

## 5. DMX PROTOCOL

Mode 1 channel	Mode 2 channel	8 bit channel	Value	Function	Type of control
1	1	1	0-255	<b>Pan</b> Pan movement by 530°	proportional
2	3	2	0-255	<b>Tilt</b> Tilt movement by 280°	proportional
3	2		0-255	<b>Pan fine</b> Fine control of pan movement	proportional
4	4		0-255	<b>Tilt fine</b> Fine control of tilt movement	proportional
5	5	3	0 1-249 250-252 253-255	<b>Speed of PAN/TILT movement</b> Max. speed (tracking mode) From max. to min. speed (vector mode) Max. speed, (track mode), black-out while color or rot./stat. gobo changes Max. speed (vector mode) ,black out while pan/tilt moving or color or gobo changes	step proportional step step
6	6	4	0-127 128-139 140-229 230-239 240-255	<b>Lamp on/off, reset, fans speed control</b> From max. speed of fan to min. speed of fan Lamp on, reset, No function Lamp off after 3 sec No function	proportional step step step step
7	7	5	0 16 32 48 64 80 96 112 128-189 190-193 194-255 0-255	<b>Colours 1</b> Open/white Blue Red Green Yellow Magenta Cyan Light green Forwards rainbow effect from fast to slow No rotation Backwards rainbow effect from slow to fast <i>Colour macro function (channel 8 set from 128-191)-32 different colours in following order: white, pink, magenta, red, orange, yellow, green, cyan, blue, UV</i>	proportional proportional proportional proportional proportional proportional proportional proportional proportional proportional step proportional proportional
8	8	6	0-15 16-35 36-51 52-71 72-87 88-107 108-127 128-191 192-193 194-255	<b>Colours 2/static gobos</b> White Light blue Pink Umber Gobo 1(dichroic) Gobo 2(dichroic) Gobo 3(dichroic) Enable macro colour on channel 7 No rotation Rainbow effect from slow to fast	step step step step step step step step step step

Mode 1 channel	Mode 2 channel	8bit channel	Value	Function	Type of control
9	9	7	0-95 96- 159	<b>3-facet prism rotatin control,Prism macros</b> Open position (no prism) 3-facet rotating prism	step proportional
			<b>160-255</b> 160-167 168-175 176-183 184-191 192-199 200-207 208-215 216-223 224-231 232-239 240-247 248-255	<b>Prism/rot.gobo macros</b> Macro 1 Macro 2 Macro 3 Macro 4 Macro 5 Macro 6 Macro 7 Macro 8 Macro 9 Macro 10 Macro 11 Macro 12	step step step step step step step step step step step step
10	10	8	0 1-126 127-128 129-255	<b>3-facet prism rotation control</b> No rotation Forwards rotation from fast to slow No rotation Backwards rotation from slow to fast	step proportional step proportional
11	11	9	0-31 32-63 64-95 96-127 128-159 160-223 224-255	<b>Rotating gobos</b> Open/hole Rot.gobo 1 (glass) Rot.gobo 2 (metal) Rot.gobo 3 (metal) Rot.gobo 4 (metal) Rot.gobo 5 (metal) Rot.gobo wheel cont.rotation from slow to fast	step step step step step step proportional
12	12	10	0-127 128-190 191-192 193-255	<b>Rotating gobo index,rotating gobo rotation</b> Gobo indexing Forwards gobo rotation from fast to slow No rotation Backwards gobo rotation from slow to fast	proportional proportional step proportional
13	13	11	0-31 32-47 48-63 64-79 80-95 96-111 112-127  128-159 160-175 176-191 192-207 208-223 224-239 240-255	<b>Zoom,frost,UV filter</b> <i>Zoom without focus corection</i> Zoom 15° Zoom 18° Zoom 21° Zoom 24° Zoom 26° Frost UV-filter <i>Zoom with focus corection</i> Zoom 15° Zoom 18° Zoom 21° Zoom 24° Zoom 26° Frost UV-filter	step step step step step step step step  step step step step step step step

