

NEW WISDOM Miner's lamp booklet

KL5M LED light Li-ion battery miner's safety lamp
 GWB-15 portable charger
 KCLA series charger rack for Li-ion battery miner's lamp
 Usage, maintenance and safety notes of the miner's lamp
 KL5M part drawing
 CE Certification KL5M
 CE Certification GWB-15

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KL5M LED light Li-ion battery miner's safety Lamp

New KL5M is produced under production technical of compliance with RoHS. We have successfully made the KL5M LED light Li-ion battery miner's lamp in 2003. After continues improvements, the newly designed KL5M cap lamp in 2006 July has reached a very high level. We use the LED light especially designed for us with the luminous flux of 70Lm (60-80Lm). The lighting degree is reaching 5000Luxes (in distance of 1m). LED antistatic capacity is reaching 8000V. The new design of the LED match with the new radiator structure solved the heat of the LED light from the foundation. We use the button switch in the lamp. The button is completed sealed with a special construction design. We use the LiMn2O4 battery of soft packing which further improved the safety usage. We use Makrolon material of the German brand—Bayer, to make the lamp plastic housing, which make the view of the lamp high quality feeling and looking. The new lamp has been used a new way to fix the cable which improved the drag resistance of the cable. In a word, the NEW WISDOM KL5M always chases to be the best in the world!



Product features:

Safety: In a sealed battery case, the product has a short-circuit protection, LED light head lamp and anti-static housing which make it explosion-proof. The miner's lamp is reasonable tool for the coal miners.

Reliability: The tough housing, the optimized structure design, the solid LED light that uses high efficient IC drivers, make the product durable and strong. The lamp is capable to endure at strong power attacked, the perfect of protection for Li-ion battery over charge/discharge design strengthen the reliability of the lamp. The miner's lamp is very suitable to work under bad environment of the coal mine.

Portability: Small in size, light in weight, portable to carry, free of maintenance, simple charging, easy usage. The miner's lamp has received many praises from the miners.

Efficiency: The LED lamp is very bright of luminous flux 70Lm. The minimum luminous intensity is 3000-6000Lux (in distance of 1m). This intensity is maintained from the beginning of the shift to the end of the shift. It can last for 15 hours of continuous use. It has a life of 800 cycles.

Environmental: The miner's lamp is made from environmental Li-ion battery and other environmental materials. So the miner's lamp is a very good green product.

Economy: The lamp is used high efficient and high power LED as a light. It is used high efficient, environmental LiMn2O4 battery as power source. It needs not to replace the light and is free maintenance battery. It makes the economy benefit of this lamp is much better than the traditional miner's lamp.

Technical parameter and specification:

Features	KL5M Specifications
Rated capability	>5Ah(LiMn2O4 Li-ion battery)
Rated voltage	3.6V
Continuous discharging time	15h(12-20h)
Main light LED Working voltage	3.3V
Main light LED Working current	0.35A(0.33-0.39A)
Main light Power	1W
Main light Luminous flux	80Lm(70-90Lm)
Lamp lighting degree Initial Lighting degree	6000Lux (distance in 1 m)
Lamp lighting degree Lighting degree in 11 hours	3000Lux (distance in 1 m)
Main light Usage life hour	>30000h
Accessory light Power	0.4W
Accessory light Usage life hour	>20000h
Short circuit protect time	<15ms

Usage duration of battery (recharges)	1200 recharges (in reasonable working condition)
Charging time	6h-10h
Dimensions	78x31x79mm (size of the Li-ion battery)
Weight	0.6kg

GWB-15 Portable Charger

The GWB-15 Portable Charger is a special charger for our Li-ion battery miner's lamp. It is very reliable and efficient. It is small in size, light in weight and convenient to carry. The newly designed GWB-15 portable charger is more reliable and nice looking. Optimized the circuit board design has improved the safety and reliability. Its shell is made from the precise and nice looking aluminum alloy material.

