

STARSHINE LIGHTS PRODUCT MANUAL



FO25 420W IP66 BSW MOVING HEAD LIGHT

PRODUCT MANUAL



420W PHILIPS	IP66	CMY COLOR	2°-31° ZOOM
28CH DMX	RDM	DUAL GOBO	DUAL PRISM

Thank you for choosing the Starshine FO25. Read this manual carefully before installation, operation, or service. Keep it available for future reference.

IMPORTANT SAFETY NOTICE

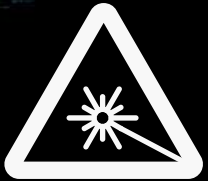
Installation and servicing must be performed by qualified personnel. Always use an approved clamp and an independent safety cable when the fixture is mounted overhead.

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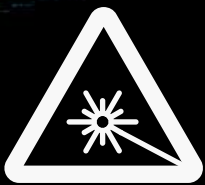
Manual Scope

This manual contains the operating, installation, menu, and DMX information for model FO25 only.



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1. Safety Instructions

Warranty and Liability

Damage caused by disregarding this manual is not covered by warranty. The manufacturer and dealer are not liable for resulting defects, damage, or injury.

Unpack the fixture carefully and inspect it for transport damage before use.

The FO25 is rated IP66 for use in dry or humid environments. Keep the housing and optical surfaces clean and maintain the fixture regularly.

Installation, operation, and maintenance must be carried out by qualified personnel in accordance with this manual and applicable regulations.

Secure the fixture with an approved clamp and an independent safety cable. Support the base when moving the fixture.

Install the fixture in a well-ventilated location with at least 50 cm clearance from adjacent surfaces.

Confirm that the available mains voltage matches the input rating before connecting power.

The fixture must be properly grounded to reduce the risk of electric shock.

Permitted ambient temperature: -10°C to +40°C. Do not operate outside this range.

A slight odor or a small amount of smoke may occur during the first start-up and should gradually disappear within approximately 15 minutes.

Keep flammable materials away from the fixture while it is operating.

Do not use a power cable with damaged insulation. Disconnect power before cleaning or servicing and pull the plug, not the cable.

The housing temperature can reach approximately 85°C. Do not touch the housing with bare hands during operation or immediately after shutdown.

Prevent liquids, conductive objects, and foreign materials from entering the fixture. Disconnect mains power immediately if this occurs.

Do not touch internal wiring while the fixture is connected to power.

Maintain a minimum distance of 12 m between the fixture and the illuminated surface.

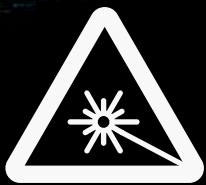
There are no user-serviceable parts inside. Do not open the housing unless you are an authorized service technician.

Stop using the fixture immediately if a fault occurs. Repairs must be performed by qualified technicians.

Use the original packaging for transport whenever possible.

Replace the lamp if it is damaged, heat-deformed, or has exceeded its service life.

Do not look directly into the light output while the fixture is operating.



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2. Product Introduction

The FO25 is a weather-resistant 420W beam, spot, and wash moving head designed for professional outdoor and indoor productions. Its optical system combines CMY color mixing, dual color wheels, static and rotating gobos, zoom, focus, frost, and two prism effects in an IP66 magnesium-alloy housing.

