

The most important is that the lights should be simulated the cycle from the sunrise to sunset.



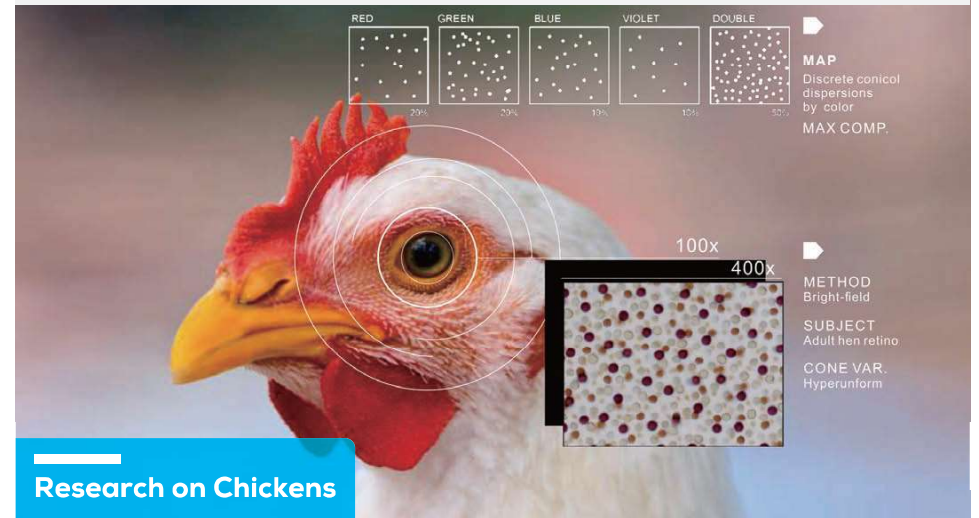
Cycle simulation of sunrise and sunset



Manual or automatic control of the light

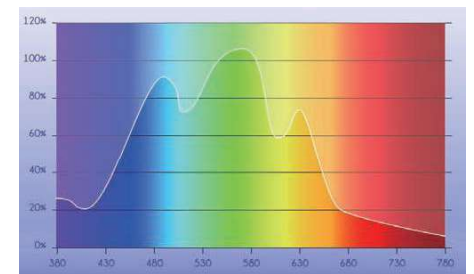


Chickens' eyes are sensitive to the change of light. Chickens are affected by duration, intensity and spectrum of light. Lighting is one of the most important farming input on influencing the production of the meat, egg and other protein sources.



The same is true in animals, including poultry, but with one significant difference. The spectral sensitivity and visible spectrum of poultry, or what they actually see, is not the same as humans. That's why chickens may behave differently under the same intensity light from two different sources that look identical to us.

Chickens' eyes are different from human's, the light we perceive is a part of the electromagnetic spectrum our eyes can detect, known as the visible spectrum.



Domestic Fowl Photopic Spectral Response (Source: LED Magazine)

## Suggested Color

### Temperature For Chicken

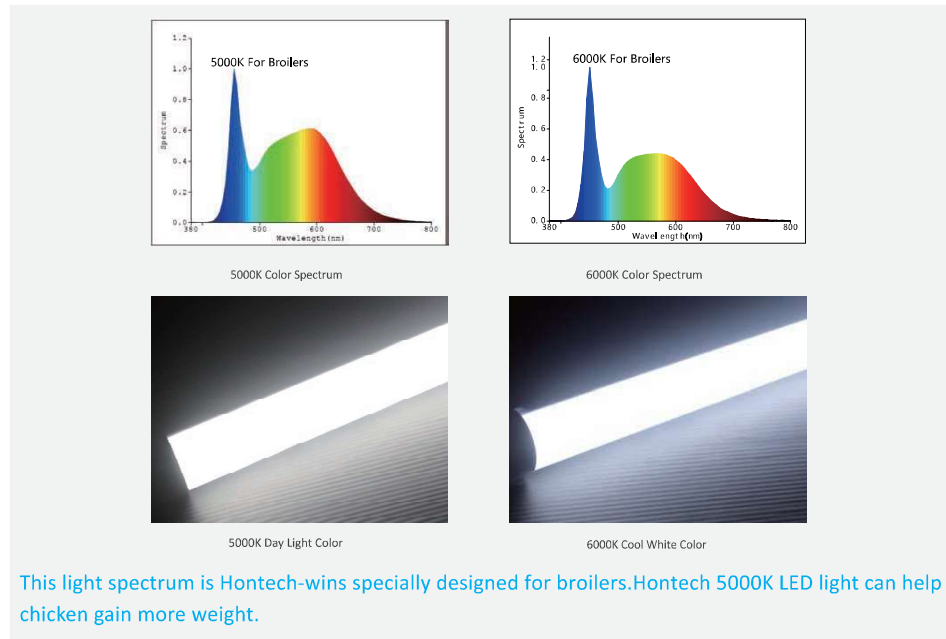
## # 01 Color Temperature For Broiler

Why 5000K/6000K is the suggested color temperature for broilers?

**Blue Color** decreases movement when catching the chicken, making it not frightened then improve the quality of chicken meat.

**Red Color** increases food intake, reduces the feather pecking of chick.

**Green Color** increases growth rate at an early age by enhancing proliferation of skeletal muscle satellite cells.



This light spectrum is Hontech-wins specially designed for broilers. Hontech 5000K LED light can help chicken gain more weight.

## # 02 Color Temperature For Layer

Why 2700K is the suggested color temperature for layers?

