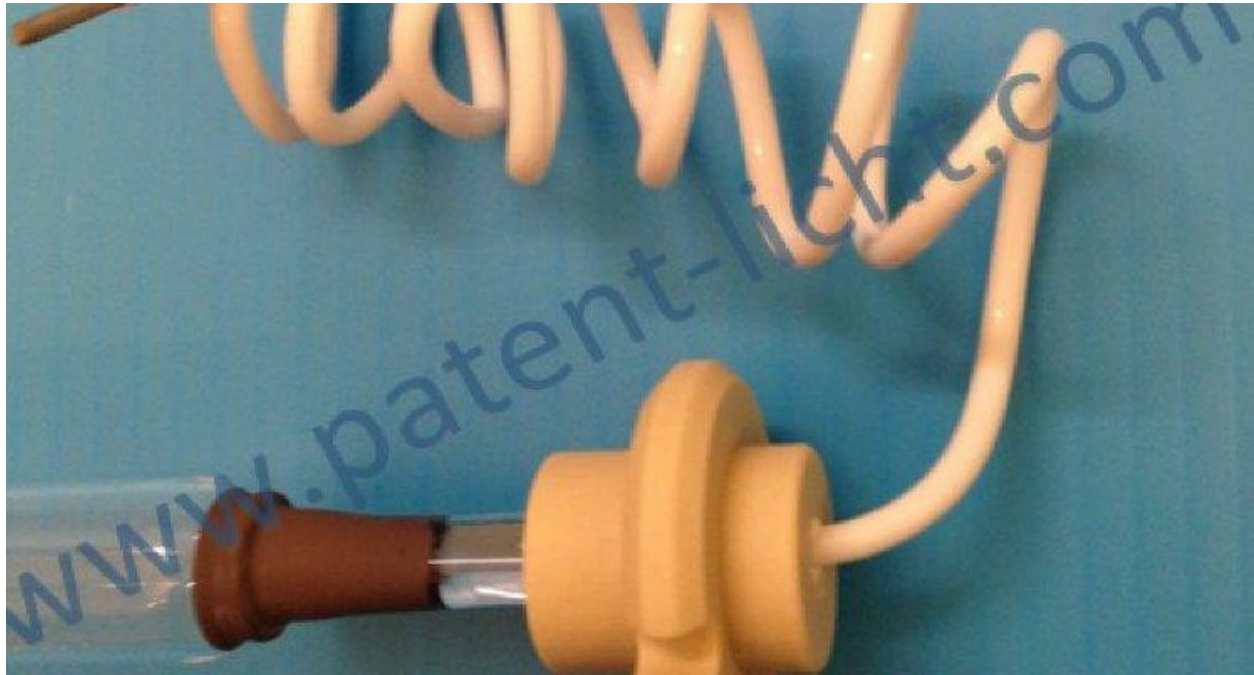


## PATENT Medium Pressure Lamp



Medium-pressure mercury-vapor lamps, the lines from 200–600 nm are present. The lamps can be constructed to emit primarily in the UV-A (around 400 nm) or UV-C (around 250 nm). High-pressure mercury-vapor lamps are those lamp commonly used for general lighting purposes. They emit a multiple line spectrum and can be adapted in their spectrum and performance to different applications by different quartz types and changes in filling.

Main features:

- a) Quartz tubes: Natural Quartz (OF) – Natural Quartz (OG) – Synthetic Quartz (OG)
- b) Outer diameter (OD) of the quartz tubes from 10 mm to 38 mm uv lamps 1
- c) Arc length from 50 mm to 2500 mm and Power range from 100 W to 60 kW
- d) Shape of the lamp body: Linear – U form – Spiral – Other forms available upon request
- e) Max nominal power density per unit length (to be checked in the prototyping stage): from 80 W/cm to 300 W/cm\* – from 80 W/cm to 120 W/cm\*\* – from 80 W/cm to 250 W/cm\*\*\*
- f) Surface temperature (lab tested and according to lamp power) from 600°C to 900°C

## ***Types of UV medium-pressure lamps***

### **1. High disinfection effect**

Ultra Violet light works by breaking the hydrogen bond linking the Adenine and Thymine pair in a pathogen's DNA, this stops the pathogen from replicating. Once the pathogen has been inactivated by UV light it cannot replicate and has a typical life of only a few minutes so rendering it harmless. The level of a pathogen's inactivation depends on the UV dose (UV intensity x exposure time) applied and the pathogen's susceptibility to this UV dose and it varies for every pathogen.

### **2. Oxidation Effect**

Vacuum UV radiation of the wavelength 185 nanometer decomposes long-chain molecules by direct photolysis. In the next stage, harmful substances in water and air are transformed into unharmed molecules. Moreover radiation of wavelengths less than 200 nm generates ozone from oxygen in the air. Oxidation is used for example for removal of grease and odours in kitchen hoods, for reducing of pollutants in industrial exhaust air or for surface cleaning and activation.

### **3. Optimize the spectrums for photochemical applications**

UV light of the right wavelength has the ability to break chemical bonds, and thereby help in the reduction of unwanted chemicals in water. This process is called Photolysis and has many industrial applications:

- Chloramine destruction in swimming pools
- De-chlorination in process waters
- De-Ozone in process waters

Reference lamp model number : PAT/130029-3001, PAT/UVL-5000-O, PAT/HLU8-H81, PAT/7000H4, PAT/130033-0652, PAT/UVL6000-O, PAT/UVL8001, PAT/UVL2000RS, PAT/130027-3001, PAT/UVL2000RSO