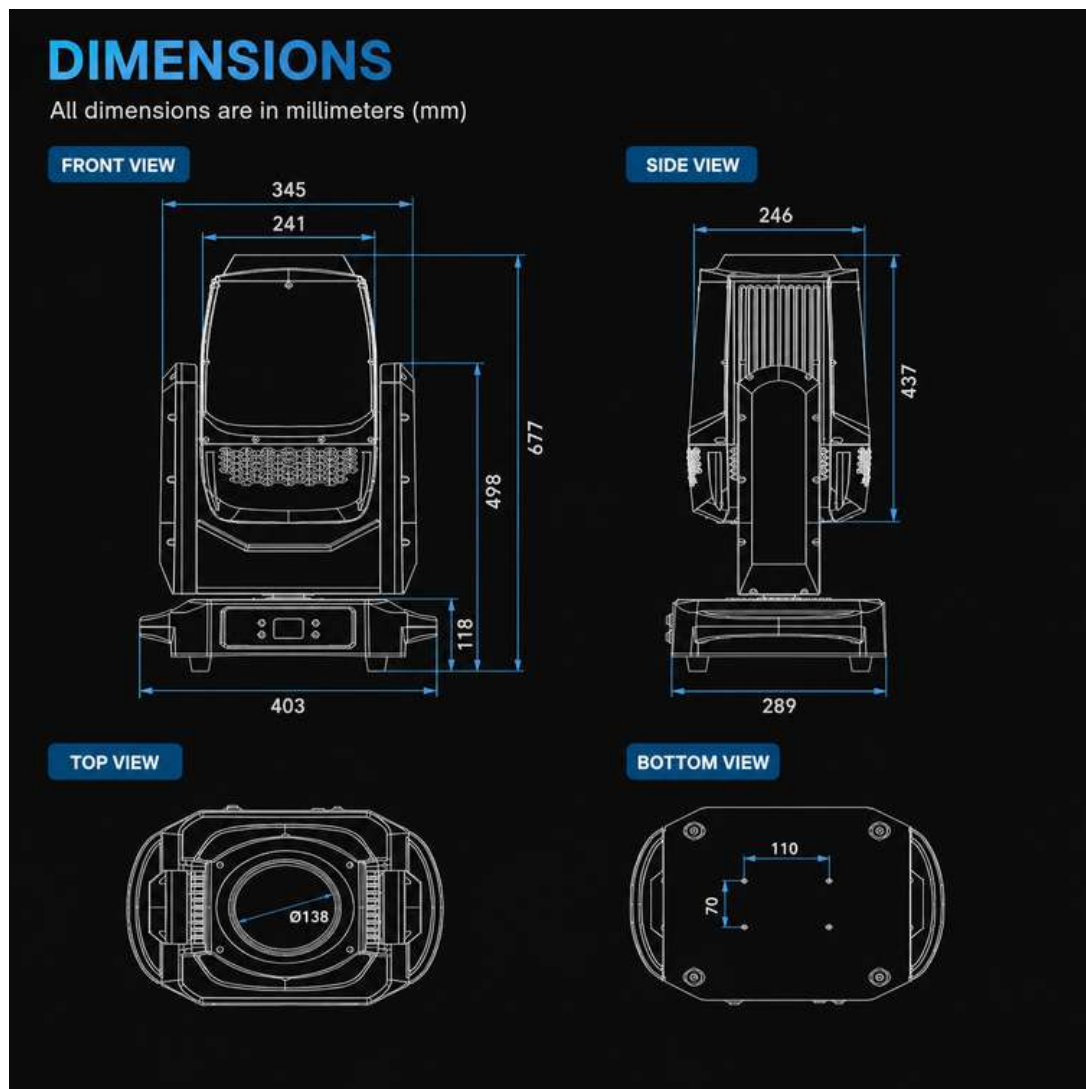
System	Key Capability
Optical Engine	420W PHILIPS MSD Silver lamp with electronic focus and 2°-31° zoom.
Color System	Linear CMY mixing plus two color wheels with 12 colors.
Pattern Effects	14 static gobos and 7 interchangeable rotating gobos.
Beam Effects	8-facet prism, 6-facet linear prism, frost, strobe, and smooth dimming.
Control	28CH DMX512, Master/Slave, Auto Run, and RDM.
Weather Protection	IP66 sealed housing with waterproof power and signal connections.

Technical Specifications

Specification	FO25 Rating
Input Voltage	AC 100-240 V, 50/60 Hz
Power Consumption	600 W
Light Source	PHILIPS MSD Silver 420W/2 LL
Color Temperature	7800 ± 500 K
Lamp Life	3,500 hours
Zoom / Beam Angle	2°-31°
Output Aperture Diameter	140 mm
Pan Movement	540°
Tilt Movement	270°
Color System	Linear CMY color mixing; 2 color wheels with 12 colors
Gobo System	1 static gobo wheel with 14 gobos; 1 rotating gobo wheel with 7 interchangeable gobos
Focus	0-100% electronic high-definition focus
Frost	1 frost filter
Strobe	1-20 Hz with multiple strobe effects
Dimming	0-100% smooth dimming
Prism	8-facet prism and 6-facet linear prism
Power Connectors	Waterproof power input / output
DMX Connectors	3-pin / 5-pin XLR connectors
Operating Temperature	-10°C to +40°C
Dimensions	709 × 386 × 290 mm
Net Weight	27 kg
Ingress Protection	IP66
Housing	All-magnesium alloy body with black baked finish
Control Modes	DMX512, Master/Slave, Auto Run, RDM
DMX Channel Mode	28CH
Display	2.8-inch display with automatic flip

2.1 Product Dimensions

All dimensions are shown in millimeters. Allow additional clearance for cabling, pan/tilt movement, ventilation, and service access.



