

40 Watt — LT40W Series VER A0

CONSTANT CURRENT WITH TRIAC/ELV DIMMABLE LED DRIVER

High-Performance TRIAC dimmable LED driver

US & CN, LED Driver Class 2

LT series driver is a high-performance TRIAC dimmable LED driver that provides smooth, continuous <10% dimming for virtually any LED fixture. It is the most versatile LED driver offered today due to its compatibility with a wide variety of LED arrays, for almost all of trailing edge & leading edge AC dimmer.

Key Features

- Drive Mode: LT40W230 series
- Technology: Active PFC 1-Stage Switch Mode.
- Input Voltage: 220 to 277 VAC, 50/60Hz, no dimmer
230 VAC, With 230V AC Dimmer
- Output Power: 40 Watt Max.
- AC Dimmer: Trailing Edge & Leading Edge AC Dimmer
- Dimming Range: Smooth & Continuous Dimming from 10% to 100%.
- Efficiency: Up to 87%.
- Warranty: 5 years.

Special Features

- Continuous dimming from 10% to 100%.
- Triac or phase cut dimming.
- Safety isolation between primary and secondary.
- A rated lifetime of 50,000 hours @ Tc = 80°C.
- Safety: UL8750, UL1310 Class 2, CSA22.2.
- EMC: FCC Part 15 Class B.
- Inrush Current Limiting Circuitry: AC Power Line: line to line 2 kV, eliminates circuit breaker tripping, switch arcing and relay failure.
- Plastic shell, Used with silicone potting.
- Meet the RoHs directive.
- IP65, NEMA4 compliant for Dry, Damp location.
- 100% performance tested with CHROMA 8000 system at YG factory.
- 100% burned in with program-control test system at YG factory, at 50 degrees ambient temperature.



Enclosure



| Size | Unit | Inch | Millimeter |
|-------------|------|------|------------|
| Case Length | | 3.78 | 96.00 |
| Case Width | | 2.80 | 71.00 |
| Case Height | | 1.26 | 32.00 |

40W Triac Dimming Part List

| No. | Part Number | Input Voltage (with dimmer) | US Class 2 | CN Class 2 | Output Voltage Range | Output Constant Current Range | Current Accuracy | Power Factor | Output Power | Max. Eff. |
|-----|--------------------|-----------------------------|------------|------------|----------------------|-------------------------------|------------------|--------------|--------------|-----------|
| 1 | LT40W230-114-C0350 | 220-230V | No | No | 75~114Vdc | 35-350mA | ±5% | 0.90 | 40W | 87% |
| 2 | LT40W230-100-C0400 | 220-230V | No | No | 66~100Vdc | 40-400mA | ±5% | 0.90 | 40W | 87% |
| 3 | LT40W230-89-C0450 | 220-230V | No | No | 58~89Vdc | 45-450mA | ±5% | 0.90 | 40W | 87% |
| 4 | LT40W230-72-C0550 | 220-230V | No | No | 48~72Vdc | 55-550mA | ±5% | 0.90 | 40W | 87% |
| 5 | LT40W230-54-C0700 | 220-230V | Yes | Yes | 36~54Vdc | 70-700mA | ±5% | 0.90 | 40W | 86% |
| 6 | LT40W230-48-C0830 | 220-230V | Yes | Yes | 32~48Vdc | 80-830mA | ±5% | 0.90 | 40W | 86% |
| 7 | LT40W230-36-C1100 | 220-230V | Yes | Yes | 24~36Vdc | 110-1100mA | ±5% | 0.90 | 40W | 86% |
| 8 | LT40W230-30-C1300 | 220-230V | Yes | Yes | 20~30Vdc | 130-1300mA | ±5% | 0.90 | 40W | 85% |
| 9 | LT40W230-24-C1670 | 220-230V | Yes | Yes | 16~24Vdc | 160-1670mA | ±5% | 0.90 | 40W | 85% |

