



QUAD 2400



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QUAD 2400

USER GUIDE

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INTRODUCTION

Thank you for choosing the Bowens Quad 2400 generator

The Quad range has been designed by working closely with photographers to develop a flash system that meets the high-quality standards demanded in todays professional photographic studios.

Only the best materials and components are selected and used in the construction of all Bowens products, to ensure all of our units are of the highest standards possible; a reputation that has become synonymous with the Bowens brand throughout the world.

In order to obtain the full benefit of this product, please take a few moments to familiarise yourself with this user guide.

Bowens International Ltd.

THE QUAD RANGE

The Bowens Quad range is a world-class lighting system that has been designed to the highest possible standards.

For studio based lighting systems the Quad range boasts the QuadX and the Quad 2400, both offer powerful flash systems with super-fast flash durations and quick recycle times.

For the location photographer, the Explorer 1500 accepts two Quad flash heads and incorporates many of the same benefits of the Quad generator system in a portable location based battery generator.

Like all Bowens products, the Quad flash system has been designed to withstand the rigors of todays hard working studios.

THE QUAD 2400 AT A GLANCE.

- Two flash head outlets.
- Power can be divided over two independent channels or combined through one.
- Variable power over six stops.
- Flash power output adjustments in 1/8 stop increments.
- Flash-voltage stabilisation $\pm 1\%$ at maximum output.
- Choice of four modelling settings in two modes: continuous and intermittent.
- Low voltage synchronisation (6V) is safe for digital cameras.
- Overload protection from 15A thermal breakers for charge and modelling.
- Two 1/4" sync sockets.
- Switchable on/off photocell.
- Switchable on/off audible ready signal.

SAFETY NOTES - DO

- 1.) Switch the power off and disconnect from the power supply before changing the modelling lamps or flash tube.
- 2.) Observe the AC power requirements.
- 3.) Ensure that the flash head cable locking rings at the power pack or adapters are fully locked before use.
- 4.) Avoid placing cables where they can be tripped over. Protect from heavy sharp, or hot objects which may cause damage and replace damaged cables immediately.
- 5.) Unplug the power pack cord by gripping the plug. NEVER pull the cord.
- 6.) Ensure that any extension cord has a suitable current rating to prevent overheating.
- 7.) NEVER use coiled extension cords.
- 8.) ALWAYS remove the flash head covers before using.

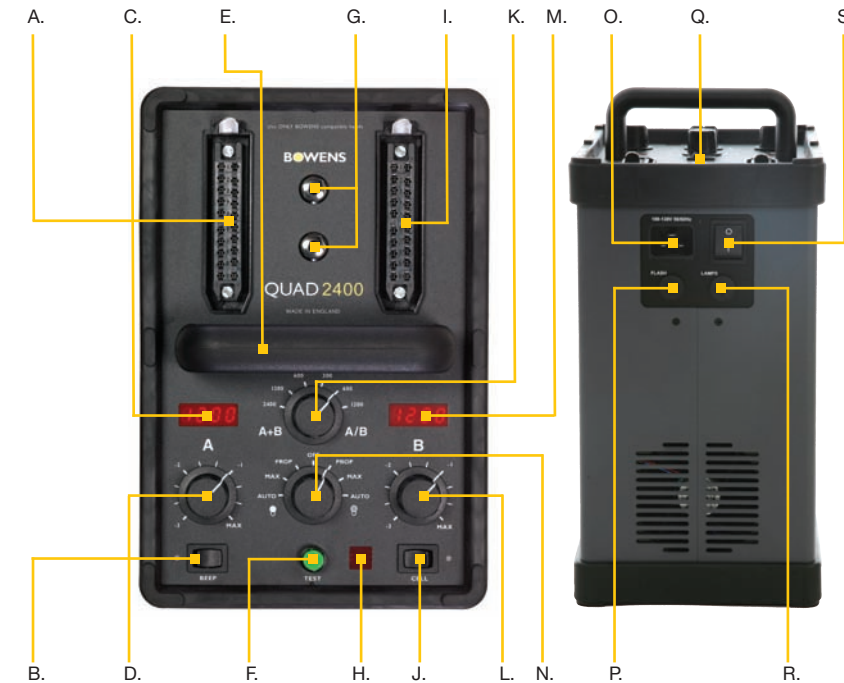
SAFETY NOTES - DO NOT

- 1.) Use in an environment where moisture or flammable liquid is likely to come into contact with this product.
- 2.) Plug or unplug the flash heads without turning off the power first.
- 3.) Restrict the air vents while in use.
- 4.) Use a unit with a damaged housing, mouldings, flash tube or modelling lamp. If a unit is dropped or damaged in any way always have it checked out before using.