FO25 dimensional drawing: overall dimensions 709 × 386 × 290 mm.

Mounting Clearance

Ensure the head can complete its full 540° pan and 270° tilt movement without striking cables, truss, walls, or other equipment.

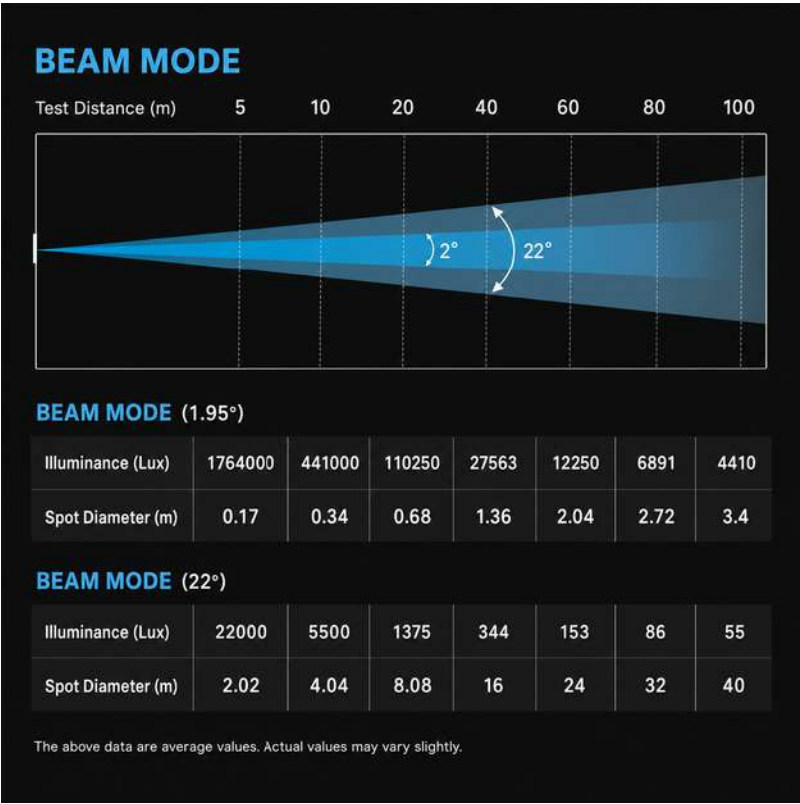


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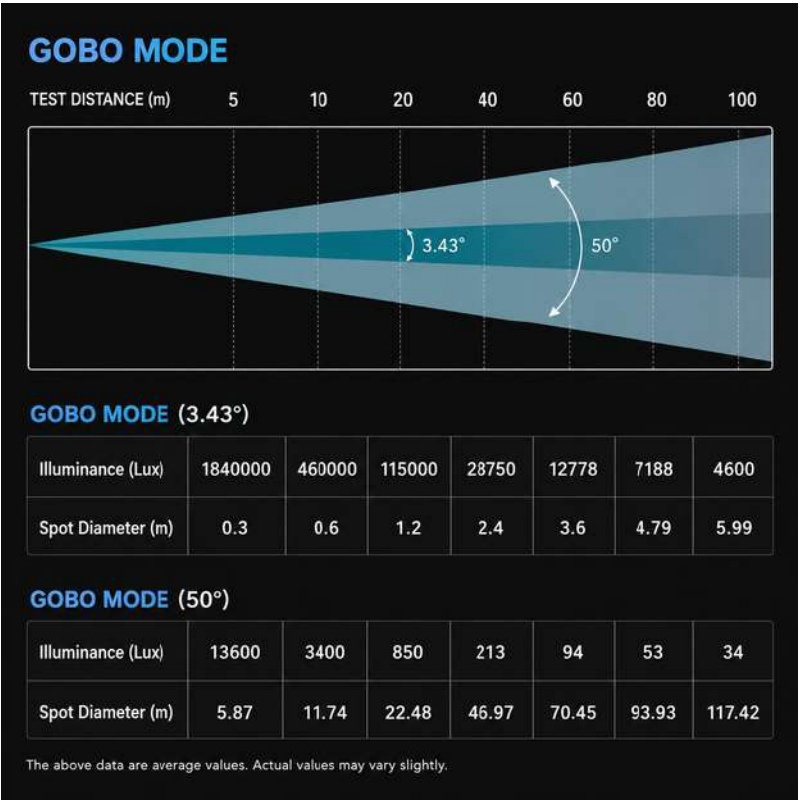


2.2 Photometric Performance

The diagrams below show measured illuminance and projected spot diameter at representative distances. Results may vary with lamp age, ambient conditions, optical configuration, and fixture calibration.