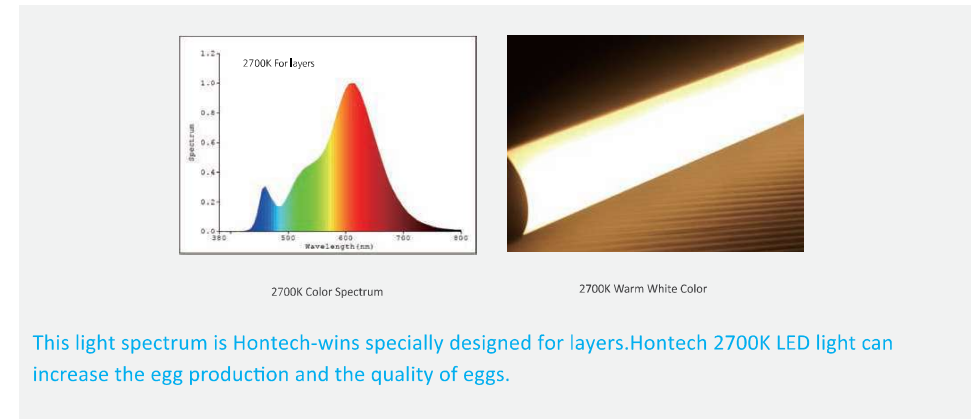
**Blue Color** keeps birds calm, reduces the feather pecking of chick.

**Red Color** increases food intake, enhances egg production, activates movement and accelerates sexual development.

**Green Color** increases growth rate at an early age by enhancing proliferation of skeletal muscle satellite cells and increase the egg quality.

## Suggested Color

### Temperature For Chicken



This light spectrum is Hontech-wins specially designed for layers. Hontech 2700K LED light can increase the egg production and the quality of eggs.

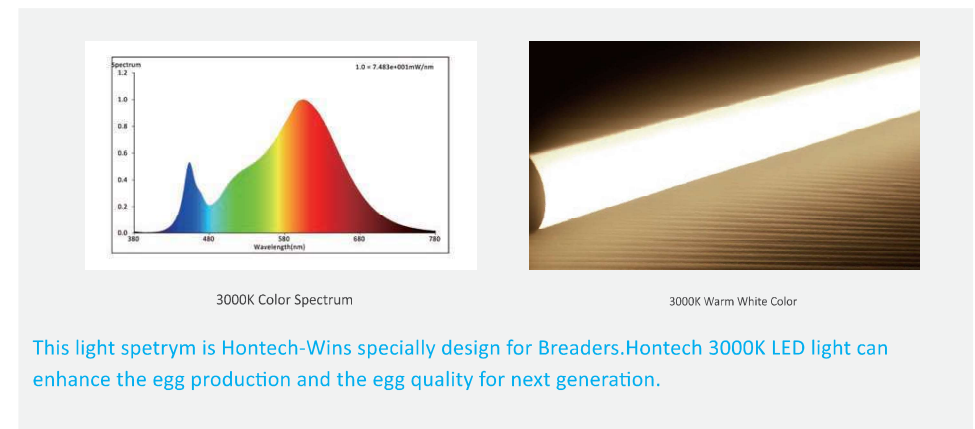
## # 03 Color Temperature For Breeder

Why 3000K is the suggested color temperature for breeder?

**Blue color** keeps birds calm, reduces the feather pecking of chick.

**Red color** increases food intake, enhances egg production, activates movement and accelerates sexual development.

**Green Color** increases growth rate at an early age by enhancing proliferation of skeletal muscle satellite cells and increase the egg quality.



This light spectrum is Hontech-Wins specially design for Breeders. Hontech 3000K LED light can enhance the egg production and the egg quality for next generation.



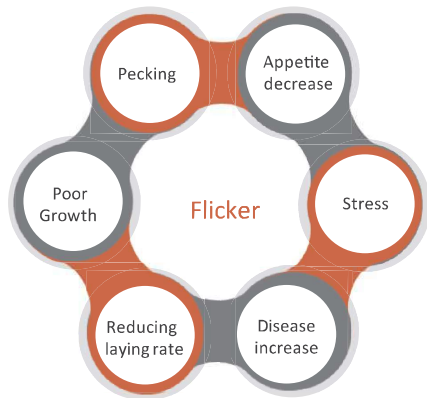
## WHAT IS FLICKER

Flicker is the term used for the rapid and repeated modulation of light output from a source. The principle source of flicker is the periodic variation in AC mains operated lamp output, at twice the AC frequency. Lamps operating on AC electric systems (alternating current) produce light flickering at a frequency of 120 Hertz (Hz, cycles per second), twice the power line frequency of 60 Hz (50 Hz in many countries outside North America). Essentially, the power is turning on and off 120 times a second (actually the voltage varies from +120 volts to -120 volts, 60 times or cycles a second and is at zero volts twice in one cycle).

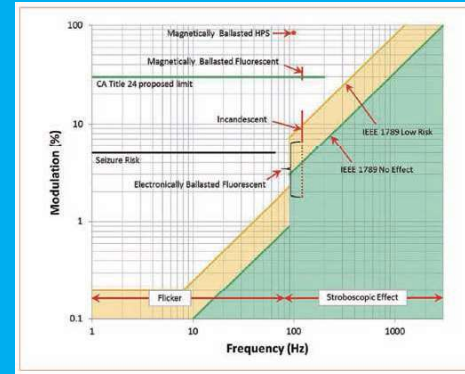
## Why Chickens need flicker free light for better growth?

Flicker is the term used for the rapid and repeated modulation of light output from a source. The principle source of flicker is the periodic variation in AC mains operated lamp output, at twice the AC frequency. This is known as photometric flicker and varies with each technology.

The incandescent bulb does not appear to flicker due to its inefficient thermal persistence keeping the filament hot, masking the switch in direction of the current. In contrast to this, LED responds instantaneously to changes in the power supply so any effect of photometric flicker is obscured by electrical flicker such as noise on the AC distribution lines or dimming an LED using pulse width modulation.



## STANDARD OF FLICKER -Source from IEEE



The Institute of Electrical and Electronics Engineers (IEEE) P1789 committee has published recommendations based on Flicker Modulation metrics. Figure below shows the proposed limits by Lehman and Wilkins. The IEEE recommendation fixes 90 Hz as cut-off frequency. This may be seen as a bad choice because it leads to the rejection of 'European flicker' at 100 Hz but not 'US flicker' at 120 Hz. This recommendation leads to a Flicker Modulation up to 8.0% at 100 Hz and 9.6% at 120 Hz. Flicker Modulation depth as a function of flicker frequency. Flicker modulation is given for no effect level (green) and low risk level (yellow).

