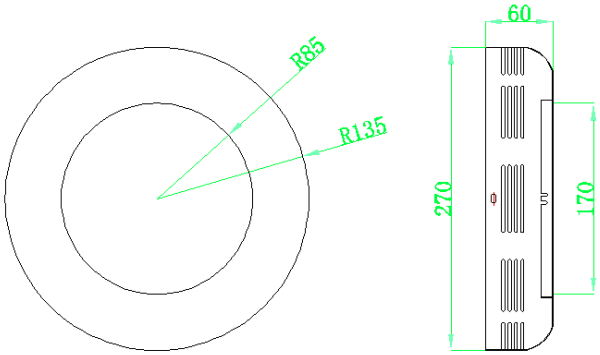
SG-01 LED Grow Light

Main Advantages of SG-01 LED Grow Light

1. SG-01 LED Grow Light produces great effect as 200W MH grow light. It saves 50%-75% electricity. It is a updated product with great energy-saving and carbon-reducing.
2. LED life-span reaches 50,000 hours.
3. Built-in power supply with Wide Voltage Range from AC85 to AC265V, no setup required, no reflector & ballast needed. No need any technical support for end users. Just plugs the LED grow light into AC85-265V power socket directly. It make its installation safely and simply.
4. It doesn't contain the harmful substance HPS & MH have, no hazardous waste to deal with. It makes our earth more clean and green.
5. All the parts are connected by standard connectors. Such connection is safer. Special connection design makes client to maintain the LED light conveniently.
6. SSP technology, lightning-proof and surge-proof are applied in the power design. Do not worry about lightning and electrical shock . SSP technology restricts output DC voltage to be never higher than the LED chips voltage ,so as to avoid the LEDs from shock of overvoltage .
7. SPC technology make sure that the light works more stably. Any LED cells with fault will not affect the working of other LED cells, and the whole light still works.
8. Welding LED directly onto AL-PCB instead of traditional PCB. aluminum is well known as excellent passive heat dissipation and the built-in fan is well known as good active heat dissipation. Both of the passive and active method are used in the LED grow light to be best solution of the heat dissipation.
9. Use 2W High Power LED for higher luminescent efficiency and less heat production

Product Pictures and Dimension of SG-01 LED Grow Light



Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

Application of SG-01 LED Grow Light

SG-01 LED Grow Light is suitable for the greenhouse lighting, horticulture, Hydroponics, Farm, Flower Exhibition, Garden, Bonsai etc.

1. Ideal for all phases of plant growth, and works well in any indoor garden, either hydroponics or soil based.
2. Red and Orange are good for flowering and budding, blue is good for vegetative. Customers can choose the color wavelength and color ratio which is most suitable for their plant growth.
3. The lighting area and height above the plant can be changed. They depend on different plants and environment.

Technical Specification of SG-01 LED Grow Light

1. Power Factor(PF): >90% for AC220V power supply : >97% for AC110V power supply
2. Total Harmonic Distortion: <15%
3. Input AC : AC85 ~ 265V 50Hz/60Hz
4. Input Power: 85W ~ 90W (it depends on different color ratio.)
5. The number of LED(2W): 45 PCS
6. Color Wavelength: Blue :430-445nm & 450-460nm, Red: 620-630nm & 650-670nm, Orange: 610-615nm, Infrared Rays: 740-850nm, Ultra Violet: 380-400nm, White: 2700K-10000K (To be selected by customer)
7. Color Ratio: Red: Blue: Orange=7:1:1 (or to be customized by customer)
8. Working environment temperature: -20℃~40℃
9. Working environment humidity: <90%
10. Storage temperature: -40℃~60℃
11. Working time: 10-14Hours /day
12. Package Size: 310mm*310mm*130mm
13. Gross Weight: 2.5KG Net Weight: 2.0KG

Parameters of 2W LEDs applied in the SG-01 LED Grow Light

LED (2W)	Alias	λd (nm)	λp (nm)	Δλd (nm)	Lm (lm)	Vf (V)	If (mA)	Pf (mW)
Ultra-Violet	UV	380	394	13.4	1.58	3.9	600	2340
Violet-Blue	440	447	440	18.2	13.3	4.03	600	2418
Royal blue	460	462	457.6	23	27	3.57	600	2220
Orange	615	618.0	625.8	16	62.5	2.4	600	1440
Red	630	628.5	636.2	16	63.2	2.6	600	1560
Deep Red	660	645.1	655.9	17.1	40.9	2.53	600	1518
Near-infrared	740	725	737	28.6	0.167*2	1.632	300*2	489.6*2
Middle-infrared	850	Test instrument unreachable			0	1.47	300*2	441.7*2

Note: *Above information is based on the test result and real parameter may be different with the above.*

Thermal Test of SG-01 LED Grow Light

Thermal Test Result of SG-01 at 600mA for LED Driver											
Date	Time	Heat Sink		AL-PCB		Leg of LED		Air		LED to Air	
		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
30th DEC	13:30	107.6	42	109.4	43	118.4	48	82.4	28	36	20
	14:00	105.8	41	113	45	122	50	90.5	32.5	31.5	17.5
	14:30	107.6	42	114.8	46	120.2	49	89.6	32	30.6	17
	15:00	109.4	43	113	45	120.2	49	89.6	32	30.6	17
	15:30	111.2	44	113	45	123.8	51	84.2	29	39.6	23
	16:00	114.8	44	114.8	46	122	50	86	30	36	20
	16:30	114.8	44	114.8	46	120.2	49	87.8	31	32.4	18
	17:00	114.8	44	116.6	47	125.6	52	86	30	39.6	22
	17:30	114.8	44	114.8	46	122	50	86	30	36	20
31st DEC	08:30	104	40	109.4	43	116.6	47	78.8	26	37.8	21
	09:00	102.2	39	104	40	114.8	46	77	25	37.8	21