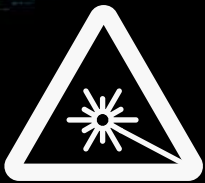


Beam mode photometric data.

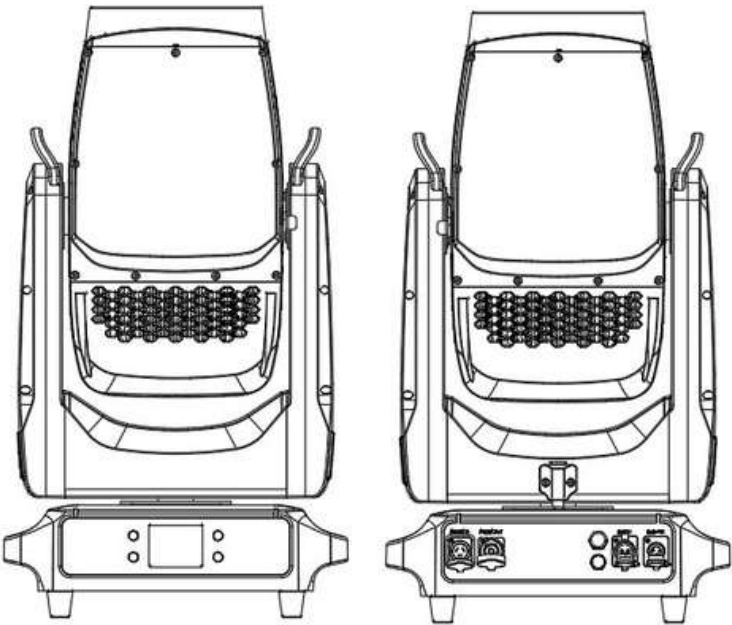


Gobo mode photometric data.

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3. Control Panel

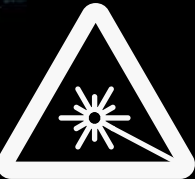


Front display panel and rear connection panel.

ID	Control / Connector	Function
1	Display Panel	MENU opens or exits the menu; UP and DOWN navigate or adjust values; ENTER confirms and saves.
2	Power In	Connects the fixture to the AC power supply.
3	Power Out	Provides power-through connection to the next fixture.
4	Pressure Release Valve	Balances internal pressure while maintaining the sealed housing.
5	DMX In	Connects the fixture to a DMX512 controller using a 3-pin XLR cable.
6	DMX Out	Links the DMX signal to the next fixture in the chain.

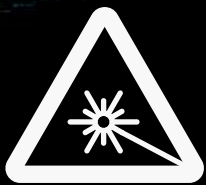
Power Linking Limit
Using 1.5 mm² power cable, connect no more than 4 fixtures at 230 V or 2 fixtures at 120 V in a single power-link chain.

The fixture uses waterproof power input/output connectors. Confirm that all seals and connector caps are correctly fitted before outdoor operation.