POWER CONNECTING INSTRUCTIONS:

- 1.) Ensure the power source is switched 'off'.
- 2.) Connect the unit to the power source using the appropriate cabling.
- 3.) Switch the power source 'on', then turn 'on' the Quad 2400 generator.
- 5.) The unit will charge and indicate it is ready by illuminating the green LED on the top of the unit ('beep' and 'lamp' ready functions are also available to indicate when the unit is 100% charged).
- 6.) Press the 'Test Button' button on top of the unit to check the unit fires.

QUAD 2400 OVERVIEW



- A. Head Socket 'A'
- B. Audio Switch and LED
- C. Channel 'A' Power Level LED
- D. Channel 'A' Power Variator
- E. Carry Handle
- F. Test Button & Ready Indicator
- G. 1/4" Jack Sync Sockets
- H. Photocell Window
- I. Head Socket 'B'
- J. Photocell Switch and LED
- K. Main Power Select Dial
- L. Channel 'B' Power Variator
- M. Channel 'B' Power Level LED
- N. Modelling Mode Select Dial
- O. AC Inlet
- P. Flash Thermal Reset Button
- Q. Fast/Slow Charge Switch
- R. Modelling Thermal Reset Button
- S. Power On/Off Switch

- 1.) The Quad 2400 displays the power available to each channel in watt/seconds on the two red numeric Power Level LED Displays, marked Channel A and Channel B (see page 4).
- 2.) Beneath the Channel Power Level Displays are the Channel Power Variators. These control the individual power available from Head Sockets A and B in 1/8 stop increments. NOTE: The individual Power Variators and Power Level Displays are aligned with the associated socket.
- 3.) The Fast/Slow Charge Switch, Main Power Select Dial and the Modelling Mode Select Dial are common to both channels.

The Quad 2400 is divided into two channels, A and B. An LED display for each channel indicates the power in watt/seconds from the head fitted to that channel.

The single Main Power Select Dial reduces the pack's total power by one or two f/stops, and the Channel Power Variator reduces each channel's power by a further three f/stops in 1/8-stop steps. The Main Power Select Dial has settings for both Asymmetric (A/B) and Symmetric (A+B) modes.

The selected power in Asymmetric mode is available independently from each channel whether or not any head is fitted in the other channel. The power available is controllable by using the appropriate Channel Variator and viewed using the associated display.

The full selected power in Symmetric mode is only available from Channel A, providing that no head is fitted in the Channel B socket. The total power selected is shown on the Channel A Power Level Display and is controllable by means of the Channel A Variator only.

In general, the Main Power Selector should be set to the lowest setting and the Channel Variator(s) set to the highest, consistent with the flash power and the distribution between heads required. This method provides the shortest flash duration for a given power output.

Whenever the power levels are changed, the pack automatically dumps any excess energy. The Test Button will flash while this is occurring. The time for the Ready Indicator to light up can be reduced by using the Test Button to flash dump the charged energy.

HINT: the unit can be set to display power in terms of a decimal reading where 10.0 represents full power. The display mode can be set by holding down the test button when initially switching on the unit.

The Modelling Mode Selector provides a common control for the modelling lamps of all fitted heads. Note that most heads are fitted with a modelling lamp On/Off Switch that overrides the control on the power pack. As well as Off, the pack provides three other modelling modes, each available with Intermittent flash indication:

- 1.) Off - turns all lamps off.
- 2.) Proportional - sets the lamp brightness in proportion to the appropriate Channel Variator Dial setting.
- 3.) Max - sets all lamps to full brightness.
- 4.) Automatic 100% - sets the modelling lamp of the head plugged into the channel with the highest flash power setting to 100%, and the modelling lamp of the head plugged into the other channel in proportion to its variator setting.