Note:

1. *The temperature was tested from 13:30 30th DEC to 09:00 31st DEC.2010*
2. *In the whole LED light, the highest temperature area is located in LEDs.*
3. *The temperature arising between LED to Air variety from 17-23°C. LED chips work under good condition.*
4. *The real temperature may be slightly different with the above testing result.*

LUX Parameter of SG-01 LED Grow Light

Note: *The above diagram from test is based on color ratio of Red(630nm):Blue(460nm):Orange(613nm)=7:1:1. The different color ratio will have different testing result.*

Parameter Comparison of SG-01 LED Grow Light and other Lights

Products name / Items	LED Grow Light	Incandescent Lamp	Fluorescent Lamp	Metal Halide
Visible light radiation energy	15-20%	5%	23%	27%
Infrared radiation energy	0%	90%	36%	17%
UV radiation energy	0%	0%	0%	19%
Physiological effective energy	15-20%	<0.1%	<1%	<0.5%
Conclusion	Most Suitable	Suitable	Little suitable	Not Suitable

Certification of SG-01 LED Grow Light

CE RoHS

Note:

1. *Indoor use only.*
2. *Don't use in dripping water or dripping irrigation place to avoid the light damage.*
3. *Please select different lighting time which depends on different plant.*
4. *Please use the LED grow light in good ventilative environment to ensure the light works at higher performance.*
5. *Don't look at this light directly without wearing sunglasses when it is working.*
6. *Power socket should be grounded*

Attention: **Due to continuous improvement in design of this product, the specification may change.**

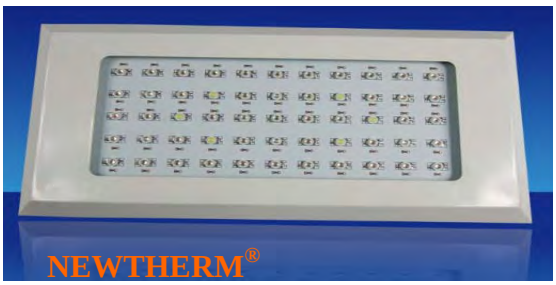
Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

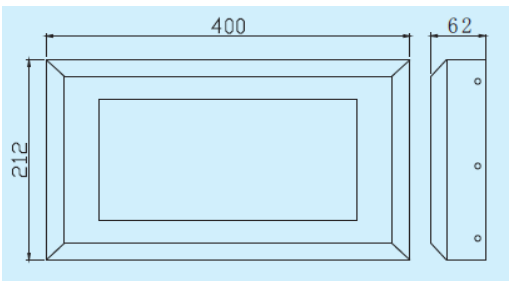
SG-02 LED Grow Light

Main Advantages of SG-02 LED Grow Light

1. SG-02 LED Grow Light produces great effect as 300W MH grow light. It saves 50%-75% electricity. It is a updated product with great energy-saving and carbon-reducing.
2. LED life-span reaches 50,000 hours.
3. Built-in power supply with Wide Voltage Range from AC85 to AC265V, no setup required, no reflector & ballast needed. No need any technical support for end users. Just plugs the LED grow light into AC85-265V power socket directly. It make its installation safely and simply.
4. It doesn't contain the harmful substance HPS & MH have, no hazardous waste to deal with. It makes our earth more clean and green.
5. All the parts are connected by standard connectors. Such connection is safer. Special connection design makes client to maintain the LED light conveniently.
6. SSP technology, lightning-proof and surge-proof are applied in the power design. Do not worry about lightning and electrical shock . SSP technology restricts output DC voltage to be never higher than the LED chips voltage ,so as to avoid the LEDs from shock of overvoltage .
7. SPC technology make sure that the light works more stably. Any LED cells with fault will not affect the working of other LED cells, and the whole light still works.
8. Welding LED directly onto AL-PCB instead of traditional PCB. aluminum is well known as excellent passive heat dissipation and the built-in fan is well known as good active heat dissipation. Both of the passive and active method are used in the LED grow light to be best solution of the heat dissipation.
9. Use 2W High Power LED for higher luminescent efficiency and less heat production

Product Pictures and Dimension of SG-02 LED Grow Light





Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

Application of SG-02 LED Grow Light



SG-02 LED Grow Light is suitable for the lighting in greenhouse, horticulture, Hydroponics, Farm, Flower Exhibition, Garden, Bonsai etc.

1. Ideal for all phases of plant growth, and works well in any indoor garden, either hydroponics or soil based.
2. Red and Orange are good for flowering and budding, blue is good for vegetative. Customers can choose the color wavelength and color ratio which is most suitable for their plant growth.
3. The lighting area and height above the plant can be changed. They depend on different plants and environment.

Technical Specification of SG-02 LED Grow Light

1. Power Factor(PF): >90% for AC220V power supply : >97% for AC110V power supply
2. Total Harmonic Distortion: <15%
3. Input AC : AC85 ~ 265V 50Hz/60Hz
4. Input Power: 100W-120W (it depend on different color ratio)
5. The number of LED(2W): 55 PCS
6. Color Wavelength: Blue: 430-445nm & 450-460nm, Red: 620-630nm&650-670nm, Orange: 610-615nm, Infrared Rays: 740-850nm, Ultra Violet: 380-400nm, White :2700K-10000K (to be selected by customer)
7. Color Ratio: Red: Blue: Orange=7:1 : 1 (or to be customized by customer)
8. Working environment temperature: -20℃~40℃
9. Working environment humidity: <90%
10. Storage temperature: -40℃~60℃
11. Working time: 10-14Hours /day
12. Package Size: 450*280mm*120mm
13. Gross Weight: 3.0KG Net Weight: 2.5KG