Mode 1 channel	Mode 2 channel	8bit channel	Value	Function	Type of control
14	14	12	0-255	<b>Focus</b> Continuous adjustment from far to near	proportional
15	15	13	0-31 32-63 64-95 96-127 128-159 160-191 192-223 224-255	<b>Shutter, strobe</b> Shutter closed No function (Shutter open) Strobe-effect from slow to fast (max. 10 flashes/s) No function (Shutter open) Pulse-effect in sequences from slow to fast No function (Shutter open) Random strobe-effect from slow to fast No function (Shutter open)	step step proportional step proportional step proportional step
16	16	14	0-255	<b>Dimmer intensity</b> Gradual adjustment of the dimmer intensity from 0 to 100%	proportional

**DMX Calibration protocol:**

DMX chanel	Function	
1	Colour 1	m i m S c v o r e o o m t s e h t e p
2	Colour 2/stat.gobo	
3	Effect	
4	Rotating gobo	
5	No function	
6	No function	
7	Colours 1	Standard protocol
8	Colours 2/stat.gobos	Standard protocol
9	Prism	Standard protocol
10	Prism rotation	Standard protocol
11	Rotating gobos	Standard protocol
12	Gobo rotation	Standard protocol
13	Effects/zoom	Standard protocol
14	Focus	Standard protocol
15	Strobo	Standard protocol
16	Dimmer	Standard protocol

After having calibrated required functions press **[Enter]** to confirm (or **[Mode]** to cancel and return to the menu without reset by the "A.rES." function) and use the "A.rES." function in order to write the calibration values to the memory (EEPROM) and to make a reset in order to check the new adjusted positions of the colour 1, colour 2/static gobo, effect and rot.gobo wheels.

## 9. Error and information messages

### **HEAt**

This message appears if you try to switch on the lamp within 5 minutes after having switched it off (the lamp is too hot). The message will appear on the display if the lamp doesn't ignite within 28 seconds. The MS Zoom 250 XT will store this information and automatically ignite the lamp when the 5 minutes period has expired.

**Caution:** The message is disabled if the lamp light sensor (function "En.Sn.") is switched Off (only if the lamp was turned Off and On within 5 minutes, the message "HEAt" will appear).

### **LA.Er.**

The ignition of the lamp is seven times unsuccessful (the "HEAt" message appeared six times before), and the display shows "LA.Er.", meaning that the lamp could be damaged or even missed, the fixture is overheating (this can occur if the ambient temperature is 45° C or more) or there could be a failure on the ignitor or ballast.

Please place or replace the lamp, check the ambient temperature or contact your dealer if the situation was not caused by the lamp.

**Caution:** The message is disabled if the lamp light sensor (function "En.Sn.") is switched Off.

## 10. Technical specifications

### Power supply:

- EU-model: Voltage.....208/230/240 V AC, 50/60 Hz ~
  - Fuse.....T 3.15 A@230V
- US-model: Voltage.....100/120/208/230/240 V AC, 50/60 Hz ~
  - Fuse.....T 6.3 A@120V
  - Power consumption.....500VA

### Lamps:

Philips MSD 250 or MSD250/2 GY9.5

### Optical system:

- High luminous-efficiency parabolic mirror and double condenser system
- Multi-step zoom (15°, 18°, 21°, 24°, 26°)
- All lenses are anti-reflection coated

### Colours:

#### Colour - wheel :

- 7 dichroic-filters plus white, colour-wheel with variable rotation speed in both directions

#### Colour/static gobo - wheel:

- 3 dichroic-filters plus white

### Static gobos:

- 3 dichroic gobos plus an open position
- Outside diameter= 37.3 mm, image diameter= 31 mm, thickness=1.1mm
- Material: high temperature borofloat or better glass