Charging theory:

Constant current constant voltage charging, the charging current is 1000mA \pm 100mA, voltage is 4.2V \pm 0.05V, charging time is about 6-12 hours. The circuit designed with perfect watching and controlling system, able to automatically watch and control charging process. At the beginning of charging it is constant current charging at 1000mA \pm 100mA, the charger indicator is red color. When charging voltage reaching 4.2V, automatically turn to constant voltage charging, at this moment the battery is charged about 70%, current is starting decrease step by step. When the battery is charged enough it automatically powered off to stop charging and charger indicator display as green color. (Note: you can charge at any time, no need to wait to charge after use up the power, bring forward charging is better for prolonging the life span of the battery).

Technical Specifications:

1. Input: AC110V-240V, 50-60Hz
2. Output: DC 4.20 \pm 0.05V, 1000mA \pm 100mA
3. Size: 125x55x80mm; weight: 0.3kg

Usage guide:

1. This charger is used high efficiency switch power, fit for wide input voltage 110V- 240V, 50Hz-60Hz.
2. Please connect with power then start charging, the charger indicator light will turn green when it is connecting with the power.
3. Put the head lamp into the plug of the charger; turn 180 degrees in clockwise to make the anode firmly. Now the charger indicator light will be in red color, means it is under charging.
4. During the charging time, the charger indicator light will turn red first, finally charged enough it turn green. It is finished charging. The charging time is 6-12 hours.

GWB-15



GWB-15



Packing of the KL5M and GWB-15

NAME	DESCRIPTION	SPECIFICATION	PACKING	REMARK
KL5M	LED light Unit Li-ion battery miner's Lamp	78x31x79mm(battery), 06kg	43.5x36x21cm, 20pcs, 14kg	Carton
GWB-15	Single unit portable charger 110-240V, 60-50Hz	125x55x80mm, 0.30kg	43.5x36x21cm, 30pcs, 11kg	Carton

KCLA Series Charger Rack for Li-ion battery Miner's lamp

KCLA series charger rack is specially designed and made for multi-charge necessary of the Li-ion battery miner's

lamp. The new charger rack is used optimized circuit design and added input power protective system. This makes the charger rack withstand the over voltage of 280V and lower voltage than 70V by cut off the main power and when voltage turn back to 95V-265V it will normally offer power for the charger rack. This point makes our charger rack more and more suitable to the complicated and changeable conditions. The frames are made by numerical control machine which makes it is precise and good looking than before.

Features:

- We have applied the advanced switched mode power supply, no power supply transformer; automatically complete the charging process, easy controlling and maintenance, save time and resource, save cost, bring the mine good economy benefit.
- to watch and control with each unit individually. Automatically transform from constant current to constant voltage; and to watch and control with the voltage and current continually, automatically stop charging when watch with the full capacity.
- the charging it is high efficiency and save energy with a little rise of the temperature in the Li-ion battery. So it is better for longer the life of the lamp by using our charger equipment.
- special circuit design makes it fit for wide range voltage input, this makes the charger rack withstand the over voltage of 280V and lower voltage than 70V by cut off the main power and when voltage turn back to 95V-265V it will normally offer power for the charger rack, require lowly for the power quality, can well work in the fluctuate power net.

Charging theory, for each unit:

Constant current constant voltage charging, the charging current is 1000mA \pm 100mA, voltage is 4.2V \pm 0.05V, charging time is about 6-12 hours. The circuit designed with perfect watching and controlling system, able to automatically watch and control charging process. At the beginning of charging it is stable current charging at 1000mA \pm 100mA, the charger indicator is red color. When charging voltage reaching 4.2V, automatically turn to stable voltage charging, at this moment the battery is charged about 70%, at this moment, the charger indicator start turn into orange color and current is reduced step by step. When the battery is charged enough it automatically powered off to stop charging and charger indicator display as green color. (Note: you can charge at any time, no need to wait to charge after use up the power, bring forward charging is better for prolonging the life span of the battery).



