# LTECH

# LED Intelligent CT Driver (constant voltage)

- Dimming interface: 0-10V(1-10V/10V PWM/RX), Push DIM/CCT
- 0-10V DIM and color temperature adjusting driver, 2 independently SELV constant voltage output channels.
- Constant power design, adjust different color temperature to keep the same brightness.
- Dimming range from 0-100%, LED start at 0.1% possible.
- With soft-on and fade in function, visual more comfortable.
- 0~100% flicker-free, High frequency exemption level.
- Color temperature adjusting range: 2700-6500K
- Automatic recognition of 0-10V, 1-10V input signal.
- Ultra-low consumption of 0-10V ports: < 0.05mA.
- Innovative thermal management technology, intelligent power life protection.
- Over-heat / Over voltage / Over load / Short circuit protection, recover automatically.
- Fully-protected plastic housing with design of dismountable end cover.
- Compliant with Safety Extra Low Voltage standard.
- Suitable for indoor Ⅰ/Ⅱ/Ⅲ type lamps application.
- Up to 50000-hour life time.
- 5 years warranty (Rubycon capacitor).

**Flicker-free**
IEEE 1789
High frequency exemption level

**Dimmable:**
0.1%-100%
Tunable White

**5 in 1 DIM & CT adjustment**
0-10V
1-10V
10V PWM
RX
Push

Ultra-low consumption of 0-10V ports: < 0.05mA.

CCC    CB    TÜV SÜD    SELV    CE    RoHS

0-10V PUSH | PWM Digital Dimming | Over-heat Protection | V Over voltage protection | Over Load Protection | Constant Power Design | Short Circuit Protection

## Specification

| Model | | LM-75-12-G2A2 | | LM-75-24-G2A2 | | LM-100-24-G2A2 |
|---|---|---|---|---|---|---|
| **OUTPUT** | Output Voltage | 12Vdc | | 24Vdc | | |
| | Output Voltage Range | 12Vdc ±0.5Vdc | | 24Vdc ±0.5Vdc | | |
| | Output Current | Max. 6.25A | | Max. 3.125A | | Max. 4.17A |
| | Output Power | Max. 75W | | | | Max. 100W |
| | Output Power Range | 0~75W | | | | 0~100W |
| | Strobe Level | High frequency exemption level. | | | | |
| | Dimming Range | 0~100%, dimming depth: Max. 0.1% | | | | |
| | Overload Power Limitation | ≥102% | | | | |
| | Ripple & Noise | ≤200mV | | ≤300mV | | |
| | PWM Frequency | 3600Hz | | | | |
| **INPUT** | Dimming Interface | 0-10V(1-10V/10V PWM/RX) DIM/CCT, Push DIM/CCT | | | | |
| | Input Voltage | 220-240Vac | | | | |
| | Frequency | 50/60Hz | | | | |
| | Input Current | Max. 0.4A/230Vac | | | | Max. 0.5A/230Vac |
| | Power Factor | PF>0.97/230Vac, at full load | | | | PF>0.98/230Vac, at full load |
| | THD | ≤14% at 230Vac, at full load | | | | ≤12% at 230Vac, at full load |
| | Efficiency (typ.) | 91% | | 92% | | 93% |
| | Inrush Current(typ.) | Cold start 30A at 230Vac (twidth=1000μs measured at 50% Ipeak) | | | | Cold start 45.2A at 230Vac (twidth=372μs measured at 50% Ipeak) |
| | Control surge capability | L-N:2KV | | | | |
| | Leakage Current | Max. 0.5mA | | | | |
| **ENVIRONMENT** | Working Temperature | ta: -20°C ~ 50°C    tc: 80°C | | | | |
| | Working Humidity | 20 ~ 95%RH, non-condensing | | | | |
| | Storage Temp., Humidity | -40°C ~ 80°C, 10~95%RH | | | | |
| | Temp. Coefficient | ±0.03%/°C (0-50°C) | | | | |
| | Vibration | 10~500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes. | | | | |
| **PROTECTION** | Over-heat Protection | Intelligently adjusting or turning off the output current if the PCB temperature ≥110°C, auto recovers. | | | | |
| | Over Voltage Protection | Shut down the output when non-load voltage ≥13V, re-power on to recover after fault condition is removed. | | Shut down the output when non-load voltage≥26V, re-power on to recover after fault condition is removed. | | |
| | Over Load Protection | Shut down the output when current load≥102%, auto recovers. | | | | |
| | Short Circuit Protection | Enter hiccup mode if short circuit occurs, auto recovers. | | | | |
| **SAFETY & EMC** | Withstand Voltage | I/P-O/P: 3750Vac | | | | |
| | Isolation Resistance | I/P-O/P: 100MΩ/500VDC/25°C/70%RH | | | | |
| | Safety Standards | IEC/EN61347-1, IEC/EN61347-2-13 | | | | |
| | EMC Emission | EN55015, EN61000-3-2 Class C, IEC61000-3-3 | | | | |
| | EMC Immunity | EN61000-4-2,3,4,5,6,8,11  EN61547 | | | | |
| | Strobe Test Standard | IEEE 1789 | | | | |
| **OTHERS** | Dimension | 293×43×30mm(L×W×H) | | | | |
| | Packing | 296×44×33mm(L×W×H) | | | | |
| | Weight(G.W.) | 300g±10g | | | | |