### Rotating gobos:

- Rotating gobo-wheel with 5 interchangeable rotating gobos plus open
- Rotating gobo-wheel cont. rotation
- 4 metal gobos and 1 glass gobo rotating in both directions at different speeds
- Rotating gobos can be turned by 360°, the adjusted position is memorized
- Gobo indexing
- Metal gobos: outside diameter= 37.3 mm, image diameter =31.5 mm, stainless steel, thickness=0.15mm
- Glass gobo: outside diameter= 37.3 mm, image diameter =31.5 mm, high temperature borofloat or better glass, max. thickness=4mm

### Strobe:

- Strobe effect with variable speed (1 - 10 flashes per second)
- Preprogrammed variable/random strobe and dimmer pulse-effects

### Dimmer:

- Smooth dimmer from 0 - 100 %

### Prism:

- 3-facet-prism rotating in both directions at different speeds
- Macro-function for rotating gobos/rotating prism combinations

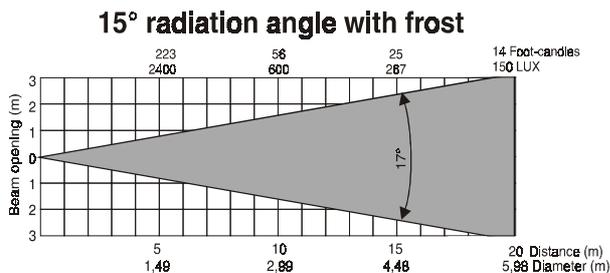
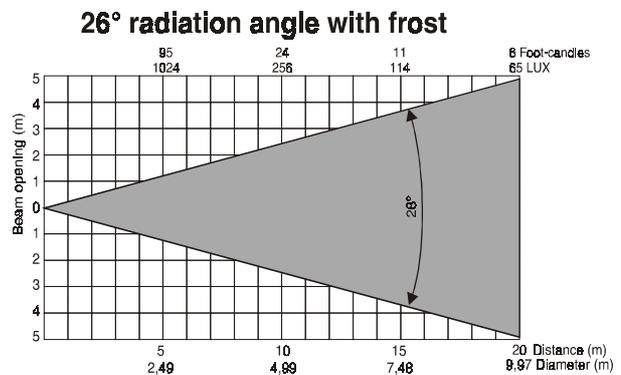
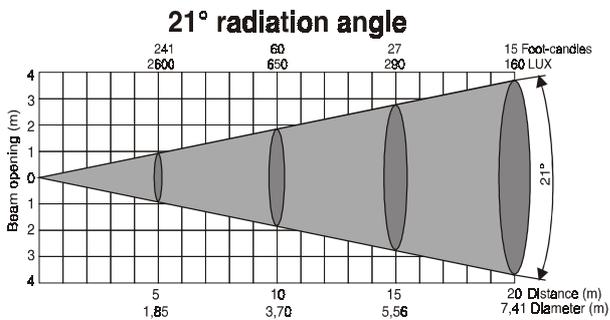
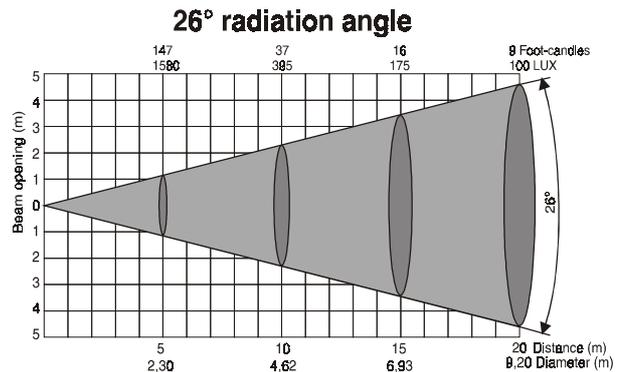
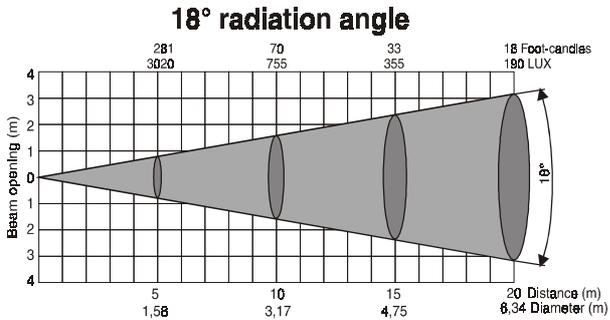
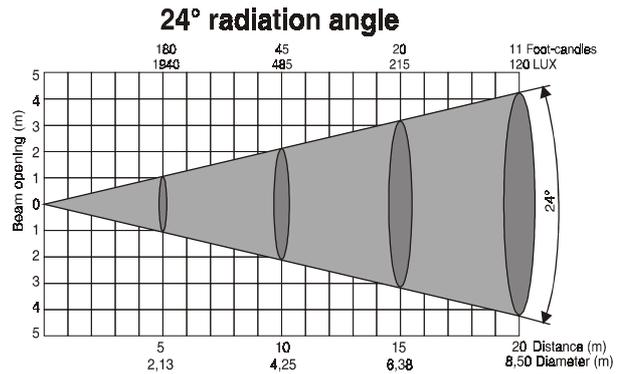
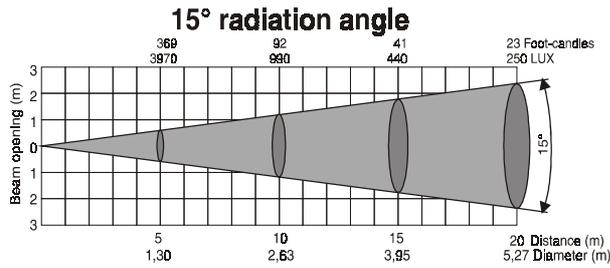
### Focus:

- Remotely controllable motorized focus from near to far

### Motors:

- 10 high quality stepping-motors controlled by microprocessors

## Beampath:



## Electronics:

- Addressing, special functions setting, effects calibration via control panel with 4-digit LED display
- Readout fixture and lamp usage, receiving DMX values, temperature, etc
- Built-in analyzer for easy fault finding, error messages
- Remotely switching of the lamp
- Built-in demo sequences
- Black-out while head moving or gobo/color changing
- 5 fan speed modes, remotely controllable speed of fans
- Self-resettable thermo-fuse
- Master/slave operation
- Stand-alone operation
- Digital serial input DMX-512
- DMX-control via every standard DMX controller
- 14 DMX-channels (8 bit Pan/Tilt movement resolution)
- 16 DMX-channels (16 bit Pan/Tilt movement resolution):

Channel	Mode 1-16bit (default)	Mode 2-16bit	8 bit
1	Pan	Pan	Pan
2	Tilt	Fine Pan	Tilt
3	Fine Pan	Tilt	Pan/Tilt speed
4	Fine Tilt	Fine Tilt	Fans,Lamp On/Off
5	Pan/Tilt speed	Pan/Tilt speed	Colour 1
6	Fans, On/Off lamp	Fans, On/Off lamp	Colour2/stat.gobo
7	Colour 1	Colour 1	Prism
8	Colour 2/stat.gobo	Colour 2/stat.gobo	Prism control
9	Prism	Prism	Rotating gobo
10	Prism control	Prism control	Rot.gobo rotation
11	Rotating gobo	Rotating gobo	Zoom
12	Rot.gobo rotation	Rot.gobo rotation	Focus
13	Zoom	Zoom	Strobe
14	Focus	Focus	Dimmer
15	Shutter, strobe	Shutter, strobe	
16	Dimmer	Dimmer	

#### Pan/Tilt:

- Pan movement range 530°
- Tilt movement range 280°
- 8/16 bit movement resolution
- Automatic Pan / Tilt position correction
- Maximum PAN-movement 530° in 2.7 s
- Maximum TILT-movement 280° in 1.7 s
- Remotely controllable speed of Pan/Tilt movement for easy programming