KCLA-24
24 units united compact style charger rack



Technology index:

Number	Input	Output	Total Power	Capacity
KCLA-102	110V -240V \pm 20%, 50-60Hz	4.2V \pm 0.05V, 1Ax102	850W	102 units
KCLA-60	110V -240V \pm 20%, 50-60Hz	4.2V \pm 0.05V, 1Ax60	510W	60 units
KCLA-36	110V -240V \pm 20%, 50-60Hz	4.2V \pm 0.05V, 1Ax36	306W	36 units
KCLA-24	110V -240V \pm 20%, 50-60Hz	4.2V \pm 0.05V, 1Ax24	215W	24 units
KCLA-12	110V -240V \pm 20%, 50-60Hz	4.2V \pm 0.05V, 1Ax12	102W	12 units

We can make the rack accord to your need, for different size and recharge capacity

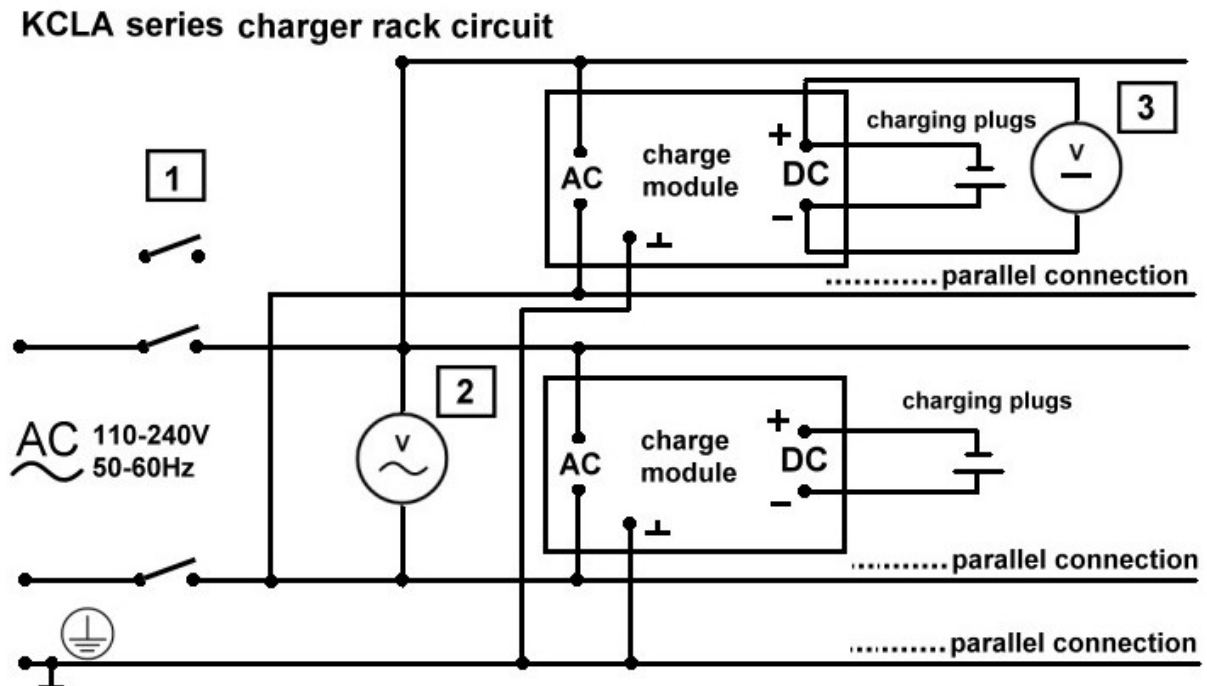
Number	DESCRIPTION	CHARGER RACK	PACKING	REMARK
KCLA-102	102 units Li-ion battery miner's lamp charger rack	185x36x171cm, 130kg	192x176x41cm, 230kg	wooden case
KCLA-60	60 units Li-ion battery miner's lamp charger rack	115x36x171cm, 95kg	122x176x41cm, 156kg	wooden case
KCLA-36A	36 units united compact style charger rack	86x98x23cm, 47kg	88x100x25cm, 53kg	Carton
KCLA-24A	24 units united compact style charger rack	58x98x23cm, 34kg	60x100x25cm, 38kg	Carton