- A.) Intermittent - extinguishes the lamps when the pack is fired and turns them back on when the pack is 100% recycled and ready indicator lights up. This provides a visual indication that the pack has been successfully triggered and has recycled.
- B.) Continuous - turns the intermittent mode off.

The green Test Button is lit whenever the pack reaches 100% charge and is ready to be triggered. The green light flashes when the pack is automatically dumping excess energy after a power-level adjustment.

Press the Test Button to:

- 1.) Trigger the power pack for test purposes whenever the Test Button is lit.
- 1.) Dump excess energy quickly while the Test Button is flashing. This avoids having to wait a few seconds for the pack to automatically dump the excess energy.

An Audio Ready Signal is provided to beep when the generator is 100% recycled. To turn the Audio Ready Signal on/off use the Audio Switch (see page 4). The red LED lights up when the audio is on.

A photocell is provided to trigger the pack from another flash source or IR trigger. Turn the photocell on/off with the switch located on top of the unit (see page 4). The red LED lights up when the photocell is on.

The Quad 2400 has the facility to adjust the charging times. Turn the Fast/Slow switch to slow if:

- 1.) A poor quality AC supply is being used.
- 2.) Several power packs are to share the same supply.
- 3.) Fast recycling is not required.

Using the Slow setting whenever possible will prolong the life of the capacitors.

The Quad 2400 may be triggered from the following sources:

- 1.) An external sync source plugged into either of the ¼" jack sync sockets. This will trigger the power pack if the ready indicator is lit. The sync socket line is +5V and is designed for low voltage camera operation. These sockets may also be used with radio and IR triggers to provide a synchronised trigger.
- 2.) The Test Button will fire the power pack only if the unit is charged and the Ready Indicator is either lit or flashing.
- 3.) When the photocell is switched on, the Quad 2400 will trigger in response to an external flash of light, if the Ready Indicator is lit. For best results, be sure that the red photocell window is clearly exposed to the triggering light source.

Before first using your power pack or after an extended storage period, it is recommended that the unit be checked for basic operation as follows:

- 1.) Remove the packaging and ensure that the unit is switched off.
- 2.) Set-up a Quad flash head on the appropriate support system. Be sure the protective cap is removed and the modelling lamp is fitted and switched on.
- 3.) Plug the head into Head Socket A.
- 4.) Set the Main Power Select Dial to symmetric/2400 and the Channel A variator to max.
- 5.) Set the Modelling Mode Select Dial to Intermittent/Proportional.
- 6.) Set Audio Switch to on, Photocell Switch to off and set the Fast/Slow Switch to Slow.
- 7.) Connect the power pack to the correct AC supply, only use Bowens approved mains cables.
- 8.) Set the Power On/Off Switch to on. The unit will now show '2400' on the Channel A display. The pack will now charge to this setting.

- 9.) Confirm after a few seconds that the Ready Indicator lights up, the Audio Ready Signal beeps and the flash heads modelling lamp is on and at full brightness.
- 10.) Use the Test Button to discharge the set power into the flash head.
- 11.) Confirm that the head flashes, the Quad 2400 recycles and the Ready Indicator lights up.
- 12.) Repeat steps 8 and 9 with the Main Power Select Dial set to Symmetric/1200, Symmetric 600, Asymmetric/1200, Asymmetric/600 and Asymmetric/300. Confirm that there is an appropriate change of light output with each change of setting. Use a flash meter if possible.
- 13.) Reduce the Channel A Variator setting to -3.0 and confirm that the modelling light has dimmed.
- 14.) Confirm that the head flashes, the Quad 2400 recycles and the Ready Indicator lights up.
- 15.) Switch the Quad 2400 off. Plug another head into channel B.
- 16.) Set the Main Power Select Dial to Asymmetric/1200 and both channel variators to max.

- 17.) This time both numeric displays will show "1200". The power pack will now charge to this setting.
- 18.) Confirm after a few seconds that the Ready Indicator lights up, the Audio Signal beeps, and the flash heads modelling lamp is on full brightness.
- 19.) Use the Test button to discharge the set power into the head.
- 20.) Confirm that the head flashes, the power pack recycles and the Ready Indicator lights up.
- 21.) Repeat steps 16 to 19 with the Main Power Select switch set to Asymmetric/600 and Asymmetric/300. Confirm that there is an appropriate change of light output with each change of setting. Use a flash meter if possible.