The Judgement standard for Flicker Free:

1. Flicker Frequency less than 9Hz, invisible flicker modulation depth is 0.288%
2. Flicker Frequency in the range of 9Hz-3120Hz, invisible flicker modulation depth is Flicker Frequency x 0.032%
3. Flicker Frequency higher than 3120Hz, flicker free



## ADVANTAGE

Poultry have keen eyesight and are much more sensitive than humans to light flickering. Chicken's eyes can see the frequency lower than 205Hz.

Hontech LED poultry lighting are designed with flicker free LED driver. A flickering free lighting environment help the birds behave more calmer, even when the light level is raised from dim to full light.

Hontech Lighting  
(NO Flicker)



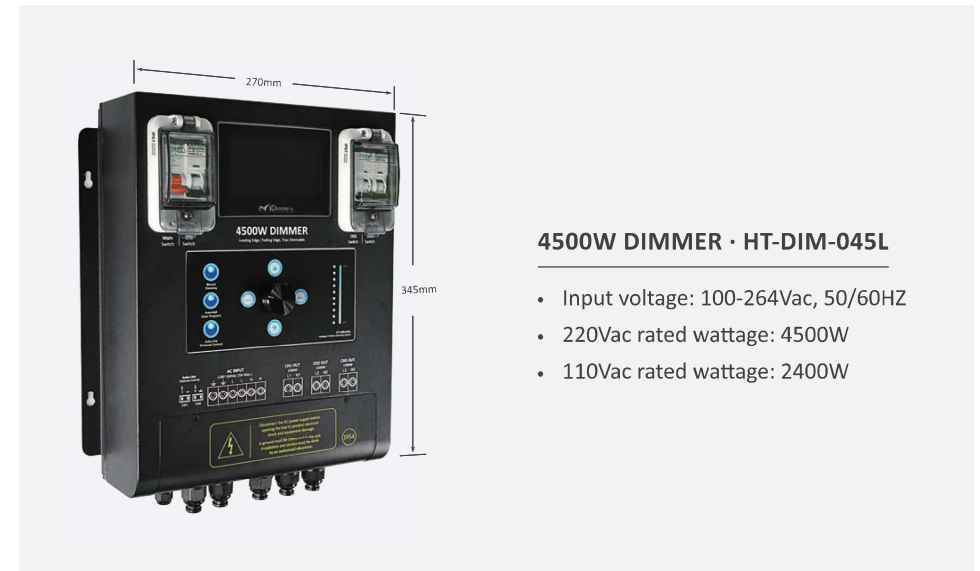
Normal Lighting  
(100Hz Flicker)



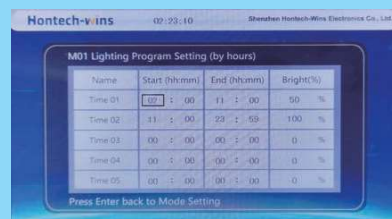


## Programmable Dimming Controller Leading Edge Dimming Systems

## Programmable Dimming Controller Leading Edge Dimming Systems



### Lighting program setting (set by days, specific time and brightness)



### Why it need to set Rising & Dropping Time?

According to the RSPCA (Royal Society for the Prevention of Cruelty to Animals), the light intensity between lighting period must be adjusted in a gradual manner (using dimmer or switching individual lights on/off) over at least 15 minutes.

### Rising & Dropping Time



## PRODUCT FEATURES

- Programmable Dimmer =Manual Dimmer+Timer
- Five Protection:
  - 1.(SCP) Short Circuit Protection
  - 2.(OCP) Over Current Protection
  - 3.(OVP) Over Voltage Protection
  - 4.(OPP) Over Power Protection
  - 5.(OTP) Over Temperature Protection
- Anti 6KV Lightning Surge
- Dim to "0"V, No Output
- Harmonic Current Inhibition
- Support system updating
- 24hrs/Days Lighting program control
- Support DIY lighting program setting
- 5 Modes for lighting program setting
- High Efficiency : 98%
- Dimmable from : 1%-100%
- Smooth dimming without flickering
- Programmable brightness control by Auto-self setting

## Manual Dimming Controller

### Leading Edge Dimming Systems



#### 3000W DIMMER · HT-DIM-030S

- Input voltage: 100-264Vac, 50/60Hz
- 220Vac rated wattage: 3000W
- 110Vac rated wattage: 1500W



#### 1500W DIMMER · HT-DIM-015L

- Input voltage: 100-264Vac, 50/60Hz
- 220Vac rated wattage: 1500W
- 110Vac rated wattage: 1000W

## Manual Dimming Controller

### Leading Edge Dimming Systems



#### 4500W DIMMER · HT-DIM-045S

- Input voltage: 100-264Vac, 50/60Hz
- 220Vac rated wattage: 4500W
- 110Vac rated wattage: 2400W

## PRODUCT FEATURES

- Five Protection:
  - 1.(SCP) Short Circuit Protection
  - 3.(OCP) Over Current Protection
  - 3.(OVP) Over Voltage Protection
  - 4.(OPP) Over Power Protection
  - 5.(OTP) Over Temperature Protection
- Anti 6KV Lightning Surge
- Dim to "0"V, No Output
- Harmonic Current Inhibition
- Smooth dimming without flickering
- Dimmable from : 1%-100%
- Control the lights by manual switch
- With 0-10V signal, can be controlled by external systems

**T12 · IP67 · Dimmable**

LED Poultry Light For Floor Chickens



FLICKER FREE FSAA CE RoHs IP67

T12 LED Poultry Light >>>

Beam Angle 180°	HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
	HT-T12AC25W12FD	180°	180-264Vac	23-25W	SMD2835 132pcs	L: 1200mm OD32mm
	HT-T12AC30W15FD			28-30W	SMD2835 168pcs	L: 1500mm OD32mm
	HT-T12AC36W18FD			33-35W	SMD2835 192pcs	L: 1800mm OD32mm