Usage guide:

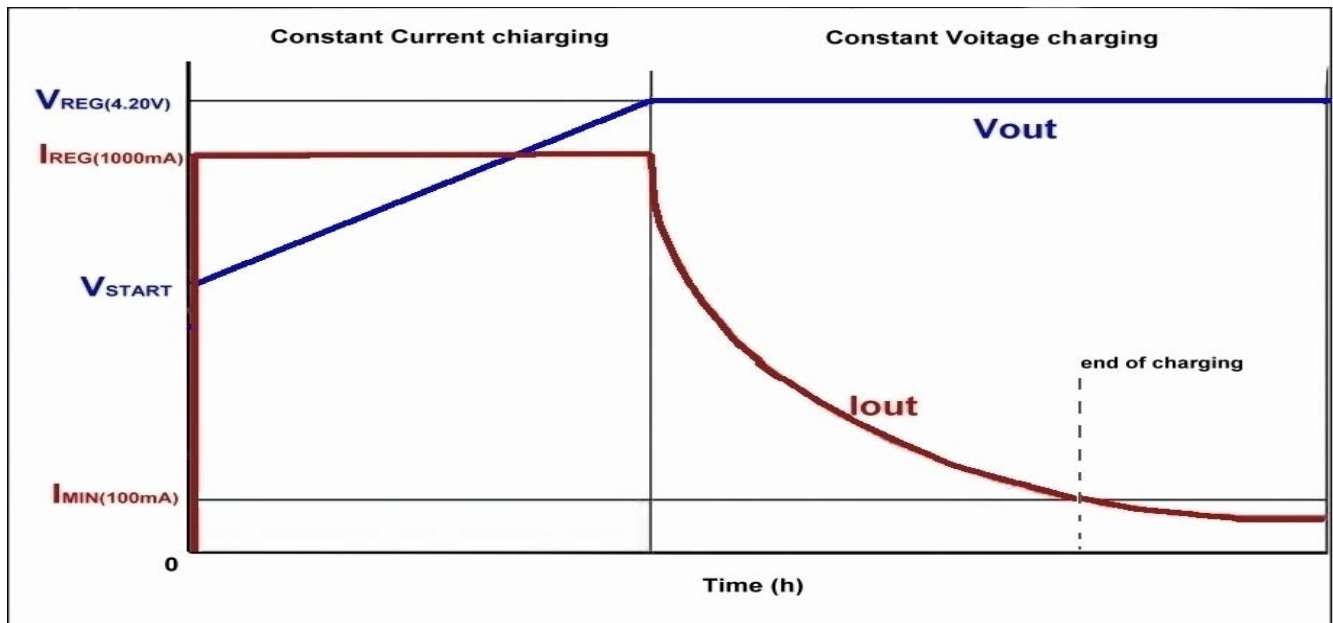
- in the initial usage, please make sure if the circuit are connected to each point, all the parts are not loosen or damaged in the carrying or shaking. When you make sure there's everything normal then you can start to use it.
- Please connect the 110V -240V $\pm 10\%$, 50-60Hz power through the air switch to connect power connector post of the rack, Please make sure correctly connect firmly. When you are setting up please let power off. (Air switch, and cable etc simple equipments necessary for user self-prepare.)
- In the initial usage, please connect the power to test if the rack works normally. When testing please don't add anything else on it. When the power is on, the input voltage displayer will display the correct voltage; all the charger indicators are in green color, it means the charger is almost ready. For further test, put the lamps necessary to charge onto the charge point, turn 180° clockwise to make the charger and the lamp firmly connect with the cathode and anode. And the charger indicator is red color means this unit normally charging. Use the same way to test other points. Now you can use the charge rack after testing all the points.
- When charging, if the capacity is different, the charging time is different, the charger indicators may not display exact the same colors. When the charger indicator is green color, it means the lamp is finished charging. The normal charging time is 6 to 12h.