40W Constant Current Part List

| No. | Part Number | Input Voltage (no dimmer) | US Class 2 | CN Class 2 | Output Voltage Range | Output Constant Current | Current Accuracy | Power Factor | Output Power | Max. Eff. |
|-----|--------------------|---------------------------|------------|------------|----------------------|-------------------------|------------------|--------------|--------------|-----------|
| 1 | LT40W230-114-C0350 | 220-277V | No | No | 75~114Vdc | 350mA | ±5% | 0.90 | 40W | 88% |
| 2 | LT40W230-100-C0400 | 220-277V | No | No | 66~100Vdc | 400mA | ±5% | 0.90 | 40W | 88% |
| 3 | LT40W230-89-C0450 | 220-277V | No | No | 58~89Vdc | 450mA | ±5% | 0.90 | 40W | 88% |
| 4 | LT40W230-72-C0550 | 220-277V | No | No | 48~72Vdc | 550mA | ±5% | 0.90 | 40W | 88% |
| 5 | LT40W230-54-C0700 | 220-277V | Yes | Yes | 36~54Vdc | 700mA | ±5% | 0.90 | 40W | 87% |
| 6 | LT40W230-48-C0830 | 220-277V | Yes | Yes | 32~48Vdc | 830mA | ±5% | 0.90 | 40W | 87% |
| 7 | LT40W230-36-C1100 | 220-277V | Yes | Yes | 24~36Vdc | 1100mA | ±5% | 0.90 | 40W | 87% |
| 8 | LT40W230-30-C1300 | 220-277V | Yes | Yes | 20~30Vdc | 1300mA | ±5% | 0.90 | 40W | 86% |
| 9 | LT40W230-24-C1670 | 220-277V | Yes | Yes | 16~24Vdc | 1670mA | ±5% | 0.90 | 40W | 86% |

Input Specifications

| Parameter | Min. | Typ. | Max. | Notes / Conditions |
|-------------------------|---------|----------|-------------|--|
| Input Voltage | 220 Vac | --- | 277 Vac | 120, 230, 277 Vac Nominal Values. |
| Input Frequency | 47 Hz | 50/60 Hz | 63 Hz | 50/60 Hz Nominal. |
| Input AC Current | --- | --- | 0.24 A | Measured at 230 Vac / 50Hz Input, Output Full Load. |
| | --- | --- | 0.23 A | Measured at 277 Vac / 60Hz Input, Output Full Load. |
| Inrush Current (Peak) | --- | 25 A | 35 A | Measured at 277 Vac / 60Hz Input, Output Full Load. |
| Leakage Current | --- | --- | 700 μ A | Measured at 277 Vac / 60Hz Input, Output Full Load. |
| THD | --- | --- | 20% | Measured at 220, 230 Vac Input, \geq 60% Load. 277 Vac Input, \geq 80% Load. |
| Power Factor (PF) | 0.90 | --- | --- | |

Output Specifications

| Parameter | Min. | Typ. | Max. | Notes / Conditions |
|-----------------------------|------|-------|--------|--|
| DC Output Voltage | 16V | --- | 114V | Measured at 220, 230, 277 Vac Input. The voltage is DC+ to DC-. |
| Output Power | --- | --- | 40W | Measured at 220, 230, 277 Vac Input. |
| Flickering Index (Ipk-pk) | --- | --- | 30% | 20MHz BW, Full load output in parallel with 0.1 μ F & 10 μ F CAP. Flickering Index is defined as $[(I_{max}-I_{min})/(I_{max}+I_{min})] * 100\%$. |
| Line Regulation | -5% | --- | +5% | Maximum over entire range of input voltage / output loads (any combination), and temperature range. |
| Load Regulation | -5% | --- | +5% | |
| Turn-on Time | --- | 500ms | 1000ms | From VAC turn-on until output current reaches 10% of nominal value. Output Full Load. |
| Turn-off Delay | --- | --- | 1000ms | LED's not lit, No die glow. |
| Output Overshoot | -5% | --- | +10% | Measured at 220, 230, 277 Vac Input, When power on or off. |

Protection Specifications

| Parameter | Min. | Typ. | Max. | Notes / Conditions |
|------------------------------|------|------|------|---|
| Output Over Voltage (OVP) | --- | --- | 136V | No Damage. Auto recovery when the leads are open. |
| Output Short Circuit (SCP) | --- | --- | --- | No Damage. Auto recovery after short is removed. |
| | | | | |