Beam Angle 270°	HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
	HT-T12AC25W12FE	270°	180-264Vac	23-25W	SMD2835 168pcs	L: 1200mm OD32mm
	HT-T12AC30W15FE			28-30W	SMD2835 216pcs	L: 1500mm OD32mm
	HT-T12AC36W18FE			33-35W	SMD2835 288pcs	L: 1800mm OD32mm

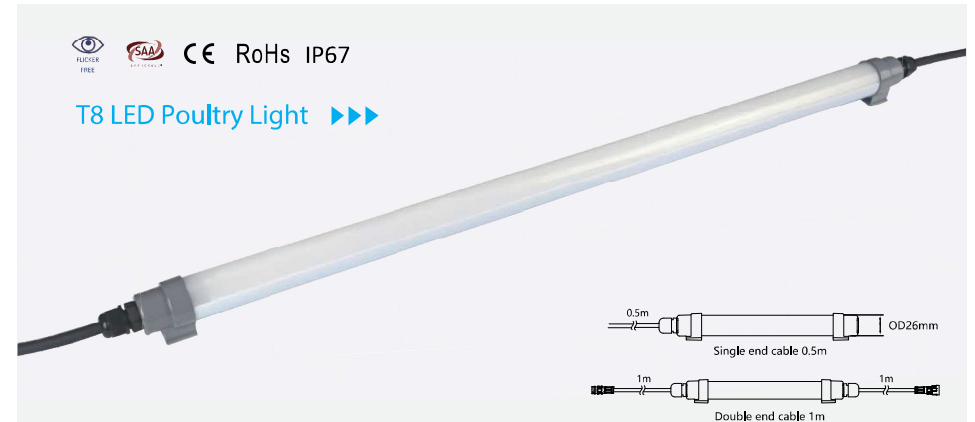


**Australia Chicken Farm**

Farm Size: 116m \* 15m  
T12 LED Lights: 120pcs(4rows \* 30pcs)

**T8 · IP67 · Dimmable**

LED Poultry Light For Floor Chickens

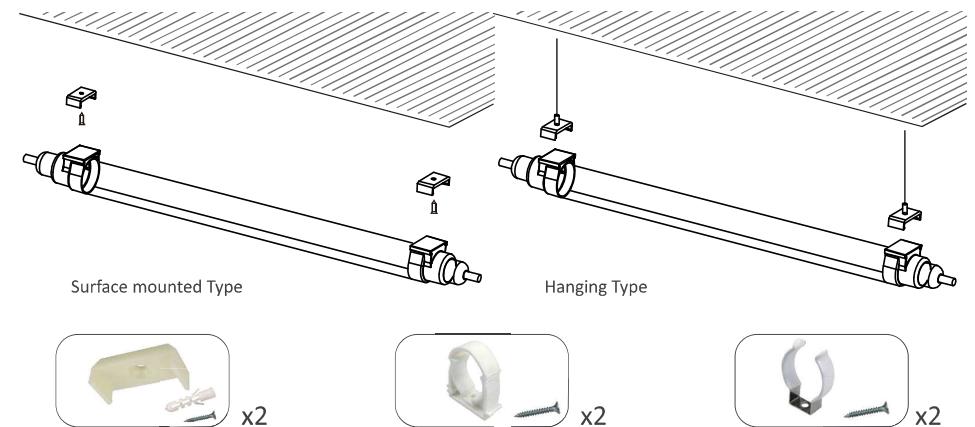


FLICKER FREE FSAA CE RoHs IP67

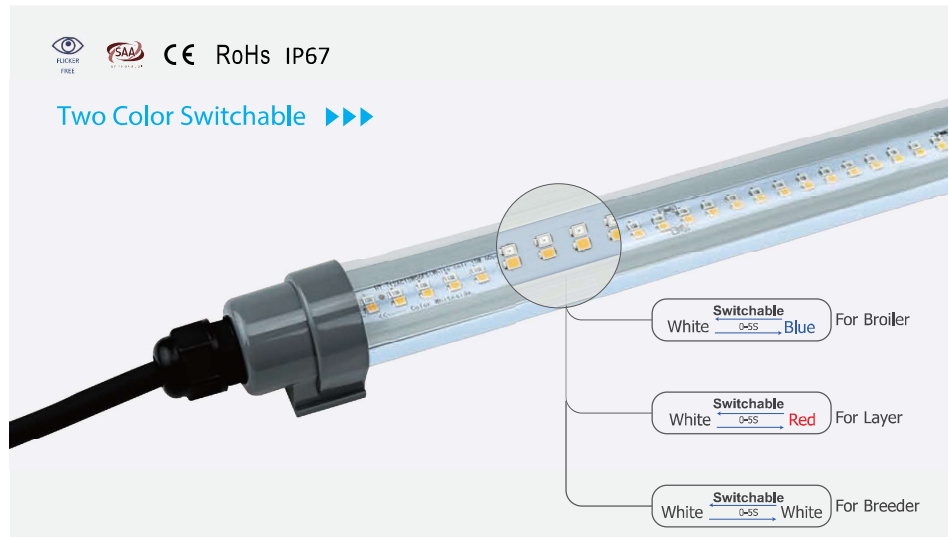
T8 LED Poultry Light >>>

Beam Angle 140°	HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
	HT-T8AC18W12FB	140°	180-264Vac	16-18W	SMD2835 108pcs	L: 1200mm OD26mm
	HT-T8AC18W15FB			18-20W	SMD2835 120pcs	L: 1500mm OD26mm