Notes:

- Ensure that the supply voltage does not exceed the rated voltage otherwise charger will action protective system and automatically cut off the power then you cannot charge.
- If the power off during the charging please don't worry, now when it comes the power it will continue charging. No need to remove the lamp as before.
- Should the charging time be longer than the normal charging time, please check for any loose connections between the lamp and the rack and inside the rack.
- Li-ion battery is strictly to the charger. They require high precise in the charging voltage, charging current. And different manufacture's have different parameter in the Li-ion battery miner's lamp. Please try to use our chargers for our lamps.

Charger rack design picture:

Charging theory of our charging equipment



Usage, maintenance and safety notes of the miner's lamp:

The Li-ion battery:

- The Li-ion battery as a unit integrate battery, it is made from LI, NI, MN, CO and etc. compound oxide as the anode, and the cathode is made from the graphite and coke etc material.
- In the middle is the septum which made from the PP/PE/PP etc compound membranes. After filling the anhydrous electrolyte then the whole battery house is sealed.

The head lamp

The head lamp is including the house, LED, spherical reflector, and lamp headpiece glass convex, the connection of charge of anode and cathode and the power button.

User guide

1. preparation before using

Inspect all the lamps for any damage before using them. Also ensure that all the documents such as the technical specifications booklet, the user's guide and the production certificate are in place.

2. initial in charging

Li-ion battery need not for initial charging, they can be used after daily charging.

3. daily charge

daily charge is based the constant current, constant voltage fundamental (CC/CV), if charge on the charge rack, the charging voltage is $4.2 \pm 0.05V$, the charging current is 1A at the beginning and drops to almost zero (less than 0.1A) at the end of the charge.

The step as following:

- When the lamps reach the charge room, put them on the charge rack one by one---put the charging point of the lamp on the plugs of the rack and turn 180° clockwise till the charger and the lamp firmly connect with the cathode and anode. The charger LED indicator turn red means the charging is on normally.
- The time of daily charging: the 5Ah Li-ion battery is about 6 to 10 hours. At the end of charging, the charger LED indicator should turn to green color.

4. notes in charging:

- Generally the miner's lamp which is normally discharged, the charging current is 1A and the charger indicator is red color in the beginning. If exceptional lamp the charging current is pretty small or the charger indicator is not in red color (green color), please check if poor contact between the charger and the head lamp.
- You don't need to remove the lamps from the charging rack even during holidays. Neither do you need to switch off the power to the charger. The Li-ion battery over-charge protection system will automatically cut off power to the charging circuit to protect the battery from any damage due to over charging.

5. notes in the daily usage of the lamp:

- a. When the lamp "short circuits" during use, the protection circuit will immediately cut off power from the lamp within 15ms. After the fault has been rectified, the lamp is safe for use.
- b. Please do not store lamps in an environment with temperature above 60°C.
- c. The lamps should be stored in the low temperature and dried environment. If you need to stock them for a long time, please charge them once every six month to 50% capacity.

Maintenance

You are not allowed to open the lamp. If you must open the lamp to check and fix it, please open it following the steps below. However, the parts of the Li-ion battery are in a sealed housing and must not be opened by any means. Should there be something wrong with the battery, please contact the manufacturer. DO NOT attempt to fix the battery by yourself. The LED light is durable and as such may not be opened if working properly.