Parameters of 2W LEDs applied in the SG-02 LED Grow Light

LED (2W)	Alias	λd (nm)	λp (nm)	Δλd (nm)	Lm (lm)	Vf (V)	If (mA)	Pf (mW)
Ultra-Violet	UV	380	394	13.4	1.58	3.9	600	2340
Violet-Blue	440	447	440	18.2	13.3	4.03	600	2418
Royal blue	460	462	457.6	23	27	3.57	600	2220
Orange	615	618.0	625.8	16	62.5	2.4	600	1440
Red	630	628.5	636.2	16	63.2	2.6	600	1560
Deep Red	660	645.1	655.9	17.1	40.9	2.53	600	1518
Near-infrared	740	725	737	28.6	0.167*2	1.632	300*2	489.6*2
Middle-infrared	850	Test instrument unreachable			0	1.47	300*2	441.7*2

Note: *Above information is based on the test result and real parameters may be different with the above.*

Thermal Test of SG-02 LED Grow Light

Thermal Test Result of SG-02 at 600mA for LED Driver											
Date	Time	Heat Sink		AL-PCB		Leg of LED		Air		LED to Air	
		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
30th DEC	13:30	107.6	42	109.4	43	118.4	48	82.4	28	36	20
	14:00	105.8	41	113	45	122	50	90.5	32.5	31.5	17.5
	14:30	107.6	42	114.8	46	120.2	49	89.6	32	30.6	17
	15:00	109.4	43	113	45	120.2	49	89.6	32	30.6	17
	15:30	111.2	44	113	45	123.8	51	84.2	29	39.6	23
	16:00	114.8	44	114.8	46	122	50	86	30	36	20
	16:30	114.8	44	114.8	46	120.2	49	87.8	31	32.4	18
	17:00	114.8	44	116.6	47	125.6	52	86	30	39.6	22
	17:30	114.8	44	114.8	46	122	50	86	30	36	20
31st DEC	08:30	104	40	109.4	43	116.6	47	78.8	26	37.8	21
	09:00	102.2	39	104	40	114.8	46	77	25	37.8	21

Note:

1. *The temperature was tested from 13:30 30th DEC to 09:00 31st DEC.2010*
2. *In the whole LED light, the highest temperature area is located in LEDs.*
3. *The temperature arising between LED to Air variety from 17-23^{o}C. LED chips work under good condition.*
4. *The real temperature may be slightly different with the above testing result.*

LUX Parameter of SG-02 LED Grow Light

Note: *The above diagram from test is base on color ratio of Red(630nm):Blue(460nm):Orange(613nm)=7:1:1. The different color ratio will have different testing result.*

Parameter Comparison of SG-02 LED Grow Light and other Lights

Products name / Items	LED Grow Light	Incandescent Lamp	Fluorescent Lamp	Metal Halide
Visible light radiation energy	15-20%	5%	23%	27%
Infrared radiation energy	0%	90%	36%	17%
UV radiation energy	0%	0%	0%	19%
Physiological effective energy	15-20%	<0.1%	<1%	<0.5%
Conclusion	Most Suitable	Suitable	Little suitable	Not Suitable

Certification of SG-02 LED Grow Light

CE RoHS

Note:

1. *Indoor use only.*
2. *Don't use in dripping water or dripping irrigation place to avoid the light damage.*
3. *Please select different lighting time which depends on different plant.*
4. *Please use the LED grow light in good ventilative environment to ensure the light works at higher performance.*
5. *Don't look at this light directly without wearing sunglasses when it is working.*
6. *Power socket should be grounded*

Attention: Due to continuous improvement in design of this product, the specification may change.

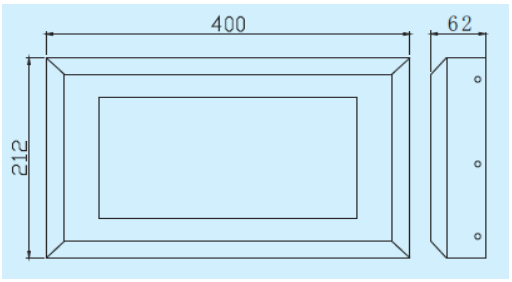
Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

SG-02B LED Grow Light

Main Advantages of SG-02B LED Grow Light

1. SG-02B LED Grow Light produces great effect as 400W MH grow light. It saves 50%-75% electricity. It is a updated product with great energy-saving and carbon-reducing.
2. LED life-span reaches 50,000 hours.
3. Built-in power supply with Wide Voltage Range from AC85 to AC265V, no setup required, no reflector & ballast needed. No need any technical support for end users. Just plugs the LED grow light into AC85-265V power socket directly. It make its installation safely and simply.
4. It doesn't contain the harmful substance HPS & MH have, no hazardous waste to deal with. It makes our earth more clean and green.
5. All the parts are connected by standard connectors. Such connection is safer. Special connection design makes client to maintain the LED light conveniently.
6. SSP technology, lightning-proof and surge-proof are applied in the power design. Do not worry about lightning and electrical shock . SSP technology restricts output DC voltage to be never higher than the LED chips voltage ,so as to avoid the LEDs from shock of overvoltage .
7. SPC technology make sure that the light works more stably. Any LED cells with fault will not affect the working of other LED cells, and the whole light still works.
8. Welding LED directly onto AL-PCB instead of traditional PCB. aluminum is well known as excellent passive heat dissipation and the built-in fan is well known as good active heat dissipation. Both of the passive and active method are used in the LED grow light to be best solution of the heat dissipation.
9. Use 2W High Power LED for higher luminescent efficiency and less heat production

Product Pictures and Dimension of SG-02B LED Grow Light



Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

Application of SG-02B LED Grow Light

SG-02B LED Grow Light is suitable for the lighting in greenhouse, horticulture, Hydroponics, Farm, Flower Exhibition, Garden, Bonsai etc.