You are now ready to begin using the Quad2400 generator.

NOTE: If the unit has been left unused for 6 months or predominately used with low power settings, it is recommended that the power level be increased to maximum and the unit left switched on for at least 30 minutes to help preserve the life of the capacitors.

If the unit appears to have developed a problem, first establish that it is a genuine internal problem and not a case of normal operation such as overheat mode. Carrying out the following checks to eliminate any external causes. If no obvious problem can be found and replacement of the modelling lamp, flash tube or flash head fuse does not eliminate the problem, then it is likely that an internal problem has developed. Always return the unit to an authorised service centre if a problem is suspected after these checks. **UNDER NO CIRCUMSTANCES SHOULD YOU ATTEMPT ANY REPAIR YOURSELF.**

OVERHEAT WARNING

The Quad2400 is fitted with a thermostatically controlled fan, but under extreme conditions of use the pack may still overheat. Flashing less frequently and/or using the Slow Charge Mode will normally help prevent this from happening.

Overheat protection is provided to inhibit charging until the unit has cooled sufficiently to operate normally. The Power Level Displays will flash an 'Overheat' warning while the overheat condition exists.

OVERHEAT WARNING

NOTE: The overheat condition remains until the power pack reaches a safe temperature or the unit is turned off and allowed to cool.

CONTROL PANEL DOES NOT LIGHT UP

If the control panel does not light up when the unit is switched on, first check the AC power-cord connections and check to make sure the AC outlet is working. Under exceptional conditions of use or component failure, the Internal Fuse may blow. This is designed to protect the unit. report the problem to your local service agent.

DO NOT ATTEMPT TO LOCATE AND REPLACE THE INTERNAL FUSE YOURSELF.

WARNING SIGNS AND TROUBLESHOOTING

CONTROL PANEL LIGHTS UP BUT READY INDICATOR DOESN'T

If this happens, first confirm that the AC-line voltage is adequate and within the prescribed limits. Confirm that the flash Thermal Reset button on the rear panel is pushed in. Under exceptional conditions of use, this may trip. Switch the unit off, wait a minute, push the button in and then switch power on again.

MODELLING LAMPS ARE NOT WORKING

If all of the modelling lamps are not working, first check to see if the Modelling Thermal Reset button on the rear panel is out. If this is the case DO NOT RESET IT until you have checked the head(s) for blown bulbs and/or fuses.

POWER PACK TRIGGERS ERRATICALLY

Check to see if the power pack is being triggered by another flash source by turning the photocell off.

CE MARKING

All Bowens products are certified by the CE mark. The CE certified mark is a declaration of conformity to the required EEC directives 89/336/EEC 'Electromagnetic Compatibility' and 73/23/EEC 'Low Voltage Directive'.

POWER CABLES

Only use Bowens approved mains or battery cables to power Bowens products.

All mains cables must be used as appropriate to the flash units rated power voltage, and the correct mains pin-configuration.



TRANSPORTING UNITS

When transporting any Bowens units, ensure that all equipment is carefully packed into appropriate bags and/or hard shell cases. Make sure all items are securely placed inside the appropriate baggage to protect from any knocks.

Flash units can become very hot after use. Always wait a minimum of 30 minutes before packing to allow units to cool sufficiently.

If a unit is dropped and / or knocked during transport, always have the unit checked by an authorised Bowens service / repair centre before using.

DISPOSAL AND RECYCLING

This product must be recycled in the correct manner. In order to recycle this product in an environmentally friendly way, please dispose of at your local electronic waste facility.

If you have any questions regarding the disposal of any Bowens products, contact your local Bowens retailer and/or Bowens distributor (a list of which can be found on the bowens website).

WARRANTY

All Bowens electrical products are covered by a two year warranty against any faulty design, materials and workmanship.

If a product does not work on arrival or up to a maximum period of four weeks from the date of purchase, it should be returned to the dealer / retail outlet from where it was purchased, to exchange (if available) the faulty unit for a new one; if the faulty unit was part of a kit that was purchased, the dealer / retailer may choose to simply replace the unit and

WARRANTY

not the entire kit. Alternatively the dealer may offer to repair the unit as soon as possible at no charge.