1. **Open the head lamp:** Use the triangle key to unscrew the triangle safety screw to open the head lamp cover.
2. **Parting steps:** Part the parts one by one: the head lamp cover glass, the sealed ring of the head lamp cover, the light power united parts. You now have access to the inside of the head lamp.
3. **Checking inside of the head lamp:** After parting the head lamp parts you can check the inside of the head lamp now.
4. **Checking charging connection:** Use the furcation screw puller to roll down the screw on the charging connection, put down the charging connection, take out inside little cap clip, secure spring piece, charger switch and the insulated plastic piece. To check the charge connection point if in good situation.
5. **Checking main cable:** Use the spanner to put down the screw which firm the cable with the head lamp, use the screwdriver to pull down the welding piece in the edge of the cable, loosen the drag resistance cord, then you can put down the cable from the head lamp. If the cable inside the engagement of the head lamp is damage, please cut the damage part and cut down about 30mm of the new rubber protective bushing, to make a new engagement twist in the place 8mm from the top of the cable. Weld new welding piece on the top of the cable, and then connect with anode and cathode, be careful not to swap the terminals.
6. After checking as above steps, assemble the head lamp backwards.

Handling faults

If there's happen abnormal situation in the using of the lamps, please take a serious checking to find out the cause and handle it. The normal steps as following:

1. lower capacity or not enough working hours:

cause	Handling method
Not charge enough	Check the charge points first then charge in the regulate way
KL5M: working current is 0.35A	KL5M miner's lamp normally is not needed to replace the LED.

2. current is too low or no current in charging

Cause	Handling method
Loose in the connection points so increase the resistance	Checking all the connection point and fix the fault point
Cut off inside the cable	Ask the manufacture for fix for most of the lamp except the cable connect with the lamp can fix by yourself

3. the charging current is still the same high in the end of charging, storage battery is heated

cause	Handling method
bad insulated in the outside of the lamp and cause short circuit	Check the function of the insulated and other places which possible to cause short circuit
Short circuit inside the storage battery	Ask the manufacture for fix for most of the lamp except the cable connect with the lamp can fix by yourself
Inside the head lamp the anode and cathode connect with wrong way	Correct the connect way of anode and cathode

4. the head lamp can't rotate freely on charge plug

This is because the charge switch inside the head lamp is broken. When handling it, please remove the screw from the cap clip first then remove the cap clip. Replace the charge switch and re-assemble the unit.