✳ The driver is suitable for connecting resistor current-limiting LED fixture (e.g. LED strip). The inrush current will be dozens of times increased if connecting built-in constant current IC current-limiting LED fixtures, the driver will activate the overloaded protection (hiccups flickering). When you order, please remark controlling the constant current LED fixture (e.g. MR16 lamp, underground light, LED wall washer, constant current LED strip, etc.), then we can prepare the special programs.

## Dimensions

Unit: mm

293
43
30

253
35
240

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# LTECH
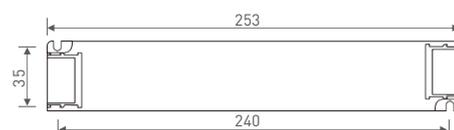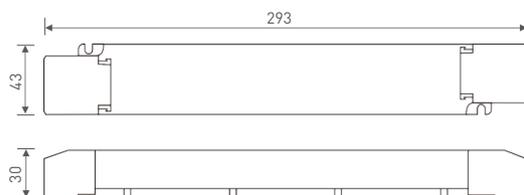
## Wiring Diagram

**0-10V Connection**

1. Brightness adjustment.
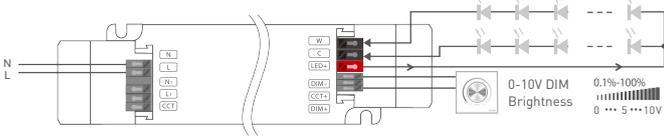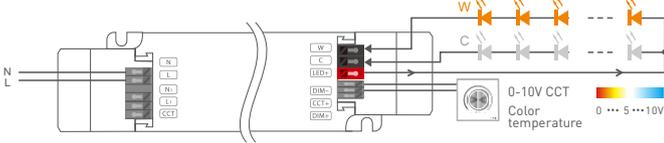


0-10V DIM
Brightness
0.1%-100%
0 ··· 5 ···10V

2. Color temperature adjustment.



0-10V CCT
Color
temperature
0 ··· 5 ···10V

3. Brightness and color temperature adjustment respective.



0-10V CCT
Color
temperature
0 ··· 5 ···10V

0-10V DIM
Brightness
0.1%-100%
0 ··· 5 ···10V

4. Brightness and color temperature adjustment simultaneous.
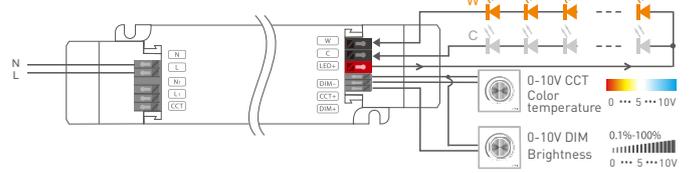


0-10V CCT
0-10V DIM
0.1%-100%
0 ··· 5 ···10V
Brightness and color temperature
adjustment simultaneous.