**INSTALLATION >>>**



**T12 · IP67 · Dimmable · Two Color Switchable**  
LED Poultry Light For Floor Chickens



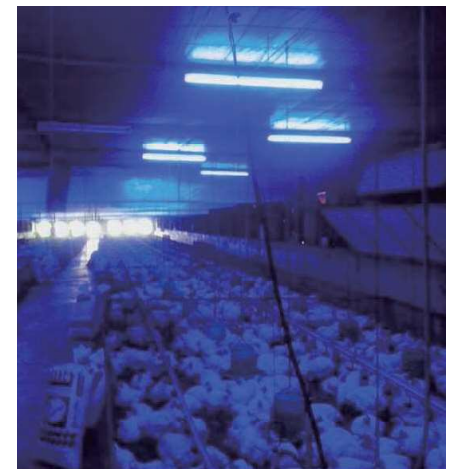
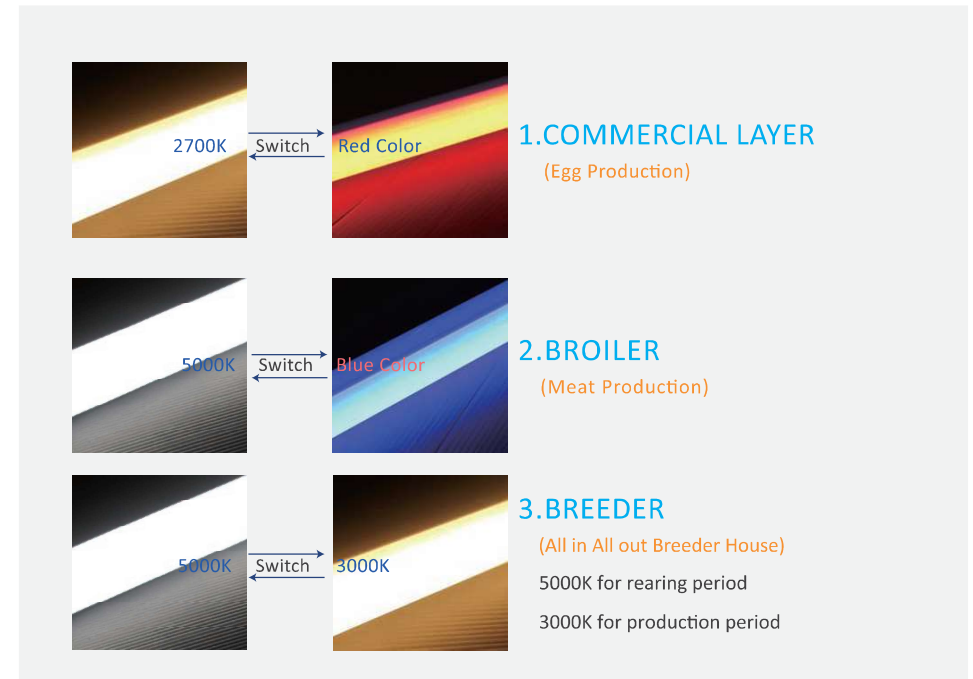
Beam Angle 180°	HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
	HT-T12AC25W12FS	180°	180-264Vac	white color 25W	white SMD2835 132pcs	L: 1200mm
				white/red/blue color 8W	white/red/blue SMD2835 44pcs	OD32mm
	white color 25W			white SMD2835 132pcs	L: 1200mm	
	white/red/blue color 25W			white/red/blue SMD2835 132pcs	OD32mm	
HT-T12AC30W15FS	white color 30W	white SMD2835 168pcs	L: 1500mm			
	white/red/blue color 11W	white/red/blue SMD2835 56pcs	OD32mm			
		white color 30W	white SMD2835 168pcs	L: 1500mm		
		white/red/blue color 30W	white/red/blue SMD2835 168pcs	OD32mm		

Color switchable ( e.g: "White" vs "Blue" ) within 0-10s from AC OFF / ON .Turn OFF / ON the AC power within 0-10s each time, the color shall be switched into the other color.

Restore to Default Color: Turn OFF / ON the AC power three times within 0-10s, The color shall be switched into the default color (The color in CH-1, e.g: white color).

Memorable: Turn OFF / ON the AC power more than 10s, the light can be memorable for the color which the color before the power off.

**T12 · IP67 · Dimmable · Two Color Switchable**  
LED Poultry Light For Floor Chickens





**E27 · IP65 · Dimmable**

LED Bulb For Floor/ Cage Chickens



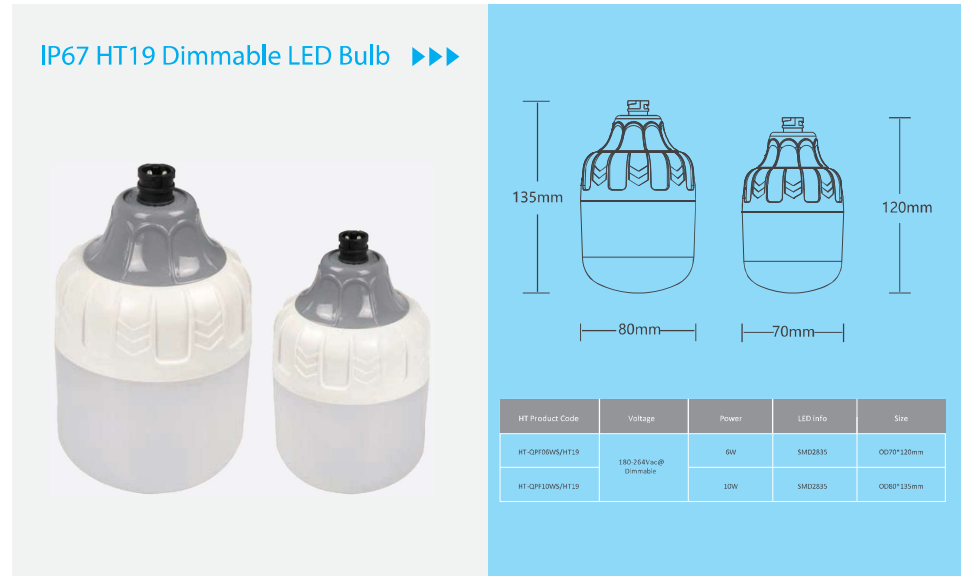
**PRODUCT FEATURES**

Easy to replace the old farm lamps.  
 PC Material LED bulb Housing to resist cleaning chemicals.  
 Waterproof glue inside for standing the water jet when cleaning.  
 Flicker free LED driver, smooth dimming without flickering.