1. Ideal for all phases of plant growth, and works well in any indoor garden, either hydroponics or soil based.
2. Red and Orange are good for flowering and budding, blue is good for vegetative. Customers can choose the color wavelength and color ratio which is most suitable for their plant growth.
3. The lighting area and height above the plant can be changed. They depend on different plants and environment.

Technical Specification of SG-02B LED Grow Light

1. Power Factor(PF): >90% for AC220V power supply : >97% for AC110V power supply
2. Total Harmonic Distortion: <15%
3. Input AC : AC85 ~ 265V 50Hz/60Hz
4. Input Power: 140W-160W (it depend on different color ratio)
5. The number of LED(2W): 80 PCS
6. Color Wavelength: Blue: 430-445nm & 450-460nm, Red: 620-630nm&650-670nm, Orange: 610-615nm, Infrared Rays: 740-850nm, Ultra Violet: 380-400nm, White :2700K-10000K (to be selected by customer)
7. Color Ratio: Red: Blue: Orange=7:1 : 1 (or to be customized by customer)
8. Working environment temperature: -20℃~40℃
9. Working environment humidity: <90%
10. Storage temperature: -40℃~60℃
11. Working time: 10-14Hours /day
12. Package Size: 450*280mm*120mm
13. Gross Weight: 3.5KG Net Weight: 3KG

Parameters of 2W LEDs applied in the SG-02B LED Grow Light

LED (2W)	Alias	λd (nm)	λp (nm)	Δλd (nm)	Lm (lm)	Vf (V)	If (mA)	Pf (mW)
Ultra-Violet	UV	380	394	13.4	1.58	3.9	600	2340
Violet-Blue	440	447	440	18.2	13.3	4.03	600	2418
Royal blue	460	462	457.6	23	27	3.57	600	2220
Orange	615	618.0	625.8	16	62.5	2.4	600	1440
Red	630	628.5	636.2	16	63.2	2.6	600	1560
Deep Red	660	645.1	655.9	17.1	40.9	2.53	600	1518
Near-infrared	740	725	737	28.6	0.167*2	1.632	300*2	489.6*2
Middle-infrared	850	Test instrument unreachable			0	1.47	300*2	441.7*2

Note: *Above information is based on the test result and real parameters may be different with the above.*

Thermal Test of SG-02B LED Grow Light

Thermal Test Result of CTG-10 at 600mA for LED Driver											
Date	Time	Heat Sink		AL-PCB		Leg of LED		Air		LED to Air	
		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
30th DEC	13:30	107.6	42	109.4	43	118.4	48	82.4	28	36	20
	14:00	105.8	41	113	45	122	50	90.5	32.5	31.5	17.5
	14:30	107.6	42	114.8	46	120.2	49	89.6	32	30.6	17
	15:00	109.4	43	113	45	120.2	49	89.6	32	30.6	17
	15:30	111.2	44	113	45	123.8	51	84.2	29	39.6	23
	16:00	114.8	44	114.8	46	122	50	86	30	36	20
	16:30	114.8	44	114.8	46	120.2	49	87.8	31	32.4	18
	17:00	114.8	44	116.6	47	125.6	52	86	30	39.6	22
	17:30	114.8	44	114.8	46	122	50	86	30	36	20
31st DEC	08:30	104	40	109.4	43	116.6	47	78.8	26	37.8	21
	09:00	102.2	39	104	40	114.8	46	77	25	37.8	21

Note:

1. *The temperature was tested from 13:30 30th DEC to 09:00 31st DEC.2010*
2. *In the whole LED light, the highest temperature area is located in LEDs.*
3. *The temperature arising between LED to Air variety from 17-23^{o}C. LED chips work under good condition.*
4. *The real temperature may be slightly different with the above testing result.*

LUX Parameter of SG-02B LED Grow Light

Note: *The above diagram from test is base on color ratio of Red(630nm):Blue(460nm):Orange(613nm)=7:1:1. The different color ratio will have different testing result.*

Parameter Comparison of SG-02B LED Grow Light and other Lights

Products name / Items	LED Grow Light	Incandescent Lamp	Fluorescent Lamp	Metal Halide
Visible light radiation energy	15-20%	5%	23%	27%
Infrared radiation energy	0%	90%	36%	17%
UV radiation energy	0%	0%	0%	19%
Physiological effective energy	15-20%	<0.1%	<1%	<0.5%
Conclusion	Most Suitable	Suitable	Little suitable	Not Suitable

Certification of SG-02B LED Grow Light

CE RoHS

Note:

1. *Indoor use only.*
2. *Don't use in dripping water or dripping irrigation place to avoid the light damage.*
3. *Please select different lighting time which depends on different plant.*
4. *Please use the LED grow light in good ventilative environment to ensure the light works at higher performance.*
5. *Don't look at this light directly without wearing sunglasses when it is working.*
6. *Power socket should be grounded*

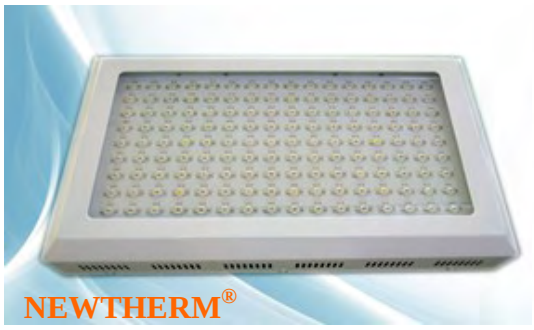
Attention: Due to continuous improvement in design of this product, the specification may change.