Dimming Specifications



Excellent LED Drivers

Sino-US joint venture

| Items | Parameter | Min. | Typ. | Max. | Notes / Conditions |
|-------------------|----------------------|------|----------------|---------|--|
| Phase cut Dimming | Turn-on Time | --- | 1000 ms | 3000 ms | At 10% dim level. This time is AC input to the DC 10% output current. Less than 1000ms, for most dimmer. |
| | Flickering Index | --- | --- | 30% | Flickering Index is defined as $[(I_{max}-I_{min})/(I_{max}+I_{min})] * 100\%$. |
| | Output Current Range | 10% | --- | 100% | CCR output. |
| | Shimmer | --- | --- | 7% | Long Term Current Stability (Average can't vary by more than X% over 10s period). |
| | Dimming Curve Type | | Similar to Log | | Dim curve between max/min. |
| | Acoustic Noise | --- | --- | 22 dB | Not to exceed at 1 ft at any dim level. |

General Specifications

| Parameter | Min. | Typ. | Max. | Notes / Conditions |
|-----------|---------------|------|------|--|
| Cooling | Convection | | | |
| MTBF | 560,000 hours | | | Measured at 230 Vac input, 100% Load and Tc=80° C (MIL-HDBK-217F). |
| Life Time | 50,000 hours | | | |

Environmental Specifications

| Parameter | Min. | Typ. | Max. | Notes / Conditions |
|--|--------|------|--------|---|
| Case Temperature (T _c) | -30 °C | --- | +90 °C | Measured at location specified on case. |
| Operating Temperature (T _a) | -30 °C | --- | +55 °C | This is a reference range. T _c controls temperature range. |
| Storage Temperature (T _s) | -40 °C | | +90 °C | Non operating temperature range. |
| Operating Humidity | --- | --- | 95% RH | Relative Humidity. Non-condensing. |
| Vibration | 5 Hz | --- | 55 Hz | 1G, 10 minutes / 1 cycle, period 30 minutes, each along X, Y, Z axis. |

Safety Compliance

| Safety Category | Standards / Notes |
|----------------------|--|
| UL / cUL | UL8750, UL1310 Class 2, CSA22.2. |
| Withstand Voltage | Input to Output: 2000 Vac. |
| Isolation Resistance | Input to Output: >10MΩ, 500Vdc @ 25°C, 70% RH. |

EMC Compliance

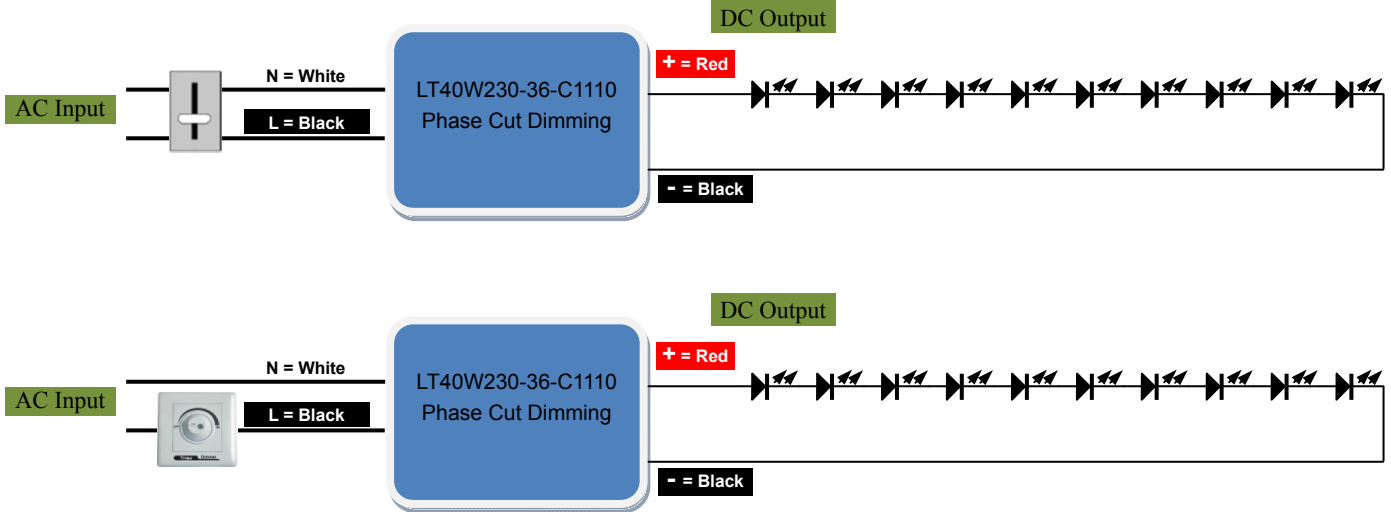
| EMI Category | Standards |
|-------------------------|--|
| FCC | FCC 47CFR Part 15 Class B, ANSI C63.4: 2009. |
| EMS Category | Notes |
| IEEE Std C62.41.2™-2002 | Surge Immunity Test: ANSI C62.41 0.5 μs 100 kHz Ring, 2kV/0.2kA, L-N, L-G, LN-G (10 strikes) 1.2/50μs 8/20μs Combination, 2kV/0.5kA, L-N, L-G, LN-G (10 strikes) |