If neither an exchange or repair is possible for the faulty unit, then a full refund may be made.

If a warranty fault occurs after the initial four week period (and within the max two year warranty period), then the unit should be returned to the dealer, who will arrange to repair the unit as soon as possible, at no charge.

This warranty does not apply to consumable items such as flash tubes, modelling lamps, fuses, consumable type batteries.

Should a unit be returned at any time within the two year warranty period, and it is judged to have experienced any of the following points, failure to follow working instructions correctly, accidental or willful damage, misuse, alteration or repair by a non authorised Bowens service / repair centre, then the warranty will be deemed invalid and any repairs that may need carrying out will be payable by the owner.

WARRANTY

The cost of any repairs should be notified to the owner, by the dealer, in advance of undertaking any work that may be required.

No warranty repairs can be undertaken to any units without proof of purchase.

All warranty repairs or returns must be conducted with the dealer from where the product was purchased.

Other terms and conditions may be applicable in specific countries, if stated by the dealer at the time of purchase.

LIGHT MODIFIERS

BW-1886 50° KEYLITE REFLECTOR -
A very high output 24cm (9½") reflector that creates a highly spectacular result. It's the perfect reflector to be used where maximum light output is required. It's also a superb reflector for bouncing light off ceilings or simply to give the maximum possible depth of field.



BW-1887 65° MAXILITE REFLECTOR -
This is a good general-purpose direct reflector with an even coverage and a high light output. Since it has a small 20cm (8") diameter, the light it produces is moderately high in contrast. The stippled surface ensures a smooth and even light distribution.



BW-1887 BACKLITE REFLECTOR -
This 32cm (12½") reflector achieves the maximum amount of light output possible for lighting large groups and bouncing light off ceilings. The efficient parabolic design delivers a narrow, bright beam of light with intense shadows and high contrast. A must where sheer power is required.



LIGHT MODIFIERS

BW-1868 40° SUNLITE REFLECTOR -
A 43cm (17") white interior reflector designed to replicate sunlight for photographing items such as architectural models. The white- painted interior of the Sunlite Reflector helps to ensure that an even light is delivered.



BW-1884 SUPERSOFT 600 DIFFUSER -
The ultimate soft beauty light. The Supersoft 600 Diffuser mounts directly onto the front of the 40° Sunlite Reflector. Its super-large 600mm (23 ½") front diameter and unique three- layered diffusion panels create a large, soft light source that is completely even.



BW-2560 BACKLITE REFLECTOR -
This reflector has an elliptical shape measuring 20cm x 30.5cm (8 x 12") which produces an oval pool of light that can be used to create a natural vignette over a background. Two spring clips are fitted at either end to allow colours gels to be attached.



LIGHT MODIFIERS

BW-1899 75° SOFTLITE REFLECTOR - This 38cm (15") matt finished reflector is supplied with a double diffuser cap that covers the flash tube and modelling lamp for added softness. The softest of Bowens direct reflectors, it's perfect for portraiture, beauty and product photography.



BW-1866 GRID DIFFUSER - The Grid Diffuser is an accessory for the 75° Softlite Reflector that creates a unique lighting effect by including a perspex outer diffuser with a honeycomb grid in the centre. The Grid Diffuser gives a direct pool of light, surrounded by a soft diffused light making it ideal for portraiture.



BW-1878 HIGH PERFORMANCE REFLECTOR - The High Performance Reflector has a 32cm (15") diameter; the parabolic design delivers a bright, intense output perfect for creating deep shadows and high contrasting images. An absolute must where lots of light is requires.



To see a full list of all Bowens accessories, light modifiers and softboxes visit the bowens website.

GLASS DOMES

GLASS DOME - Protective glass dome sits over the flash tube.

QUAD X HEAD DOMES
BW-2981 - UV Coated Glass Dome
BW-2982 - Clear Glass Dome
BW-2983 - Frosted Glass Dome
QUAD 3KM HEAD DOMES
BW-7657 - Clear Glass Dome
BW-7658 - UV Coated Glass Dome
BW-7659 - Frosted Glass Dome



MODELLING LAMPS

E11 HALOGEN BULB - Screw in type modelling bulb. Recommended bulb for use in higher powered monolights and generator heads (see specification table for required modelling bulb on individual units).