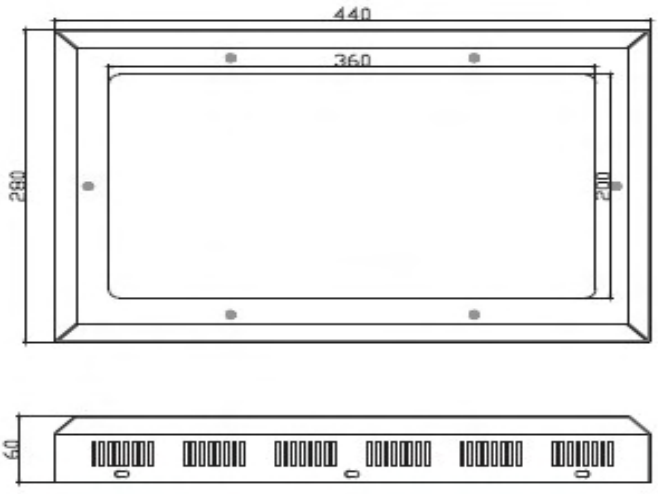
SG-02D LED Grow Light

Main Advantages of SG-02D LED Grow Light

1. SG-02D LED Grow Light produces great effect as 500W MH grow light. It saves 50%-75% electricity. It is a updated product with great energy-saving and carbon-reducing.
2. LED life-span reaches 50,000 hours.
3. Built-in power supply with Wide Voltage Range from AC85 to AC265V, no setup required, no reflector & ballast needed. No need any technical support for end users. Just plugs the LED grow light into AC85-265V power socket directly. It make its installation safely and simply.
4. It doesn't contain the harmful substance HPS & MH have, no hazardous waste to deal with. It makes our earth more clean and green.
5. All the parts are connected by standard connectors. Such connection is safer. Special connection design makes client to maintain the LED light conveniently.
6. SSP technology, lightning-proof and surge-proof are applied in the power design. Do not worry about lightning and electrical shock . SSP technology restricts output DC voltage to be never higher than the LED chips voltage ,so as to avoid the LEDs from shock of overvoltage .
7. SPC technology make sure that the light works more stably. Any LED cells with fault will not affect the working of other LED cells, and the whole light still works.
8. Welding LED directly onto AL-PCB instead of traditional PCB. aluminum is well known as excellent passive heat dissipation and the built-in fan is well known as good active heat dissipation. Both of the passive and active method are used in the LED grow light to be best solution of the heat dissipation.
9. Use 2W High Power LED for higher luminescent efficiency and less heat production

Product Pictures and Dimension of SG-02D LED Grow Light





Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

Application of SG-02D LED Grow Light

SG-02D LED Grow Light is suitable for the lighting in greenhouse, horticulture, Hydroponics, Farm, Flower Exhibition, Garden, Bonsai etc.

1. Ideal for all phases of plant growth, and works well in any indoor garden, either hydroponics or soil based.
2. Red and Orange are good for flowering and budding, blue is good for vegetative. Customers can choose the color wavelength and color ratio which is most suitable for their plant growth.
3. The lighting area and height above the plant can be changed. They depend on different plants and environment.

Technical Specification of SG-02D LED Grow Light

1. Power Factor(PF): >90% for AC220V power supply : >97% for AC110V power supply
2. Total Harmonic Distortion: <15%
3. Input AC : AC85 ~ 265V 50Hz/60Hz
4. Input Power: 240W ~ 300W (it depend on different color ratio)
5. The number of LED(2W): 144 PCS
6. Color Wavelength: Blue: 430-445nm & 450-460nm, Red: 620-630nm&650-670nm, Orange: 610-615nm, Infrared Rays: 740-850nm, Ultra Violet: 380-400nm, White :2700K-10000K (to be selected by customer)
7. Color Ratio: Red: Blue: Orange=7:1 : 1 (or to be customized by customer)
8. Working environment temperature: -20℃~40℃
9. Working environment humidity: <90%
10. Storage temperature: -40℃~60℃
11. Working time: 10-14Hours /day
12. Package Size: 495mm*382mm*150mm
13. Gross Weight: 5.60KG / Net Weight: 4.70KG

Parameters of 2W LEDs applied in the SG-02D LED Grow Light

LED (2W)	Alias	λd (nm)	λp (nm)	Δλd (nm)	Lm (lm)	Vf (V)	If (mA)	Pf (mW)
Ultra-Violet	UV	380	394	13.4	1.58	3.9	600	2340
Violet-Blue	440	447	440	18.2	13.3	4.03	600	2418
Royal blue	460	462	457.6	23	27	3.57	600	2220
Orange	615	618.0	625.8	16	62.5	2.4	600	1440
Red	630	628.5	636.2	16	63.2	2.6	600	1560
Deep Red	660	645.1	655.9	17.1	40.9	2.53	600	1518
Near-infrared	740	725	737	28.6	0.167*2	1.632	300*2	489.6*2
Middle-infrared	850	Test instrument unreachable			0	1.47	300*2	441.7*2

Note: *Above information is based on the test result and real parameters may be different with the above.*

Thermal Test of SG-02D LED Grow Light

Thermal Test Result of SG-02D at 600mA for LED Driver

Date	Time	Heat Sink		AL-PCB		Leg of LED		Air		LED to Air	
		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
30th DEC	13:30	107.6	42	109.4	43	118.4	48	82.4	28	36	20
	14:00	105.8	41	113	45	122	50	90.5	32.5	31.5	17.5
	14:30	107.6	42	114.8	46	120.2	49	89.6	32	30.6	17
	15:00	109.4	43	113	45	120.2	49	89.6	32	30.6	17
	15:30	111.2	44	113	45	123.8	51	84.2	29	39.6	23
	16:00	114.8	44	114.8	46	122	50	86	30	36	20
	16:30	114.8	44	114.8	46	120.2	49	87.8	31	32.4	18
	17:00	114.8	44	116.6	47	125.6	52	86	30	39.6	22
	17:30	114.8	44	114.8	46	122	50	86	30	36	20
31st DEC	08:30	104	40	109.4	43	116.6	47	78.8	26	37.8	21
	09:00	102.2	39	104	40	114.8	46	77	25	37.8	21