Note: the above test data are in the condition of 25 C ambient temperature, except for the marked temperature.

Typical Applications

LED Forward voltage: $V_F = 3.0V \sim 3.5V$

■. Driver Phase Cut Dimming

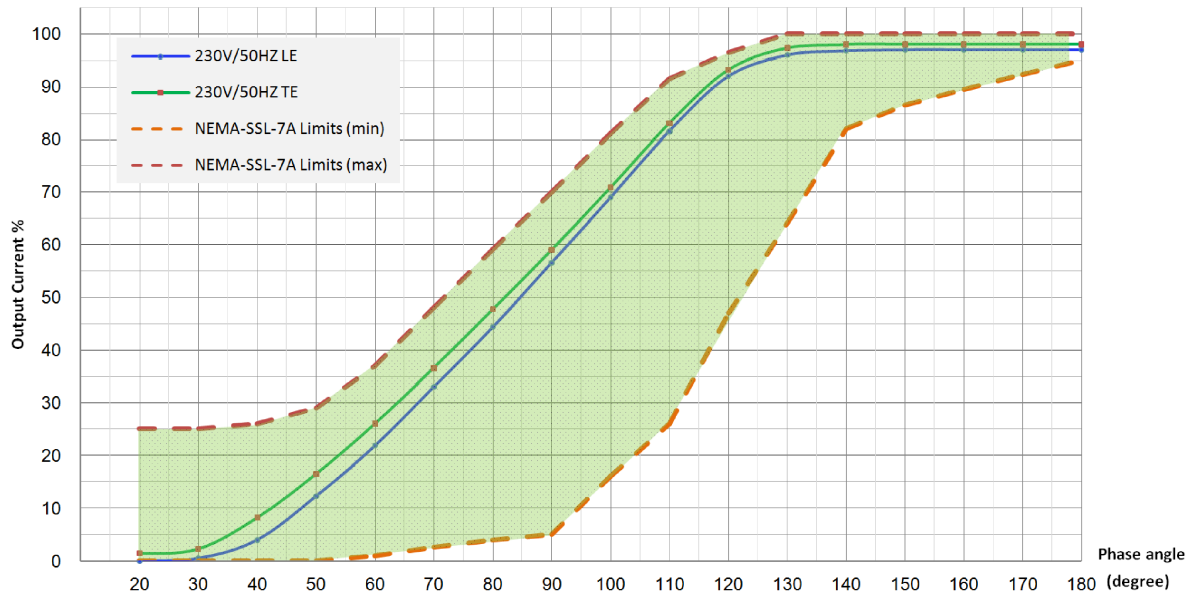


■. About Phase cut dimmer

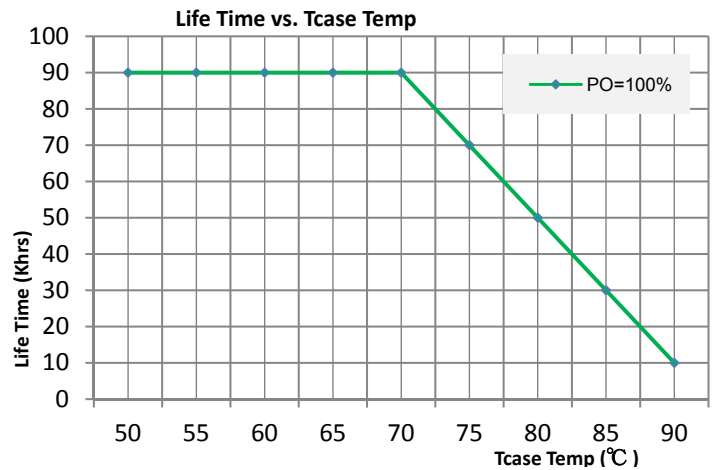
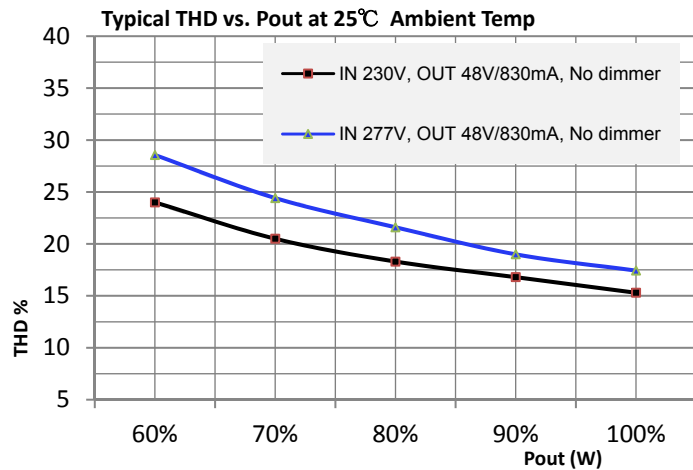
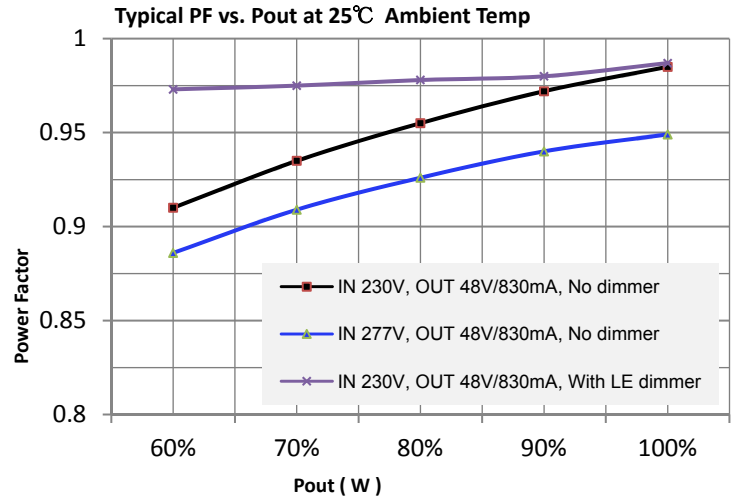
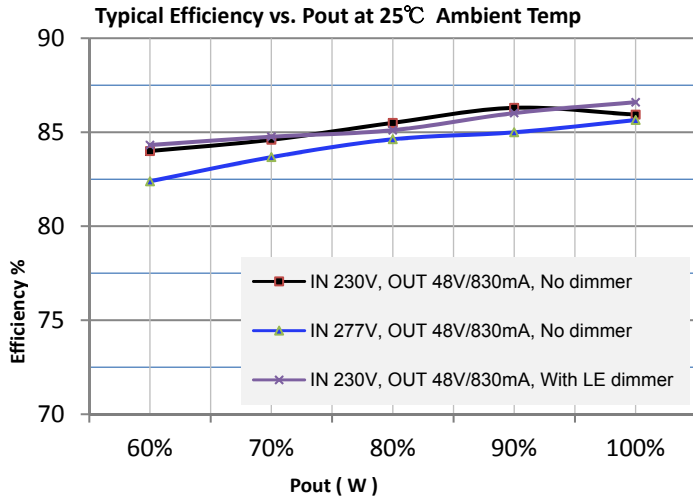
| | | | | |
|--------------|---|--|-------------------------|---|
| ELV dimmer | <ul style="list-style-type: none"> ▶ Electronic Low Voltage dimmer. ▶ Trailing Edge phase dimmer. ▶ Reverse phase control dimming. | | Reverse phase be cut | <ul style="list-style-type: none"> ▶ high stability. ▶ low noise. ▶ highest cost. |
| TRIAC dimmer | <ul style="list-style-type: none"> ▶ Incandescent phase dimmer. ▶ Leading Edge phase dimmer. ▶ SCR phase dimmer. ▶ Forward phase control dimming. | | Forward phase be cut | <ul style="list-style-type: none"> ▶ little worse stable. ▶ a little noise. ▶ lowest cost. |

Dimming Curve

Typical Dimming vs. Turn-on Phase angle of AC Input at 25°C Ambient Temp



Characteristic Curve



Installation

Plastic shell.

