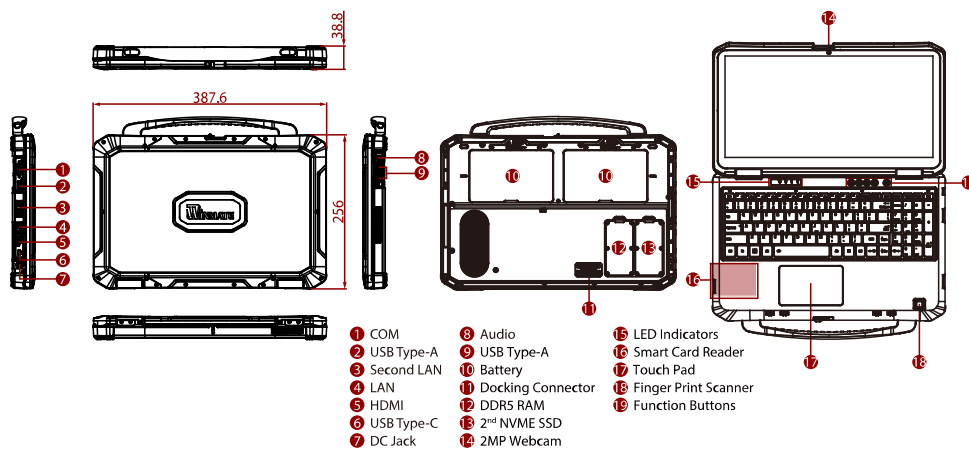
|               |  |
|---------------|--|
| <b>Button</b> | 1 x Power,<br>4 x Programmable Function Keys |
|---------------|--|

### Power

|                     |  |                               |                                  |
|---------------------|--|-------------------------------|----------------------------------|
| <b>Battery</b>      | Hotswappable 2 x 11.55V typ. 3220 mAh Lilon Battery (3S1P) | <b>Battery Operating Time</b> | Standard. Battery: 11 hours      |
| <b>Power Rating</b> | 19V DC   | <b>Adapter</b>                | 100-240V, 50-60Hz, 230W / 20V DC |

| <b>Accessory</b> |  |                           |  |
|------------------|--|---------------------------|--|
| <b>Accessory</b> | Adapter and Power Cord<br>Standard Battery | <b>Optional Accessory</b> | Spare Battery (Optional)<br>Battery Charger (Optional)<br>Vehicle Charger (Optional) |

## DIMENSIONS UNIT:MM



## NOTE

1. This is a simplified drawing and some components are not marked in detail.
2. Please contact our sales representative if you need further product information.
3. All specifications are subject to change without prior notice.
4. The product shown in this datasheet is a standard model. For diagrams that contain customized or optional I/O, please contact the Winmate Sales Team for more information.