KL5M part drawing

NEW WISDOM KL5M PART DRAWING
for KL5M since 2006.07
parts for the head lamp

1. head lamp cover

2. head lamp glass

3. sealed ring of the head lamp cover

4. reflector

5. LED light (main LED and accessory LED)

6. radiator

7. button united parts

8. main circuit board

9. head lamp shell

10. nut, mat, sealed ring to fix the cable

11. cap lamp clip united parts

12. lock screw of the head lamp cover

13. main cable

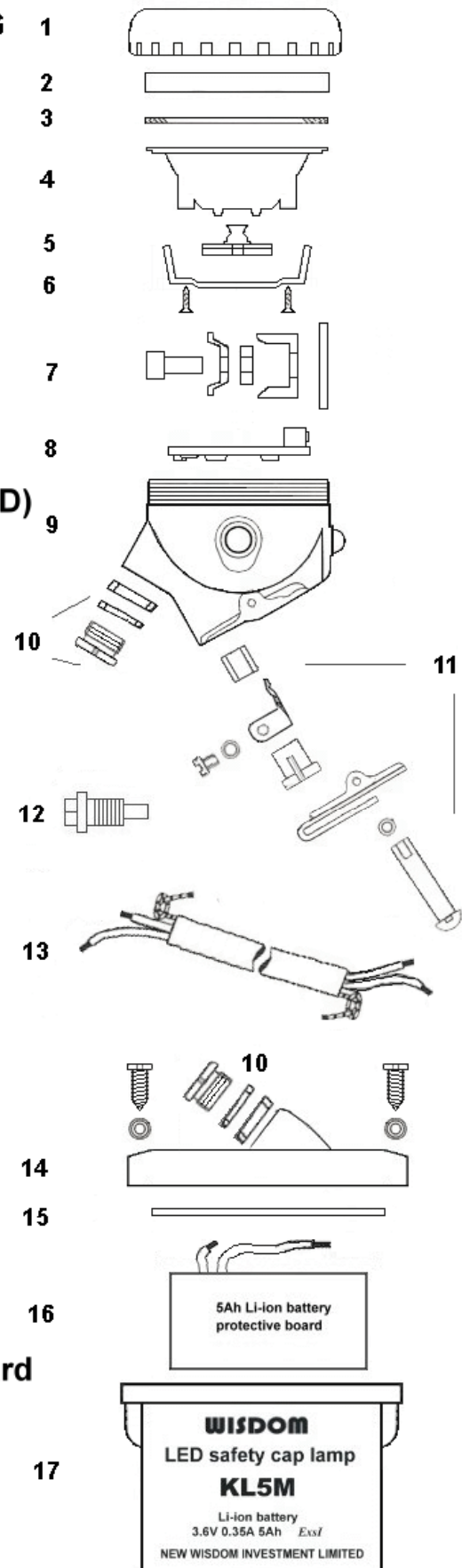
14. cover of the battery shell

15. sealed ring of the battery shell

16. 5Ah Li-ion battery with protective board

17. battery shell

2006.8.8



CE Certification KL5M


Bontek Compliance Laboratory

CE Certification of Conformity

Certification number: BCT06KC068S Report number: BCT06KR068S
Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant: NEW WISDOM INVESTMENT LIMITED
4-306, Xianglixincun, Hongli West Road, Shenzhen, China

Manufacturer: NEW WISDOM INVESTMENT LIMITED
Building A1-4, Shenbao Industry Park, Longgang district, Shenzhen, China

Product: Miner's cap lamp
Model: KL5M
Power rating: Input: 3.3VDC 0.35A

And, in accordance with the following Applicable Directives:

94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment

That this product has been assessed against the following Applicable Standards;

ATEX EN 60079- 0: 2004 Electrical apparatus for explosive gas atmospheres general requirement

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION OF CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by: 


Andrew He Date of issued: November 1, 2006

Rm 802-804, Jinmin Bld., Zizhu 6th Rd., Zhuzhi Lin, Futian, Shenzhen 518040, Guangdong, P. R. China
Tel: 86-755-82871080 Fax: 86-755-82871368 Http://www.bontek.com.cn


Bontek Compliance Laboratory

CE Certification of Conformity

Certification number: BCT06KC070S Report number: BCT06KR070S
Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant: NEW WISDOM INVESTMENT LIMITED
4-306, Xianglixincun, Hongli West Road, Shenzhen, China

Manufacturer: NEW WISDOM INVESTMENT LIMITED
Building A1-4, Shenbao Industry Park, Longgang district, Shenzhen, China

Product: Miner's cap lamp
Model: KL5M
Power rating: Input: 3.3VDC 0.35A

And, in accordance with the following Applicable Directives:

94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment

That this product has been assessed against the following Applicable Standards;

ATEX EN 62013-1: 2002 Cap lights for use in miners susceptible to firedamp general requirements — construction and testing in relation to the risk of explosion

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION OF CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by: 


Andrew He Date of issued: November 1, 2006

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Tel: 86-755-82871080 Fax: 86-755-82871368 Http://www.bontek.com.cn


Bontek Compliance Laboratory

CE Certification of Conformity

Certification number: BCT06KC071S Report number: BCT06KR071S
Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant: NEW WISDOM INVESTMENT LIMITED
4-306, Xianglixincun, Hongli West Road, Shenzhen, China

Manufacturer: NEW WISDOM INVESTMENT LIMITED
Building A1-4, Shenbao Industry Park, Longgang district, Shenzhen, China