This product has two $\Phi 3.6$ mm mounting holes.

AC input for connection the two core ANSI/UL1015/AWG18 temperature 105 °C core copper wire connection.

Cable Length: 150mm, stripping on the tin: 10mm.

Where: L — Black wire, N — White wire.

DC output for connection the two core ANSI/UL1569/AWG18 temperature 105 °C core copper wire.

Cable Length: 150mm, stripping on the tin: 10mm.

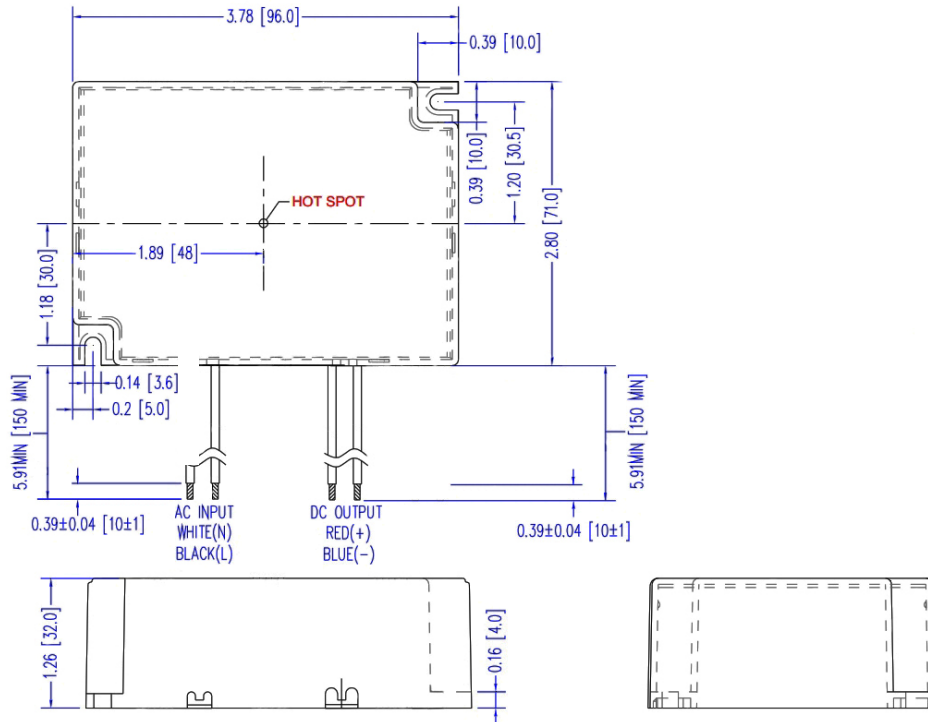
Where: DC+ — Red, DC- — Black.

Order ID

P/N : LT40W230-36-C1110

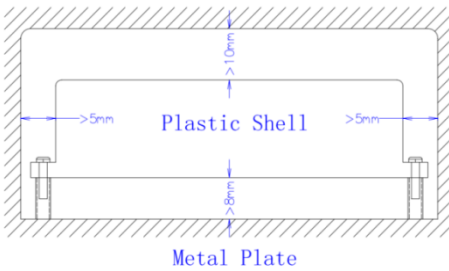
Description: 40W, 36Vdc voltage max, constant current 1110mA, phase cut dimming mode.

Product Size

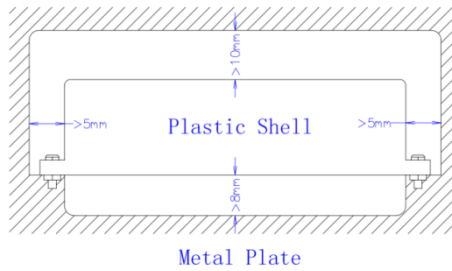


Application note

Picture 1



Picture 2



In Picture 1 and Picture 2, EMC has the best.

Note :

- The independent LED drive conforms to the EMC standard. But it is not guaranteed to be qualified, when the drive is mounted in the LED lamp.
- Please forgive us for any discrepancy due to the update of the specifications or the upgrade of the product. If you need the latest information, please contact our marketing department.