Note:

1. *The temperature was tested from 13:30 30th DEC to 09:00 31st DEC.2010*
2. *In the whole LED light, the highest temperature area is located in LEDs.*
3. *The temperature arising between LED to Air variety from 17-23^{o}C. LED chips work under good condition.*
4. *The real temperature may be slightly different with the above testing result.*

LUX Parameter of SG-02D LED Grow Light

Note: *The above diagram from test is base on color ratio of Red(630nm):Blue(460nm):Orange(613nm)=7:1:1. The different color ratio will have different testing result.*

Parameter Comparison of SG-02D LED Grow Light and other Lights

Products name / Items	LED Grow Light	Incandescent Lamp	Fluorescent Lamp	Metal Halide
Visible light radiation energy	15-20%	5%	23%	27%
Infrared radiation energy	0%	90%	36%	17%
UV radiation energy	0%	0%	0%	19%
Physiological effective energy	15-20%	<0.1%	<1%	<0.5%
Conclusion	Most Suitable	Suitable	Little suitable	Not Suitable

Certification of SG-02D LED Grow Light

CE RoHS

Note:

1. *Indoor use only.*
2. *Don't use in dripping water or dripping irrigation place to avoid the light damage.*
3. *Please select different lighting time which depends on different plant.*
4. *Please use the LED grow light in good ventilative environment to ensure the light works at higher performance.*
5. *Don't look at this light directly without wearing sunglasses when it is working.*
6. *Power socket should be grounded*

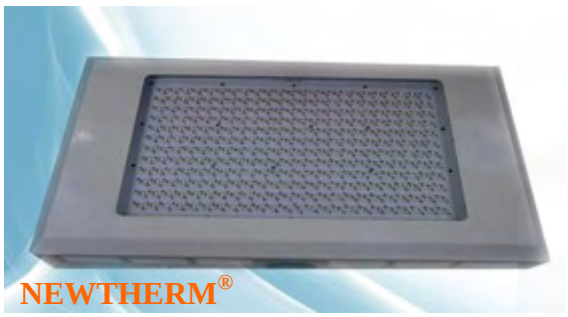
Attention: Due to continuous improvement in design of this product, the specification may change.

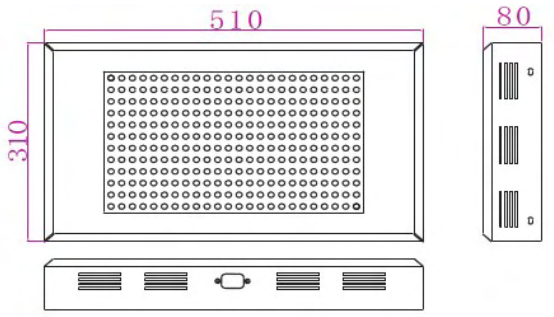
SG-04 LED Grow Light

Main Advantages of SG-04 LED Grow Light

1. SG-04 LED Grow Light produces great effect as 1,000W MH grow light. It saves 50%-75% electricity. It is a updated product with great energy-saving and carbon - reducing
2. LED life-span reaches 50,000 hours.
3. Built-in power supply with Wide Voltage Range from AC85 to AC265V, no setup required, no reflector & ballast needed. No need any technical support for end users. Just plugs the LED grow light into AC85-265V power socket directly. It make its installation safely and simply.
4. It doesn't contain the harmful substance HPS & MH have, no hazardous waste to deal with. It makes our earth more clean and green.
5. All the parts are connected by standard connectors. Such connection is safer. Special connection design makes client to maintain the LED light conveniently.
6. SSP technology, lightning-proof and surge-proof are applied in the power design. Do not worry about lightning and electrical shock . SSP technology restricts output DC voltage to be never higher than the LED chips voltage ,so as to avoid the LEDs from shock of overvoltage .
7. SPC technology make sure that the light works more stably. Any LED cells with fault will not affect the working of other LED cells, and the whole light still works.
8. Welding LED directly onto AL-PCB instead of traditional PCB. aluminum is well known as excellent passive heat dissipation and the built-in fan is well known as good active heat dissipation. Both of the passive and active method are used in the LED grow light to be best solution of the heat dissipation.
9. Use 2W High Power LED for higher luminescent efficiency and less heat production

Product Pictures and Dimension of SG-04 LED Grow Light





Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

Application of SG-04 LED Grow Light



SG-04 LED Grow Light is suitable for the greenhouse lighting, horticulture, Hydroponics, Farm, Flower Exhibition, Garden, Bonsai etc.

1. Ideal for all phases of plant growth, and works well in any indoor garden, either hydroponics or soil based.
2. Red and Orange are good for flowering and budding, blue is good for vegetative. Customers can choose the color wavelength and color ratio which is most suitable for their plant growth.
3. The lighting area and height above the plant can be changed. They depend on different plants and environment.