HT Product Code	Voltage	Socket Type	Power	LED info	Size
HT-QPF10WD	180-264Vac@ Dimmable	E27	10W	SMD2835	OD108*130mm
HT-QPF15WD		HT19	15W	SMD2835	OD108*140mm
		PG9			

**HT19 · IP67 · Dimmable**

LED Bulb For Floor/ Cage Chickens



HT Product Code	Voltage	Power	LED info	Size
HT-QPF06WS/HT19	180-264Vac@ Dimmable	6W	SMD2835	OD70*120mm
HT-QPF12WS/HT19		10W	SMD2835	OD80*135mm

**IP65 E27 Dimmable LED Bulb**



HT Product Code	Voltage	Power	LED info	Size
HT-QPF06WS/E27	180-264Vac@ Dimmable	6W	SMD2835	OD70*130mm
HT-QPF10WS/E27		10W	SMD2835	OD80*140mm
HT-QPF15WS/E27		15W	SMD2835	OD100*190mm



**T14 · IP67 · Dimmable · 360°**  
LED Poultry Light For Cage Chickens



HT Product Code	Voltage	Power	LED info	Size
HT-T14AC20W12FD	180-264Vac@ Dimmable	20W	SMD2835 288pcs	L:1200mm OD34mm
HT-T14AC25W15FD		25W	SMD2835 360pcs	L:1500mm OD34mm

**T14 · IP67 · Dimmable · 360°**  
LED Poultry Light For Cage Chickens




Chicken Farm( Layer House) In South America  
Installed light: HT-T14AC20W12FD  
Dimmable T14 360degree LED tube light 1200mm 20W  
Color Temperature 2700K  
E27 base for vertical installation  
4M Light distance

**T12 DOUBLE SIDED LED TUBE LIGHT** ▶▶▶

Double Sided Lighting	HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
	HT-T12AC25W12FF	Double Sided	180-264Vac @Dimmable	23-25W	SMD2835 168pcs	L: 1200mm OD32mm
	HT-T12AC30W15FF			28-30W	SMD2835 216pcs	L: 1500mm OD32mm
	HT-T12AC36W18FF			33-35W	SMD2835 264pcs	L: 1800mm OD32mm

**O-10V Dimmable LED Driver**  
for 48Vdc Cage Lights

**O-10V Dimmable Driver**  
for 48Vdc Cage Lights



154mm  
277mm  
**NEW**

**ALL NEW "3th" Version**

**500W DRIVER · HT-PSD500WCC**

- Input Voltage: 100-265Vac
- Input Current: 4.2A
- Frequency: 50/60Hz
- Output Power: 500W(220Vac)  
400W(110Vac)
- Output Voltage: 48Vdc
- Output Current: 0-10.5A
- Turn Off: <1% (No output)
- Flicker Free 0Hz
- Dimmable: 1%-100%



**iTIMER 2.0**

- Model No.: HT-TIM-02T
- Built in 0-10V signal
- Manual brightness control
- Programmable brightness control by Auto-Self Setting
- USB port for program update
- 24hrs/Days Lighting program control
- Support DIY lighting program setting
- 5 Modes for lighting program setting




**360W DRIVER**


- Model No.: HT-PSD360WCC
- Input: 100-264V~, 50/60HZ
- Output Power: 360W(220Vac)  
300W(110Vac)
- PF > 0.98 @max. load
- Efficiency > 91% @230Vac
- THD < 10%
- Dimmable: 1%-100%
- Turn Off: 1% (No output)

**NEW**

**IP67 DC48V LED Bulb ▶▶▶**

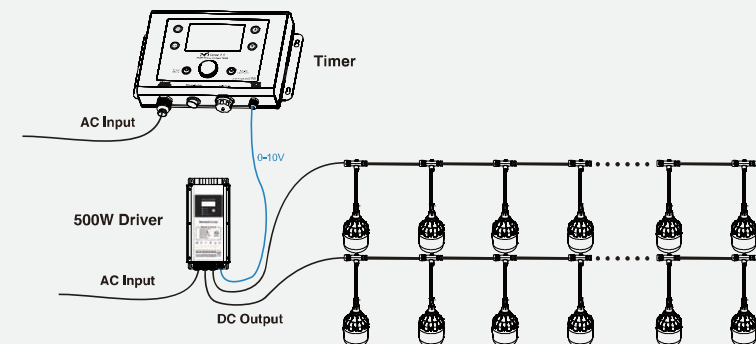


HT Product Code	Voltage	Power	Size
HT-QPF07WH	48Vdc	7W	OD103*90mm
HT-QPF10WH		10W	OD103*113mm



HT Product Code	Voltage	Power	LED Info	Size
HT-QPF06WS/HT19	48Vdc	6W	SMD2835	OD70*120mm
HT-QPF10WS/HT19		10W	SMD2835	OD80*135mm

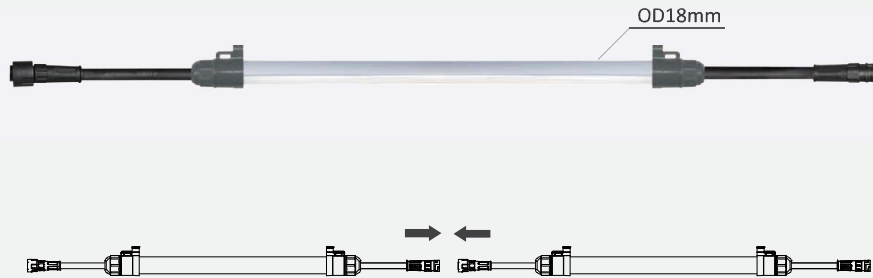
**▶▶▶ DC48V Dimmable LED Lighting System Wire Diagram**



**T5-L · IP67 · Dimmable**

LED Poultry Light For Cage Chickens

T5-L Cable Connection ▶▶▶



HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
HT-T5DC04W12FB/A	140°	48Vdc	4W	SMD2835 45leds	1200mm
HT-T5DC05W15FB/A			5W	SMD2835 60leds	1500mm
HT-T5DC06W18FB/A			6W	SMD2835 75leds	1800mm