**Push DIM/CCT Connection**

1. Brightness adjustment.
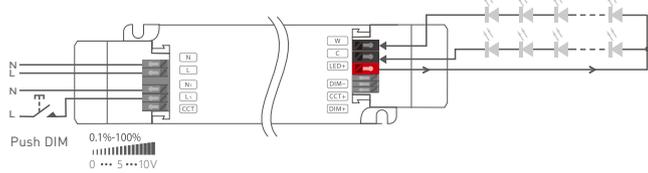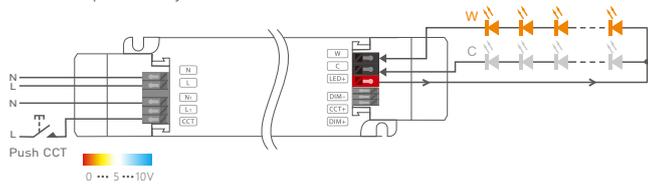


Push DIM
0.1%-100%
0 ··· 5 ···10V

3. Brightness and color temperature adjustment respective.



Push DIM
Push CCT
0.1%-100%
0 ··· 5 ···10V
0 ··· 5 ···10V

2. Color temperature adjustment.



Push CCT
0 ··· 5 ···10V

4. Brightness and color temperature adjustment simultaneous.



Push DIM
Push CCT
Short press to turn off
the driver, then long press
the button, the direction
of CT is changed.
0.1%-100%
0 ··· 5 ···10V

Short press and long
press the button again,
the direction of CT
is changed again.
0.1%-100%
0 ··· 5 ···10V

0.1%-100%
0 ··· 5 ···10V
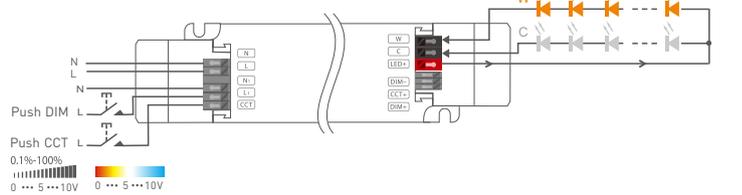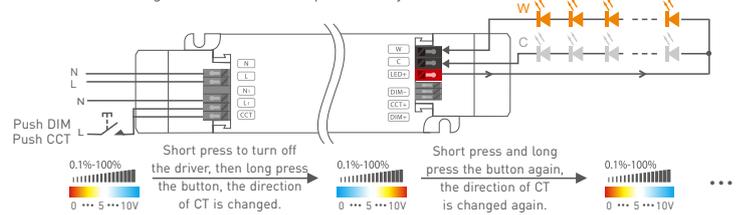
✱ Dimming interface priority: First 0-10V, next Push DIM/CCT.

✱ Adopting constant power program design, it keeps the same brightness in color temperature dimming, twice the rated power load can be connected.
75W driver, 75W X 2CH load can be connected, the total power of the 2 channels will be kept in 75W.
100W driver, 100W X 2CH load can be connected, the total power of the 2 channels will be kept in 100W.



Max. 75W
Max. 75W
E.g.:LM-75-12-G2A2

## Push DIM/CCT



Reset switch
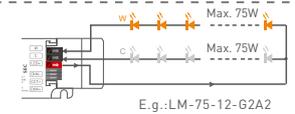
**DIM**
• On/off control: Short press.
• Stepless dimming: Long press.
• With every other long press, the brightness goes to the opposite direction.
• Dimming memory: Brightness will be the same as previously adjusted
  when turning on again.

**CCT**
• Color temperature adjustment: Long press.
• With every other long press, the color temperature level goes to the opposite
  direction.
• Color temperature memory: Color temperature will be the same as previously
  adjusted when turning on again.



Reset switch

**DIM/CCT**
• On/off control: Short press.
• Stepless dimming and changing color: Long press.
• With every other long press, the CT goes to the opposite direction.
• Dimming memory: Brightness will be the same as previously adjusted
  when turning on again.

✱ Applicable to brightness adjustment, color temperature adjustment and brightness/CT
adjustment respective of Push DIM/CCT connection.

✱ Applicable to brightness and CT adjustment simultaneous of Push DIM/CCT connection.

## Application of Protective Cover

Wire pressing board:
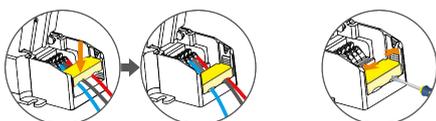


Push the wire pressing board to fix the wire.
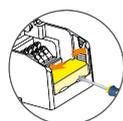
Push outward the side plate,
meanwhile use the tool to uninstall
the wire pressing board.