Technical Specification of SG-04 LED Grow Light

1. Power Factor(PF): >90% for AC220V power supply : >97% for AC110V power supply
2. Total Harmonic Distortion: <15%
3. Input AC : AC85 ~ 265V 50Hz/60Hz
4. Input Power: 480W ~ 600W (It depends on different color ratio.)
5. The number of LED(2W): 288 PCS
6. Color Wavelength: Blue: 430-445nm & 450-460nm, Red: 620-630nm & 650-670nm, Orange: 610-615nm, Infrared Rays: 740-850nm, Ultra Violet :380-400nm, White: 2700K-10000K (To be selected by customer)
7. Color Ratio: Red: Blue: Orange=7:1 : 1 (or to be customized by customer)
8. Working environment temperature: -20℃~40℃
9. Working environment humidity: <90%
10. Storage temperature: -40℃~60℃
11. Working time: 10-14Hours /day
12. Package Size: 580mm*385mm*162mm
13. Gross Weight: 11.3KG , Net Weight: 10.3KG

Parameters of 2W LEDs applied in the SG-04 LED Grow Light

LED (2W)	Alias	λd (nm)	λp (nm)	Δλd (nm)	Lm (lm)	Vf (V)	If (mA)	Pf (mW)
Ultra-Violet	UV	380	394	13.4	1.58	3.9	600	2340
Violet-Blue	440	447	440	18.2	13.3	4.03	600	2418
Royal blue	460	462	457.6	23	27	3.57	600	2220
Orange	615	618.0	625.8	16	62.5	2.4	600	1440
Red	630	628.5	636.2	16	63.2	2.6	600	1560
Deep Red	660	645.1	655.9	17.1	40.9	2.53	600	1518
Near-infrared	740	725	737	28.6	0.167*2	1.632	300*2	489.6*2
Middle-infrared	850	Test instrument unreachable			0	1.47	300*2	441.7*2

Note: *Above information is based on the test result and real parameter may be different with the above.*

Thermal Test of SG-04 LED Grow Light

Thermal Test Result of SG-04 at 600mA for LED Driver											
Date	Time	Heat Sink		AL-PCB		Leg of LED		Air		LED to Air	
		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
30th DEC	13:30	107.6	42	109.4	43	118.4	48	82.4	28	36	20
	14:00	105.8	41	113	45	122	50	90.5	32.5	31.5	17.5
	14:30	107.6	42	114.8	46	120.2	49	89.6	32	30.6	17
	15:00	109.4	43	113	45	120.2	49	89.6	32	30.6	17
	15:30	111.2	44	113	45	123.8	51	84.2	29	39.6	23
	16:00	114.8	44	114.8	46	122	50	86	30	36	20
	16:30	114.8	44	114.8	46	120.2	49	87.8	31	32.4	18
	17:00	114.8	44	116.6	47	125.6	52	86	30	39.6	22
	17:30	114.8	44	114.8	46	122	50	86	30	36	20
31st DEC	08:30	104	40	109.4	43	116.6	47	78.8	26	37.8	21
	09:00	102.2	39	104	40	114.8	46	77	25	37.8	21

Note:

1. *The temperature was tested from 13:30 30th DEC to 09:00 31st DEC.2010*
2. *In the whole LED light, the highest temperature area is located in LEDs.*
3. *The temperature arising between LED to Air variety from 17-23^{o}C. LED chips work under good condition.*
4. *The real temperature may be slightly different with the above testing result.*

LUX Parameter of SG-04 LED Grow Light

Note: *The above diagram from test is based on color ratio of Red(630nm):Blue(460nm):Orange(613nm)=7:1:1. The different color ratio will have different testing result.*

Parameter Comparison of SG-04 LED Grow Light and other Lights

Products name / Items	LED Grow Light	Incandescent Lamp	Fluorescent Lamp	Metal Halide
Visible light radiation energy	15-20%	5%	23%	27%
Infrared radiation energy	0%	90%	36%	17%
UV radiation energy	0%	0%	0%	19%
Physiological effective energy	15-20%	<0.1%	<1%	<0.5%
Conclusion	Most Suitable	Suitable	Little suitable	Not Suitable

Certification of SG-04 LED Grow Light

CE RoHS

Note:

1. *Indoor use only.*
2. *Don't use in dripping water or dripping irrigation place to avoid the light damage.*
3. *Please select different lighting time which depends on different plant.*
4. *Please use the LED grow light in good ventilative environment to ensure the light works at higher performance.*
5. *Don't look at this light directly without wearing sunglasses when it is working.*
6. *Power socket should be grounded*

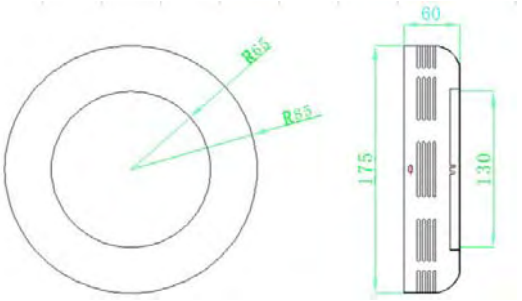
Attention: Due to continuous improvement in design of this product, the specification may change.

SG-05 LED Grow Light

Main Advantages of SG-05 LED Grow Light

1. SG-05 LED Grow Light produces great effect as 110W MH grow light. It saves 50%-75% electricity. It is a updated product with great energy-saving and carbon-reducing.
2. LED life-span reaches 50,000 hours.
3. Built-in power supply with Wide Voltage Range from AC85 to AC265V, no setup required, no reflector & ballast needed. No need any technical support for end users. Just plugs the LED grow light into AC85-265V power socket directly. It make its installation safely and simply.
4. It doesn't contain the harmful substance HPS & MH have, no hazardous waste to deal with. It makes our earth more clean and green.
5. All the parts are connected by standard connectors. Such connection is safer. Special connection design makes client to maintain the LED light conveniently.
6. SSP technology, lightning-proof and surge-proof are applied in the power design. Do not worry about lightning and electrical shock . SSP technology restricts output DC voltage to be never higher than the LED chips voltage ,so as to avoid the LEDs from shock of overvoltage .
7. SPC technology make sure that the light works more stably. Any LED cells with fault will not affect the working of other LED cells, and the whole light still works.
8. Welding LED directly onto AL-PCB instead of traditional PCB. aluminum is well known as excellent passive heat dissipation and the built-in fan is well known as good active heat dissipation. Both of the passive and active method are used in the LED grow light to be best solution of the heat dissipation.