**T5 · IP67 · Dimmable**

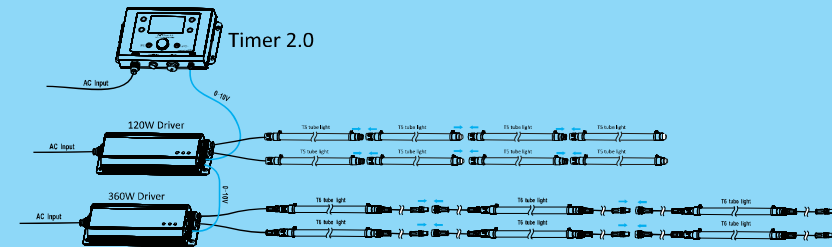
LED Poultry Light For Cage Chickens

◀◀◀ T5 Plug & Play Connection



HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length	 PLUG & PLAY CONNECTION
HT-T5DC04W12FB/B	140°	48Vdc	4W	SMD2835 45leds	1200mm	
HT-T5DC05W15FB/B			5W	SMD2835 60leds	1500mm	
HT-T5DC06W18FB/B			6W	SMD2835 75leds	1800mm	

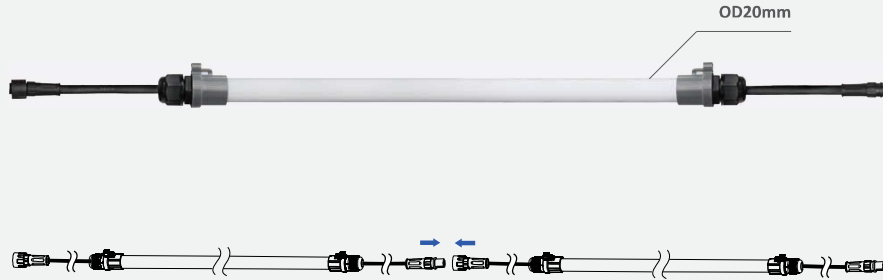
▶▶▶ Timer with 0-10V 120W/360W Driver and 48Vdc T5/T6 LED Tube Light Connection



**T6 · IP67 · Dimmable**

LED Poultry Light For Cage Chickens

T6 Cable Connection ▶▶▶



PLUG & PLAY CONNECTION

PRODUCT FEATURE:

- Specially design for cage chicken, IP67 LED tube light.
- DC 12V/24V/36V/48V available, low safety voltage.
- Wide beam angle, no dark area for cage chicken.
- PC material, chemical resistance(Ammonia).
- Flicker free and perfectly dimmable from 1-100%.

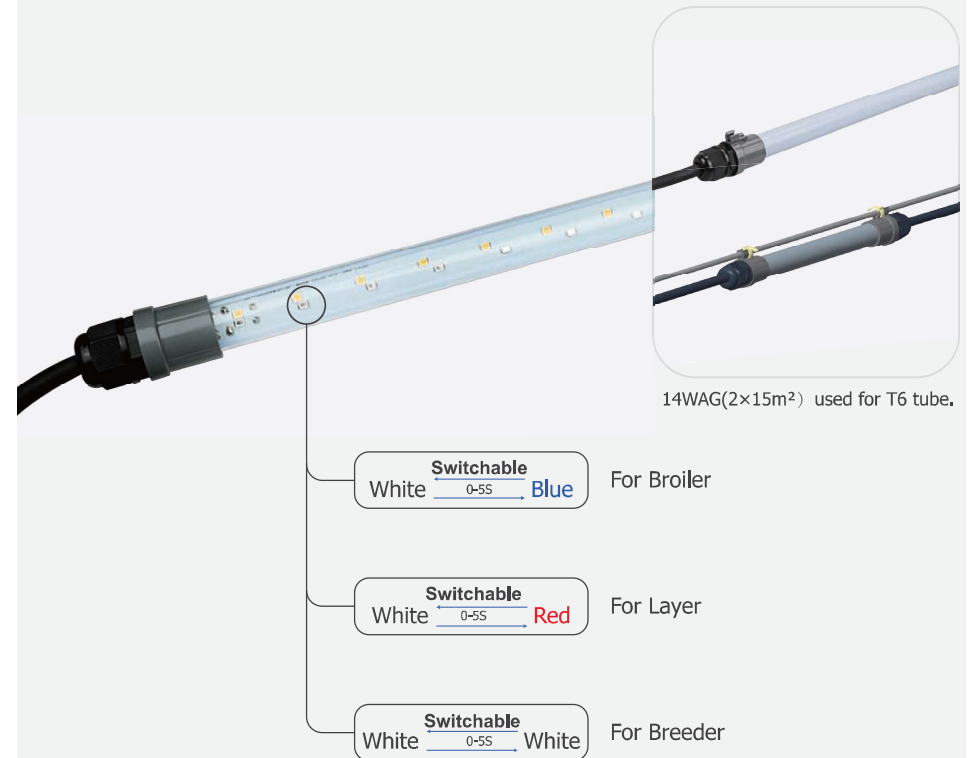


HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
HT-T6DC04W12FB/C	140°	48Vdc	4W	SMD2835 45leds	1200mm
HT-T6DC05W15FB/C			5W	SMD2835 60leds	1500mm
HT-T6DC06W18FB/C			6W	SMD2835 75leds	1800mm

**T6 · IP67 · Dimmable**

LED Poultry Light For Cage Chickens

Two Color Controlled at same time ▶▶▶



14WAG(2×15m<sup>2</sup>) used for T6 tube.





▶▶▶ Why LED Light is good for pig/swine growth?

Physiology of the porcine eye suggest that the domesticated pig is best adapted for dim levels of natural light. Pig have dichromatic vision, in the pig's eye there are two sets of cones that give the animal peak wavelength sensitivity at 439 nm (blue color) and 556 nm (green color). The photoreceptors in a pig's eye cannot detect the red color (>650 nm).

Evidence shows that pigs have poorer color perception than humans and in particular a reduced sensitivity to the red end of the spectrum. There is little research into the effect of colored lights on pig production. In cases where red light has been used, pigs respond as though in darkness.