Product: Miner's cap lamp
Model: KL5M
Power rating: Input: 3.3VDC 0.35A

And, in accordance with the following Applicable Directives:

94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment

That this product has been assessed against the following Applicable Standards;

ATEX EN 50033: 1991 Specification for construction and testing of miners' cap lamps in relation to the risk of explosions, for mines susceptible to firedamp

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION OF CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by: 


Andrew He Date of issued: November 1, 2006

Rm 802-804, Jinmin Bld., Zizhu 6th Rd., Zhuzhi Lin, Futian, Shenzhen 518040, Guangdong, P. R. China
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Bontek Compliance Laboratory

CE Certification of Conformity

Certification number: BCT06KC069S Report number: BCT06KR069S
Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant: NEW WISDOM INVESTMENT LIMITED
4-306, Xianglixincun, Hongli West Road, Shenzhen, China

Manufacturer: NEW WISDOM INVESTMENT LIMITED
Building A1-4, Shenbao Industry Park, Longgang district, Shenzhen, China

Product: Miner's cap lamp
Model: KL5M
Power rating: Input: 3.3VDC 0.35A

And, in accordance with the following Applicable Directives:

94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment

That this product has been assessed against the following Applicable Standards;

ATEX EN 50020: 2002 Electrical apparatus for potentially explosive atmospheres- Intrinsic safety "i"

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION OF CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by: 


Andrew He Date of issued: November 1, 2006

Rm 802-804, Jinmin Bld., Zizhu 6th Rd., Zhuzhi Lin, Futian, Shenzhen 518040, Guangdong, P. R. China
Tel: 86-755-82871080 Fax: 86-755-82871368 Http://www.bontek.com.cn

CE Certification GWB-15



Bontek Compliance Laboratory

CE Certificate of Conformity

Certification number: BCT07AC-044S Report number: BCT07AR-044S
Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant: **NEW WISDOM INVESTMENT LIMITED**
 4-306, Xianglixincun, Hongli West Road, Shenzhen, China

Manufacture: **NEW WISDOM INVESTMENT LIMITED**
 Building A1-4, Shenbao Industry Park, Longgang District, Shenzhen, China

Product: **PORTABLE CHARGER**

Model: **GWB-15**

Rating: **Input: 110-240VAC, 6W**

Note: --

And, in accordance with the following applicable directives:
73/23/EEC Low Voltage Directive (as amended)

That this product has been assessed against the following applicable standards:
LVD EN 60335-2-29

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION of CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by: 



Andrew He Date of Issued: January 25, 2007

Rm 802-804, Jinmin Bld., Zizhu 6th Rd., Zhuzi Lin, Futian, Shenzhen 518040, Guangdong, P. R. China
 Tel: 86-755-82871080 Fax: 86-755-82871368 Http://www.bontek.com.cn



Bontek Compliance Laboratory

CE Certificate of Conformity

Certification number: BCT07AC-044E Report number: BCT07AR-044E
Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant: **NEW WISDOM INVESTMENT LIMITED**
 4-306, Xianglixincun, Hongli West Road, Shenzhen, China

Manufacture: **NEW WISDOM INVESTMENT LIMITED**
 Building A1-4, Shenbao Industry Park, Longgang District, Shenzhen, China

Product: **PORTABLE CHARGER**

Model: **GWB-15**

Rating: **Input: 110-240VAC, 6W**

And, in accordance with the following applicable directives:
89/336/EEC Electromagnetic Compatibility (as amended)

That this product has been assessed against the following applicable standards:
**EMC EN 55014-1: 2000+A1: 2001+A2:2002
 EN 55014-2: 2001
 EN 61000-3-2: 2000
 EN 61000-3-3:1995+A1:2001**

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION of CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by: 



Andrew He Date of Issued: January 25, 2007

Rm 802-804, Jinmin Bld., Zizhu 6th Rd., Zhuzi Lin, Futian, Shenzhen 518040, Guangdong, P. R. China
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