#### Rigging:

- Stands directly on the floor
- Mounts horizontally or vertically with 2 clamps
- 2 truss orientation
- Safety chain/cord attachment point

#### Temperatures:

- Maximum ambient temperature  $t_a$ : 45° C
- Maximum housing temperature  $t_b$  (steady state): 80° C

#### Minimum distances:

- Min.distance from flammable surfaces: 0,5m
- Min.distance to lighted object: 1,3m

#### Accessories

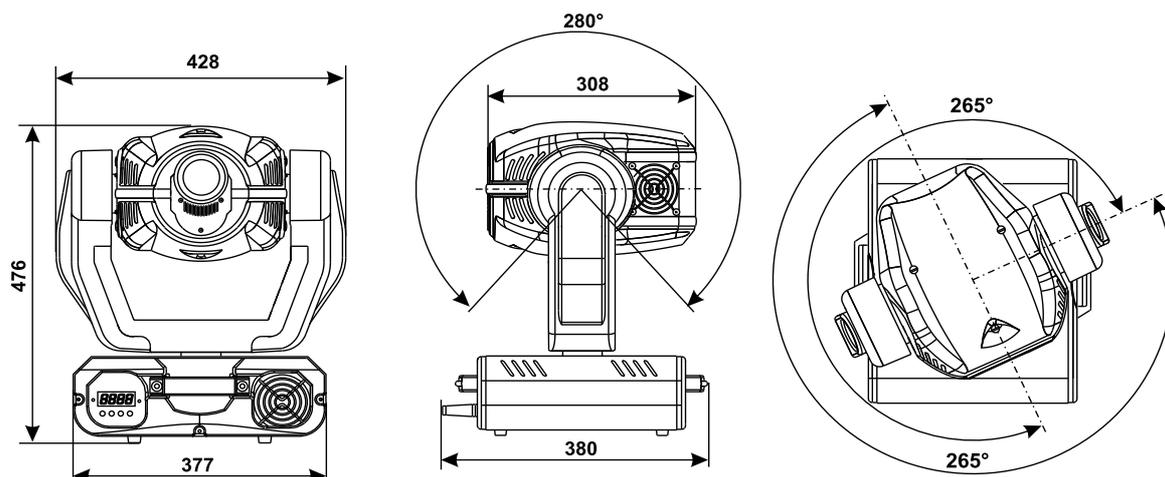
- Accessories gobo-set 5.....15050014
- Omega holder (2 pieces).....99010420

#### Optional accessories:

- Mounting plate.....99010500

#### Dimensions and weight:

- Length of base (including handles): 380 mm
- Width : 377 mm
- Height (head horizontal): 476 mm
- Weight (net): 19 kg
- Shipping weight: 24 kg



## 11. Maintenance and cleaning

It is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-fluid residues must not build up on or within the fixture. Otherwise, the fixture's light-output will be significantly reduced. Regular cleaning will not only ensure the maximum light-output, but will also allow the fixture to function reliably throughout its life. A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

***DANGER!***  
***Disconnect from the mains before starting any  
 maintenance work***

The front objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.

The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.

The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.

The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.

To ensure a proper function of the gobo-wheel and the zoom screwline, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

There are no serviceable parts inside the device except for the lamp and the fuse.

Please refer to the instructions under "Fitting/Exchanging the lamp".

Maintenance and service operations are only to be carried out by authorized dealers.

### Replacing the fuse

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating.

Before replacing the fuse, unplug mains lead.

#### Procedure:

- 1) Unscrew the fuseholder on the rear panel of the base with a fitting screwdriver from the housing (anti-clockwise).
- 2) Remove the old fuse from the fuseholder.
- 3) Install the new fuse in the fuseholder.
- 4) Replace the fuseholder in the housing and fix it.