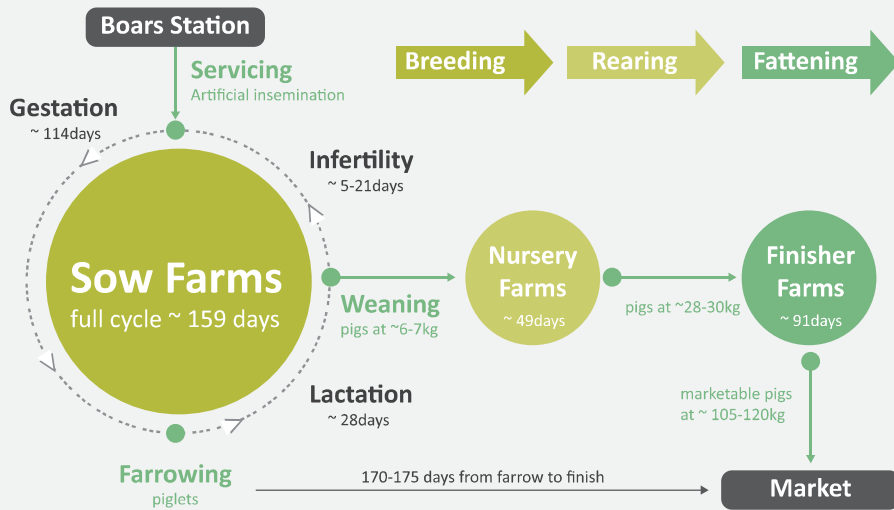
One key benefit of LED lighting is the ability to dim the lights, providing dawn and dusk periods, reducing the competition for food when lights are switched on in the morning and reducing potentially startling effects when lights are switched on or off.

HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
HT-T12AC25W12FD	180°	100-264Vac	23-25W	SMD2835 132pcs	L: 1200mm ØD32mm
HT-T12AC30W15FD			28-30W	SMD2835 168pcs	L: 1500mm ØD32mm
HT-T12AC36W18FD			33-35W	SMD2835 192pcs	L: 1800mm ØD32mm



T12 · IP67 · Dimmable  
Pig House LED Lighting

There are various type of pig farm and it divides into many phases in pig production.  
The phases of pig production as below:



Each pig production phase has different demands that require different lamp in different lighting intensity. The light should suit the phase in pig production and the type of pig house.



• T8/T12 LED Tube, See page 14 for details.



• 15W/18W LED Bulb, See page 17/18 for details.

T12 · IP67 · Mushroom House  
LED Poultry Light For Cage Chickens



LED LIGHT FOR MUSHROOM HOUSE

PRODUCT FEATURES

- Withstand steam and water leaks
- IP67 steam and ammonias resistant
- Specially design for mushroom house
- Operation temp:-20 C -50 C
- Storage temp:-30 C -95 C
- Steaming temp:95 C MAX



The Netherlands Mushroom  
Farm Size: 120m\*16m  
T12 LED Lights: 85pcs

HT Product Code	Beam Angle	Voltage	Power	LED info	Total Length
HT-T12AC25W12FD	180°	100-264Vac	23-25W	SMD2835 132pcs	L: 1200mm OD32mm
HT-T12AC30W15FD			28-30W	SMD2835 168pcs	L: 1500mm OD32mm
HT-T12AC36W18FD			33-35W	SMD2835 192pcs	L: 1800mm OD32mm



## Lighting Project



◀ Saudi Arabia Breeder Farm  
LED Bulb: 150pcs(5\*30pcs)



▶ South Africa Broiler Cage Farm  
Cage Size: 2.4m\*1.2m  
T6 LED Lights: 1pcs



◀ Poland Chicken Farm  
Farm Size: 120m\*14m  
T8 LED Lights: 90pcs(3\*30)



▶ Korea Broiler Farm  
LED Bulb: 60pcs(3\*20pcs)



◀ Thailand Chicken Farm  
Farm Size: 60m\*16m  
Color Switchable LED Lights: 50pcs



▶ Spain Chicken Farm  
Farm Size: 110m\*15m  
T8 LED Lights: 80pcs(4\*20pcs)



◀ Saudi Arabia Chicken Farm  
Farm Size: 100m\*14m  
E27 LED Bulb: 120pcs



▶ Australia Chicken Farm  
Farm Size: 150m\*12m  
T12 LED Lights: 108pcs

## Lighting Project



◀ China Goose house  
Size: 66\*12\*2.5m  
HT-T5DC09W18FD 108pcs



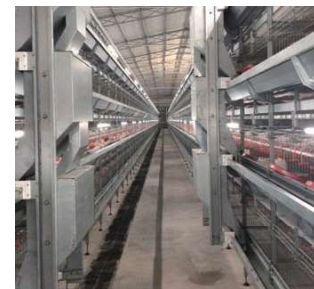
▶ Ukraine Chicken Farm  
Farm Size: 80m\*12m  
T12 LED Lights: 96pcs (3\*32pcs)



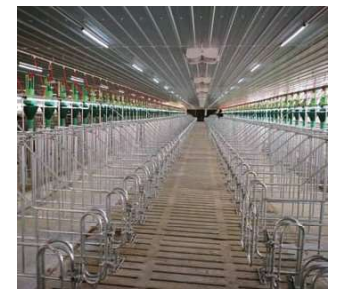
◀ China breeder house  
Size: 90\*14\*4m  
HT-QPF06WH 252pcs



▶ Netherlands Pig Farm  
Farm Size: 17m\*4.8m  
T12 LED Lights: 10pcs



◀ China breeder house  
Size: 96\*15m cage height 2.8m  
HT-T6DC06W15FB 560pcs



▶ China Pig Farm  
Farm Size: 110m\*15m  
T8 LED Lights: 80pcs(4\*20pcs)



◀ China Layer Farm  
Farm Size: 80m\*15m  
E27 LED Bulb: 240pcs (6\*40pcs)



▶ The Netherlands Pig House  
Farm Size: 127m\*25m  
T12 LED Lights: 280pcs