Product Pictures and Dimension of SG-05 LED Grow Light



Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com

Application of SG-05 LED Grow Light

SG-05 LED Grow Light is suitable for the greenhouse lighting, horticulture, Hydroponics, Farm, Flower Exhibition, Garden, Bonsai etc.

1. Ideal for all phases of plant growth, and works well in any indoor garden, either hydroponics or soil based.
2. Red and Orange are good for flowering and budding, blue is good for vegetative. Customers can choose the color wavelength and color ratio which is most suitable for their plant growth.
3. The lighting area and height above the plant can be changed. They depend on different plants and environment.

Technical Specification of SG-05 LED Grow Light

1. Power Factor(PF): >90% for AC220V power supply : >97% for AC110V power supply
2. Total Harmonic Distortion: <15%
3. Input AC : AC85 ~ 265V 50Hz/60Hz
4. Input Power: 47W ~ 50W (it depends on different color ratio.)
5. The number of LED(1W): 50 PCS
6. Color Wavelength: Blue :430-445nm & 450-460nm, Red: 620-630nm & 650-670nm, Orange: 610-615nm, Infrared Rays: 740-850nm, Ultra Violet: 380-400nm, White: 2700K-10000K (To be selected by customer)
7. Color Ratio: Red: Blue: Orange=7:1:1 (or to be customized by customer)
8. Working environment temperature: -20℃~40℃
9. Working environment humidity: <90%
10. Storage temperature: -40℃~60℃
11. Working time: 10-14Hours /day
12. Package Size: 220mm*220mm*170mm
13. Gross Weight: 2.0KG Net Weight: 1.25KG

Parameters of 1W LEDs applied in the SG-05 LED Grow Light

LED (1W)	Alias	λd (nm)	λp (nm)	Δλd (nm)	Lm (lm)	Vf (V)	If (mA)	Pf (mW)
Ultra-Violet	UV	380	394	13.4	0.31	3.45	350	1208
Violet-Blue	440	447	440	18.2	9.57	2.97	350	1040
Royal blue	460	462	457.6	23	12.15	3.18	350	1113
Orange	615	618.0	625.8	16	42.7	2.01	350	703.5
Red	630	628.5	636.2	16	43.63	2.15	350	752.5
Deep Red	660	645.1	655.9	17.1	21.83	2.05	350	717.5
Near-infrared	740	725	737	28.6	0.43	1.83	350	640.5
Middle-infrared	850	Test instrument unreachable			0	1.47	350	514.5

Note: *Above information is based on the test result and real parameter may be different with the above.*

Thermal Test of SG-05 LED Grow Light

Thermal Test Result of SG-05 at 350mA for LED Driver											
Date	Time	Heat Sink		AL-PCB		Leg of LED		Air		LED to Air	
		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
30th DEC	13:30	107.6	42	109.4	43	118.4	48	82.4	28	36	20
	14:00	105.8	41	113	45	122	50	90.5	32.5	31.5	17.5
	14:30	107.6	42	114.8	46	120.2	49	89.6	32	30.6	17
	15:00	109.4	43	113	45	120.2	49	89.6	32	30.6	17
	15:30	111.2	44	113	45	123.8	51	84.2	29	39.6	23
	16:00	114.8	44	114.8	46	122	50	86	30	36	20
	16:30	114.8	44	114.8	46	120.2	49	87.8	31	32.4	18
	17:00	114.8	44	116.6	47	125.6	52	86	30	39.6	22
	17:30	114.8	44	114.8	46	122	50	86	30	36	20
31st DEC	08:30	104	40	109.4	43	116.6	47	78.8	26	37.8	21
	09:00	102.2	39	104	40	114.8	46	77	25	37.8	21

Note:

1. *The temperature was tested from 13:30 30th DEC to 09:00 31st DEC.2010*
2. *In the whole LED light, the highest temperature area is located in LEDs.*
3. *The temperature arising between LED to Air variety from 17-23°C. LED chips work under good condition.*
4. *The real temperature may be slightly different with the above testing result.*

LUX Parameter of SG-05 LED Grow Light

Note: *The above diagram from test is based on color ratio of Red(630nm):Blue(460nm):Orange(613nm)=7:1:1. The different color ratio will have different testing result.*

Parameter Comparison of SG-05 LED Grow Light and other Lights

Products name / Items	LED Grow Light	Incandescent Lamp	Fluorescent Lamp	Metal Halide
Visible light radiation energy	15-20%	5%	23%	27%
Infrared radiation energy	0%	90%	36%	17%
UV radiation energy	0%	0%	0%	19%
Physiological effective energy	15-20%	<0.1%	<1%	<0.5%
Conclusion	Most Suitable	Suitable	Little suitable	Not Suitable

Certification of SG-05 LED Grow Light

CE RoHS

Note:

1. *Indoor use only.*
2. *Don't use in dripping water or dripping irrigation place to avoid the light damage.*
3. *Please select different lighting time which depends on different plant.*
4. *Please use the LED grow light in good ventilative environment to ensure the light works at higher performance.*
5. *Don't look at this light directly without wearing sunglasses when it is working.*
6. *Power socket should be grounded*

Attention: **Due to continuous improvement in design of this product, the specification may change.**

Tel:0086-591-87610093, 87614264 Fax:0086-591-83640189,87279269 E-mail:qqmd@fcanwell.com