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Note:

The text has been translated practically verbatim from the French to avoid any content errors. Some phrases are not used in English

### **JB-lighting Varyscan 7**

JB-lighting has been well known in the world of lighting technology for a long time, and we have always found them to possess good specialist knowledge, original solutions and superb mechanics. However, JB is far less well known in France than it is in Germany but the V7 should help to rectify this.

One of the characteristics of JB is that they do not use cast aluminium. Up to now their units had the straight lines of sheet metal casing. The VS7 has maintained this aspect to a degree, which differentiates it from its major competitors. Even where the head consists of two die cast covers with soft shapes, one can admire the connection with the angled metal parts which represents the cooling fin at the back. This is a successful demonstration of good metal processing design.

The upper and lower plastic covering of the unit can be removed quickly. In the lower part there is an aluminium plate which serves as the casing for the printed circuit board, and which covers the whole surface of the moving-light except the cooling block. The active parts can be found in the upper part. Two attached knurled-head screws on both sides of the cooling block allow access to a large cover with a cooling fin, which allows a good view of the light source between the reflector and the double condenser optics. On one hand there is the normal thick aspherical lens and on the other hand the fine field-optics lens, which appears to be convex on both sides instead of plano convex. Behind the lamp three fans supply the inside of the casing, which has double sheathing in order to conduct away the highest possible temperature through simple convection.

A modular structure

Interchangeable modules are a JB philosophy. This makes manufacture more complicated but considerably reduces maintenance. The VS7 uses two perfectly designed modules. Two plastic ducts precisely guide the sheet metal brackets of the module. The plug fits exactly into its corresponding piece on the large circuit board, which also contains the microprocessor and the motor drive. Two vertical spikes fix the element. There is no lagging and no blocking but a very reassuring sense of precision and perfection and almost non-existent cabling.

Gobo Module

The first module has two wheels containing four rotatable gobos right behind the cooling block. The gobos, made from metal or glass, have an outer diameter of 52mm and a usage diameter of 48mm – a generous size which allows maximum light through. The gobos can be changed and the module makes the work much easier. The mechanical design is impressive and is truly “high-quality German workmanship”. The wheel is pressed from sheet aluminium, is blank on the side of the light source and painted black on the lens side (heat protection in this area is still a task). The cogwheel drive that rotates the gobos is made of silicone (for the greatest possible ease of running), the gobo retaining rings are made of brass. Two counterweights around the “open” position hold the wheels in balance.

### Coloured module

The main function of the second module is to carry the coloured wheels. They are extremely light. The sheet is only 0.5mm deep with large openings. The first wheel carries 7 trapezium-shaped filters, some of which colours are extremely dark, an option which can be chosen if there is a high light capacity. The second wheel is equipped with round effect filters, UV and colour temperature correcting filters. Two positions are empty and can accommodate other filters on the condition that silicone is used, because all colour filters in the whole range are affixed, which gives the thin sheet metal a certain stability. On the other side of the module a rotatable 4-facett prism with the classic mounting principle with two motors can be seen. One motor sways the prism and the other rotates it. The prism (also silicon / brass) has the generous dimensions of the gobo wheels. A fine lens moves hidden inside the module in a spindle drive at 3cm in order to achieve the focus.

### What remains in the unit

It is tempting to say – nothing. On the cooling fin side, directly in front of the condenser lens there is a large iris moved by a larger mechanism. Fairly central are two small ventilators which ventilate the whole area. Two frosted filter flaps made of frosted glass generate frosting. The lens, which is semi-circular on the outside and flat on the inside is very thick and the result is a combination of several lenses stuck together. This prevents distortion. Unfortunately, one criticism is that no zoom is available. This is inevitable in comparable products of this high specification.

### A base that has to be viewed from below

The base is closed from above. You have to lay the lamp down so that you can unscrew the lower plate (no less than 24 screws). You will find the drive motor and its position correcting plate. On both sides a throttle and a large compensation capacitor are installed. The base contains practically no electronics as these are fitted in the head.

### A clear layout

22 channels are required to operate the VS7. The functions are thus well separated. However, there are two constants to be found in each channel. For effects which can be controlled by DMX value with various speeds, the time span which can be entered is very large. Thus particular attention has been given to the way the effects work during long periods (therefore slow movements).

The other constant is that infinite variations of shake effects and pulse frequencies can be selected, with different timings or random generation, and even at extreme settings, anywhere where this is of interest (this is new). The menu tree comprises a comprehensive list and under each heading there is a direct choice or various sub-headings. The LCD display is very easy to read and makes it simple to understand immediately and intuitively. The stand-alone function contains a program with 28 steps. This can be processed bit by bit with running or set-up times, then a procedure with 22 DMX stages to which a value is allocated (this requires patience). Please also note the "info" heading which includes temperature details. After two-hour testing it was 25° on the base, 60° for the effects and 73° on the lamp.

## Measurements

The first finding, which is incredible, is that the lamp has excellent luminosity. Even more incredible – it achieves this with an HMI of 1200 between the reflector and the condenser lens. This luminosity can usually only be reached with ellipsoid reflectors. This qualifies the comments which we normally always make, when we compare both systems. Straight after switching on we were surprised by this luminosity (even if the virtual capacity cannot be exhausted), together with a uniformity which would be worthy of a slide projector (ratio between centre / edge 1.45 – one often has to be content with 2 or worse). Of course, the simplicity of the lens as well as the large opening on the cone of light contribute to the whole optical route (at least 4cm diameter throughout. An optical study which gives priority to the mechanical study.

Apart from this fundamentally important point, one can admire the optical quality without constraint, as it produces perfect images, which are neither distorted nor "irisised". The reverse would have been surprising. However, it is regrettable that there is no zoom.

The second point which we very much liked after our first subjective evaluation, was the response speed of the unit, which reacts to the entries on our control device without any delay. It is apparent from the measurements, however, that these response times correspond completely with the standard, with some faster movements, which are framed for precise placement by slower starting time and braking time for precise placement.

No negative points have come to our attention, with the exception of prisms for diffuse lighting. Apart from this we very much liked the movements, especially the extremely slow movements (lamp head, gobo rotation, etc.). The gentle but continuous ventilation remains relatively neutral for use in the theatre. A second disadvantage, however, is that there is no CMY

colourmixing system, which should surely be in place for a “wash” model as in this design you cannot imagine where it could be located.

**In short, it is unfortunately very rare to find faultless technology in such top-class complex devices. The VS7 is one of these, despite some surprising shortcomings. Its robustness as well as its ease of use and maintenance ensure good placement due to its modular structure.**