

# GLOBAL RAINBOW



## **LASER TECHNICAL INFORMATION**

### **Laseranimation built Global Rainbow set 2016**

The Global Rainbow is made from 7 highly collimated, low divergence, powerful laser beams.

The colors of the laser beams (Red, Orange, Yellow, Green, light Blue, dark Blue, Purple) reflect Yvette Mattern's choice of colors.

The laser output power of the units is similar (about 25 W each): this reflects the power distribution of natural rainbows (identical power in each wavelength band). The colors are composed from primary colors as close as possible to the desired color. Because no complementary colors are used the resulting colors look very homogenous.

The entire set consists of 7 separate laser units, one for each color. The units

have identical dimensions. They are independent of each other and can be arranged horizontally or vertically.

The set is designed to be installed adjusted and operated by a single technician with the help of a local hand. Set-up time is about 4 – 8 hours (depending on local conditions).

**Each laser unit has the following features:**



- 1) Based on LaserAnimations established PHAENON X projector series
- 2) Laser sources are Coherent Taipan OPSL (Yellow, Green, Cyan) laser modules and LaserAnimation's (Red, Blue) modules based on our proprietary technique of combining low power laser diodes 3 PHAENON X 30000 interior emitting 2 PHAENON X 30000 interior
- 3) Highest quality optics, opto-mechanics and electronic parts

4. High quality 2" diameter collimation optics for resulting low divergence of 0.1 – 0.2 mrad.

5. 90° external beam deflector with output tube and window to protect the mirror against pollution and insects

4. laser unit with 90° deflector and output tube

The output tube serves as a beam stop to limit the solid angle into which the laser beam can travel.

6. Remote control by PC/Mac of internal and external laser parameters (LAToolbox) internal parameters are current, temperatures etc external parameters are on/off, Key switch, E-Stop, Timer for automated on/off

7. Remote control (smart phone) of beam divergence (motorized "zoom") and beam collinearity (color overlap for colors made from different primary colors for example Orange = Red + Yellow) by motorized adjusters

8. Remote control (smart phone) of beam direction for perfect parallelism of the color beams motorized two axis control of the 90° beam deflector

9. Safety shutoff if someone comes into the vicinity of the laser beam

**Each laser unit is packed in a special flight case with these features:**

1. Heavy duty flightcase (8 total – 7 Laser cases, 1 extra case)

2. The Flight case also serves as the support for the laser unit, which will be mounted (screwed) on top of the case. Height above ground of beam exit : 150cm - 180 cm

3. The case is equipped with adjustable feet for leveling the laser unit.

4. Protective shelter for the laser unit, by lightweight tarpaulin and aluminum rods

**One additional case with the same dimensions for:**

1. E-Stop, control (notebook)

2. Cables: power cables, signal cables. Portable socket outlet
3. Spare parts.
4. Tools, optical cleaning, small lamp, torch light , travel adapter, gaffer tape, emergency light, Disto meter, warning signs, barrier tape, water level

Total Set	105,500 mW
RED	19,200 mW
ORANGE	15,600 mW
YELLOW	12,000 mW
GREEN	13,100 mW
LIGHT BLUE	14,000 mW
DARK BLUE	14,000 mW
PURPLE	17,600 mW

**11. Electrical information: 116V AC 60Hz/230 V AC 60 Hz**  
**Power Fuse T10A, 127-III 6X20mm Time Lag**  
**Power consumption for each laser in US < 8.0 Amp @110VAC**



## **SHIPPING INFORMATION**

1. **Total cases for shipment: 8**
2. **Dimension of flight cases: W x L x H: 420mm x 420mm x 210mm**
3. **4 cases fit onto a standard pallet (1200mm x 800mm)**
4. **Weight per unit including flight cases: 70kg estimated**
5. **Weight 25-30kg for laser machine inside flight case**

**Content list to be provided**