Uninstall protective cover:
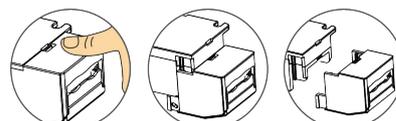


Break off the bottom left and right to remove the protective cover.

**Relationship Diagrams**

### Efficiency vs Load



AC230V/50Hz

### Power Factor Characteristic



AC230V/50Hz

### THD vs Load



AC230V/50Hz

### Over Load Diagram



AC230V/50Hz

LM-75-12-G2A2

### Efficiency vs Load



AC230V/50Hz

### Power Factor Characteristic



AC230V/50Hz

### THD vs Load



AC230V/50Hz

### Over Load Diagram



AC230V/50Hz

LM-75-24-G2A2

## Efficiency vs Load



## Power Factor Characteristic



## THD vs Load



## Over Load Diagram
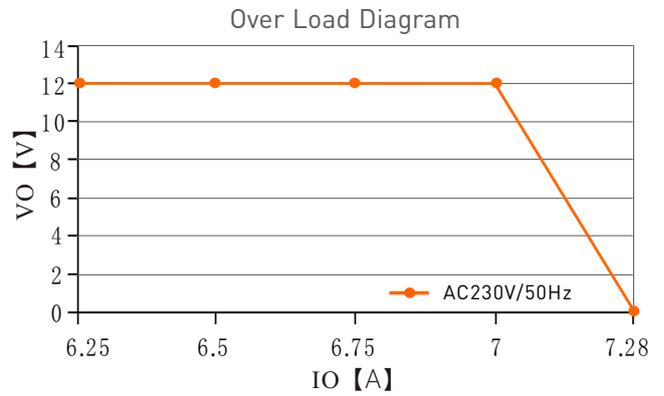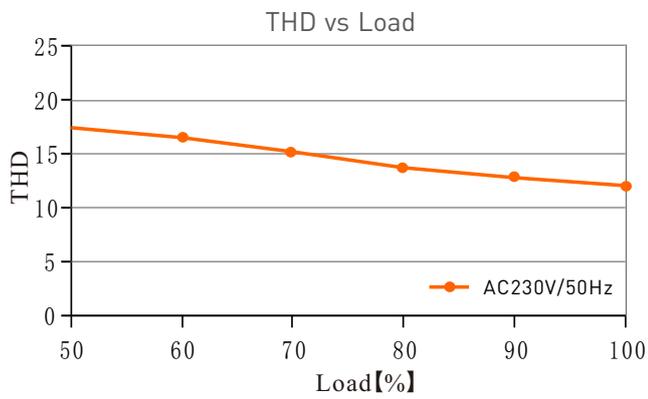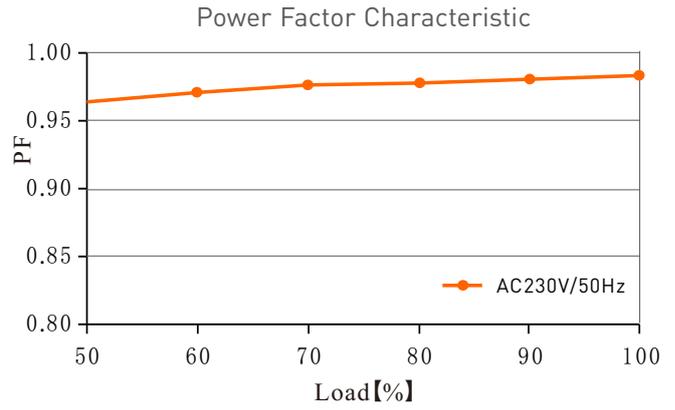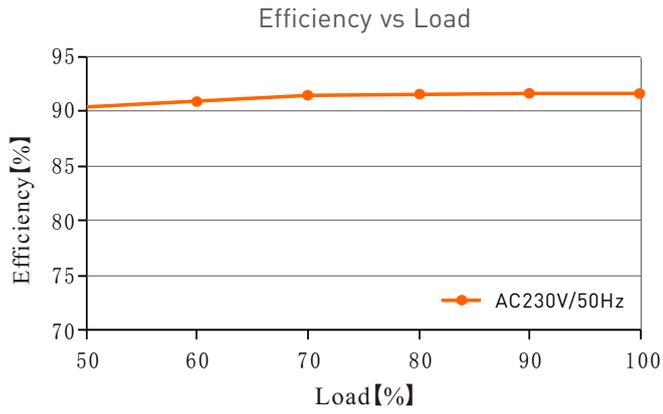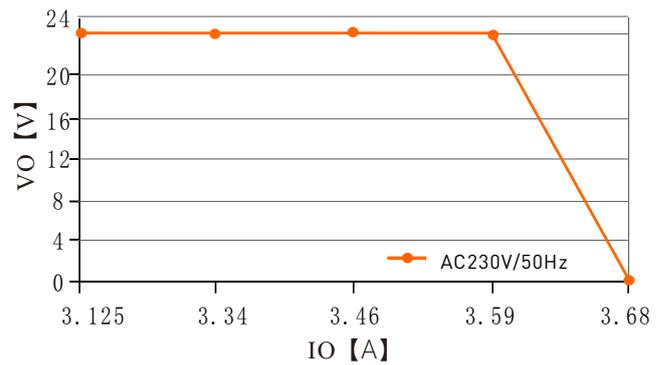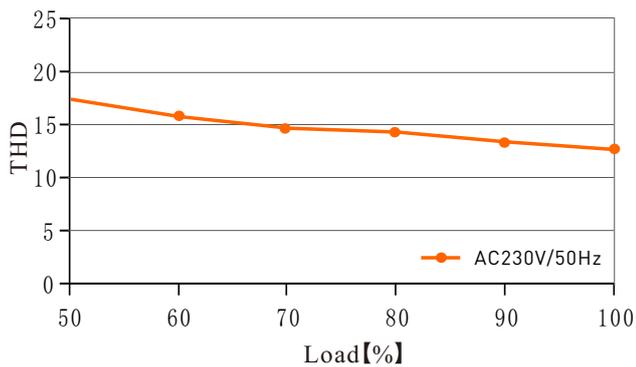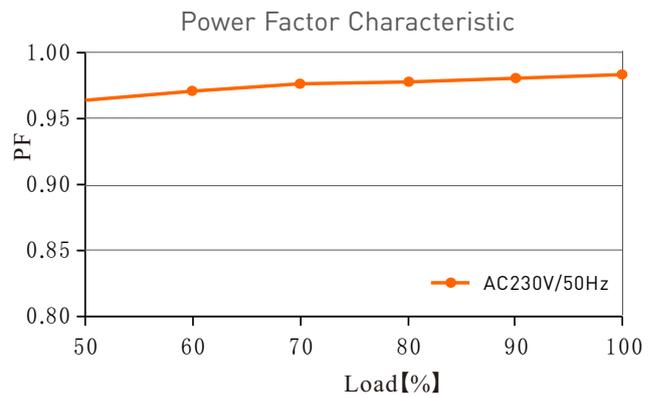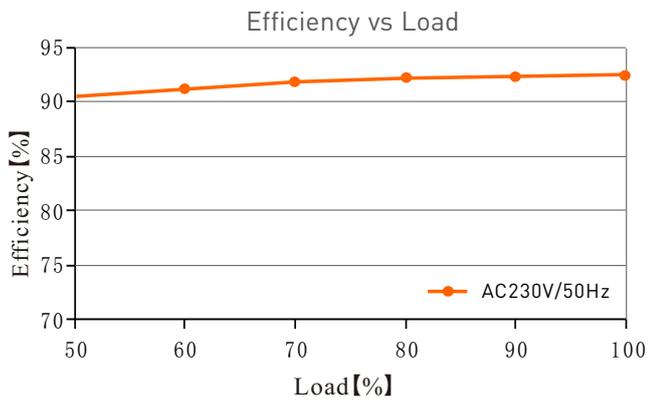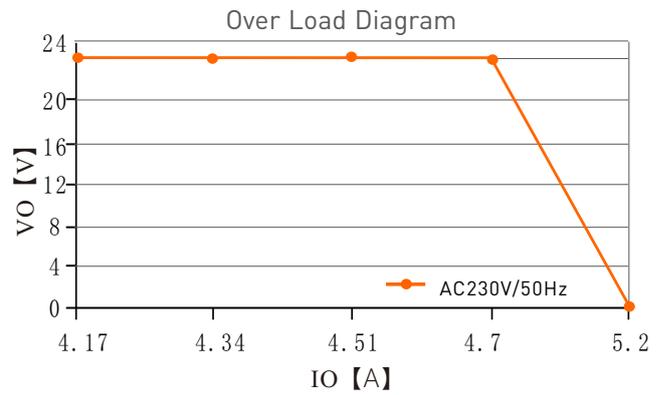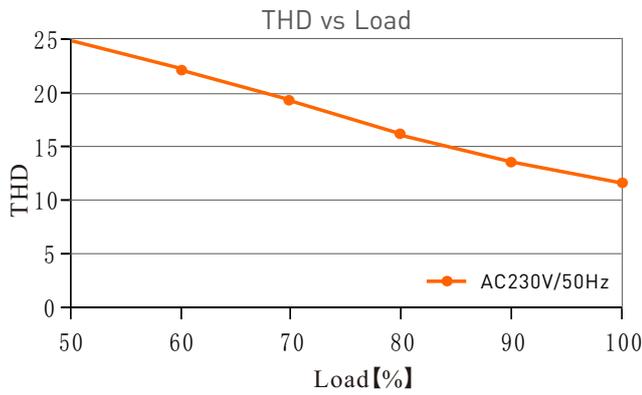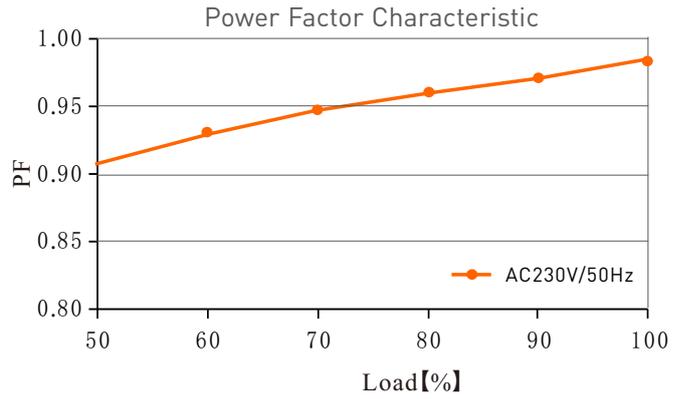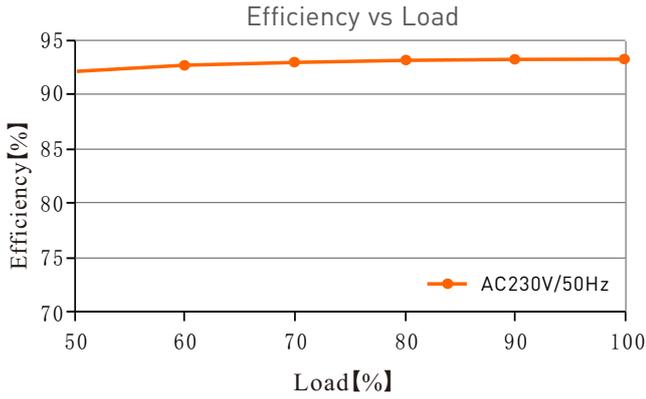


LM-100-24-G2A2

**Flicker Test Form**

### IEEE 1789

| Limit of Modulation in low risk area | |
|---|---|
| Waveform frequency of Optical output | limit (%) |
| $f \leqslant 8Hz$ | 0.2 |
| $8Hz < f \leqslant 90Hz$ | $0.025 \times f$ |
| $90Hz < f \leqslant 1250Hz$ | $0.08 \times f$ |
| $f > 1250Hz$ | Exemption assessment |

| Limit of Modulation in no effect area | |
|---|---|
| Waveform frequency of Optical output | limit (%) |
| $f \leqslant 10Hz$ | 0.1 |
| $10Hz < f \leqslant 90Hz$ | $0.01 \times f$ |
| $90Hz < f \leqslant 3125Hz$ | $(0.08/2.5) \times f$ |
| $f > 3125Hz$ | Exemption assessment (High frequency exemption) |

Brightness

- ▲ 0.1%
- ✦ 1%
- ▲ 5%
- ◆ 10%
- ● 20%
- ▲ 30%
- ● 40%
- ★ 50%
- ● 60%
- ■ 70%
- ⬟ 80%
- ★ 90%
- ◆ 100%