230V: 500W - BW-2515
300W - BW-2510
117V: 500W - BW-2530
250W - BW-2525
100W - BW-2520



FLASH HEADS

BW-7665 QUAD^X FLASH HEAD - Fan-cooled and capable of handling up to 3000Ws of flash power. Includes user-replaceable modelling lamp and three-electrode flash tube, also features a UV-coated Pyrex dome to ensure colour integrity and safety.



BW-7652 QUAD 3Km MINI FLASH HEAD (WITH UV-COATED PYREX DOME) - More compact than any previous Quad head, measuring just 160mm in body length & weighs only 2.2Kg. BW-7646 Quad 3Km mini flash head (with Clear dome) also available.



STUDIO ACCESSORIES

BW-7685 QUAD 5M (16') EXTENSION CABLE - For those who need to position their lights that extra bit further away from their packs or subjects. For use with the Quad^X, Quad 2400 and the Explorer 1500. Compatible with the Quad^X head and the Quad 3Km flash head.



STUDIO ACCESSORIES

BW-2550 JETSTREAM WIND MACHINE - The variable-speed Jetstream Wind Machine makes special effects a breeze and adds a sense of motion to your shots. Its remote operating control enables you to adjust the speed levels from a light draft to a gentle breeze to an intense bluster. BW-2550 (240V) - BW-2550B (117V).



BW-2550 FRESNEL 200 SPOT ATTACHMENT - This 200mm Fresnel lens produces a classic Hollywood style lighting, unique to Fresnel spot lenses. A built-in iris gives very tight control of the pool of light, making it ideal for product, portraiture and commercial photography.



BW-5150 PULSAR RADIO TRIGGER SYSTEM - Whether you're triggering flash heads or cameras, the Pulsar is the right tool for the job. Each Pulsar can be used as a trigger or receiver and can send / receive signals up to 100m (333'). TWIN PACK also available: BW-5160.

QUAD²⁴⁰⁰ specifications

Model:	QUAD 2400	
Part Code - Quad 2400 Generator	BW-7620UK BW-7620EU BW-7625US	Quad 2400 230V (UK) Quad 2400 230V (EU) Quad 2400 117V (US)
Part Code - Quad 2400 Set (includes 2 x Quad ^X heads)	BW-7750UK BW-7750EU BW-7755US	Quad 2400 230V (UK) Quad 2400 230V (EU) Quad 2400 117V (US)
Number of Channels	2 channels	
Number of Head Sockets	2 (1 per channel)	
Symmetric/Asymmetric	Manual selection - channel A = symmetric	
Independent Channel Variators	3 f-stops in 1/3-stop increments on each channel	
Stored Energy (max)	2400Ws channel A only or split 1200Ws channel A + 1200Ws channel B	
Flash Power Control Range	37Ws to 2400Ws (6-stops)	
Guide Number (Full Power, 50° Keylite, 100 ISO)	640 (feet/100 ISO) with UV-coated flash tube	
Typical Recycle Time (Full Power)	Fast: < 3 seconds (230V) < 4 seconds (117V) Slow: < 5 seconds (230V) < 6 seconds (117V)	
Flash Colour Temperature	5600K with UV-coated flash tube ±300K	
Flash Duration (t=0.5) one head, max variator	1/300 sec. @ 2400Ws 1/1400 sec. @ 600Ws	
Power Level Display	One LED numeric display per channel	
Flash Voltage Stabilization	±1% at maximum power	
Power Supply Voltage	230V AC, 50/60Hz / 90V-130V AC, 50/60Hz	
Flash Ready Indication	Green Ready Indicator lights up @ 100% charge Audio Ready Signal and Modelling Intermittent when selected.	
Overload Protection	15A thermal breakers for charge and modelling	
Sync Voltage (max)	6V	
Photocell	Switchable: on/off	
Audio Ready Signal	Switchable: on/off	
Modelling Lamps	500W (max) x 2	
Modelling Modes	Off, Proportional, 100% or Automatic 100% in either Continuous or Intermittent flash-indication mode.	
Recommended Flash Head	Quad ^X flash head or Quad3Km flash head.	
Dimensions (Length x Width x Height)	281mm x 184mm x 336mm (362mm inc. handle)	
Weight	9.5Kg / 20.9lbs	

