

## Frequently Asked Questions and Answers About Neon Converters (EVGs)

### **Is it possible to use a red discharge converter for blue discharge tubes?**

No. The "red" converters provide a certain DC portion in order to eliminate the so-called jelly-beaning. If used with a blue discharge tube, this would cause mercury migration with the result that one side of the tube would no longer glow.

### **Is it possible to use a blue discharge converter for red discharge tubes?**

Yes. However, limited by the fact that jelly-beaning (migrating bright and dark spots within the gas discharge) may occur. Otherwise, using blue discharge converters will neither damage the neon nor the EVG.

### **How can the jelly-bean effect be prevented?**

By using special "red filters" which are already integrated in the EVGs for red discharge tubes.

### **Are there any EVGs which are suitable for blue and red discharge?**

Yes. The EVGs 20/8 and 20/5 are suitable for both blue and red discharge without causing any jelly-beaning. Mercury migration does not occur either.

### **Is the brightness of the tube affected by the tube diameter?**

Yes. Using the same current, the luminance of a thin tube is higher than that of a thicker tube, i.e. a tube with a smaller cross-section is brighter than a tube with a larger cross-section.

### **What effect does the tube length have on the ignition voltage?**

The longer the tube the higher is the required voltage which must be provided by the converter.

### **What effect does the tube diameter have on the ignition voltage?**

The thinner the tube the higher is the required voltage. Thicker tubes require a lower voltage for ignition because of their larger cross-section.

### **What is "mercury migration"?**

The gas filling of a blue discharge tube contains mercury vapour. If the tube is operated with DC the mercury migrates towards one electrode. After some time, there is too little mercury vapour left around the other electrode so that no light can be generated in this area.

### **Is it permissible to extend existing high-voltage leads?**

No. The high-voltage leads within a fluorescent tube circuit must not be pieced together (according to EN 50107). The secondary cables on the EVG must not be extended either.

### **What does "constant current characteristic" mean?**

The converter supplies a nearly constant output current from short-circuit to the maximum connectable tube length, i.e. the brightness of the tubes remains the same no matter how long the connected tubing is.

### **What is an indoor system and what is an outdoor system?**

Indoor systems are illuminated advertising systems located in temperature-controlled, enclosed rooms where weather-dependent variations in temperature and moisture do not occur. Outdoor systems are located outside enclosed rooms and are exposed to the elements. If the tubing and the converter are

enclosed in a neon letter, e.g. mounted on the outside wall of a building, this is considered an outdoor system.

### **Is it possible to connect multiple EVGs in series or in parallel?**

No. Neither series nor parallel connection of EVGs is allowed to improve their performance as this would destroy the EVGs.

### **Can EVGs be mounted directly onto metal?**

Yes. Hansen EVGs have a very low magnetic stray field and are designed in such a way that they can be mounted directly onto metal without any restrictions.

### **How hot does an EVG get?**

The surface temperature of an EVG in open installation is approx. 45 °C. However, the actual temperature strongly depends on the installation conditions and the ambient temperature, which must not exceed 65 °C.

### **Do Hansen EVGs require any additional protection against moisture?**

No. All EVGs with embedded cables are sealed water-tight so that no additional protection is required. For EVGs with a mains terminal on the primary side, however, water ingress into the terminals must be taken into account.

### **Is there a particular mounting position which must be observed for EVGs?**

No. Hansen EVGs can be installed in any desired position.

### **Can EVGs be dimmed?**

No. EVGs cannot be dimmed by phase-angle control as this would result in uncontrolled operation and destruction of the device. Some types, however, (e.g. EVG 20/8, EVG 50/2D) can be dimmed using a potentiometer or control voltage.

### **What distance should be kept between the neon tubing and the EVG?**

The distance should generally be 10 mm. However, special care must be taken in the vicinity of the electrodes. As they will heat up to more than 100 °C during operation, the EVGs should not be installed in the vicinity of the electrodes.

### **What types of tube supports may be used?**

Only use plastic-insulated tube supports. Never use metal tube supports without insulation.

### **What is the current consumption of the EVGs?**

The current consumption depends on the connected tube load. The longer the tubing the higher the current consumption. The value given on the rating plate or the specification sheet is a standard value referring to the maximum connectable tube length. If shorter tubes are used, the mains current will decrease accordingly.

### **Why are EVGs embedded in artificial resin?**

The filling compound has two advantages: it offers excellent protection against moisture and ensures a good dissipation of heat from the electronic power components.