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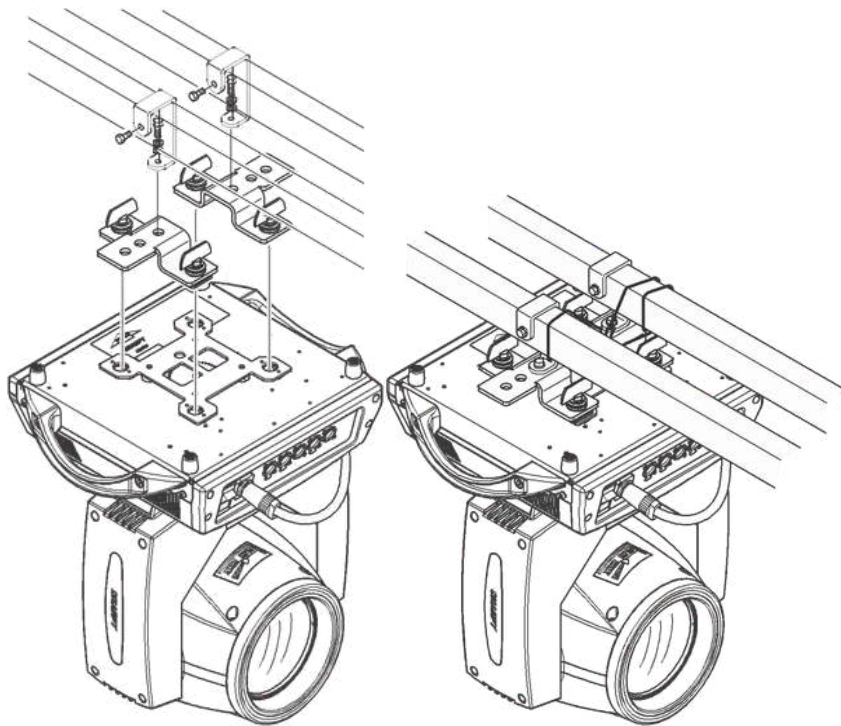
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4. Installation

Installation must be performed by qualified personnel. Keep unauthorized people away from the

- 1 installation area and never stand directly below the fixture during installation, removal, or service.
The supporting structure must hold at least 10 times the fixture weight without deformation. Use an independent safety cable rated for at least 12 times the fixture weight so the fixture cannot fall if the primary clamp fails.
- 2
- 3 The FO25 may be suspended, hung, or placed on a stable horizontal surface. Always use the designated mounting points and install the safety cable when the fixture is mounted overhead.



Examples of overhead mounting and safety-cable routing.

Overhead Safety

Never rely on the clamp alone. Route the safety cable through the fixture safety point and around the supporting structure with minimum slack.

5. Lighting Setup

Menu Navigation

For first use, press UP and DOWN twice, then press ENTER to unlock the menu.

Use UP and DOWN to move through menus or change values.

Press ENTER to select an option or confirm and save a setting.

Press MENU to return to the previous menu or exit without changing the current setting.

After extended inactivity, the display locks automatically. Repeat the unlock sequence to continue.

Menu Functions

The following table summarizes the FO25 menu structure. Service calibration should be performed only by authorized technicians.



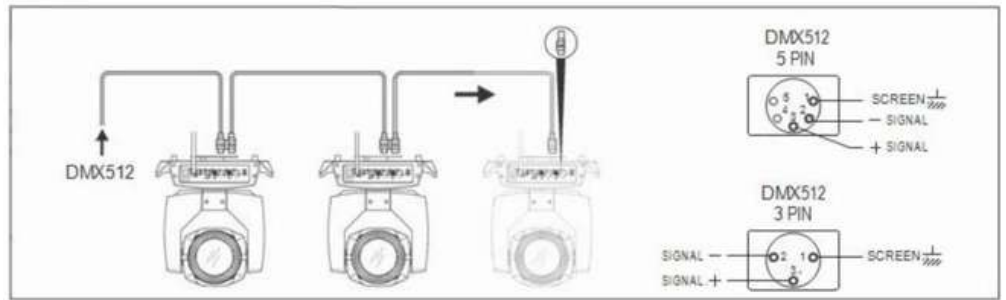
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Menu Path	Setting / Value
DMX Setup → Dmx Address	1-512
DMX Setup → Channel Mode	28CH
DMX Setup → Run Mode	DMX / Auto / Scene
Personality → Pan Inverse	No / Yes
Personality → Tilt Inverse	No / Yes
Personality → Pan/Tilt Feedback	Off / On
Personality → No Data Mode	Blackout / Hold
Personality → M/S Mode	Slave / Master
Personality → Lamp Mode	Manual / Reset
Personality → Lamp	Off / On
Display → Display Rotate	Normal / Rotate 180
Display → Screen Lock	Off / On
Display → Language	English / Chinese
Motor Reset → All	No / Yes
Motor Reset → Pan/Tilt	No / Yes
Motor Reset → Effect	No / Yes
Manual Control → 000	0-255
Scene Editing → Scene1	Scene state / Hold time / 000
Scene Editing	Scene2 / Scene3
DMX Live → 000	0-255
Service → Password → Calibration → Motor → Pan	-128 → 127
Service → Password → Calibration → Motor → 000	-128 → 127
Service → Factory Default	No / Yes
Service → Clear Power On Time	No / Yes
Service → Clear Lamp Hours	No / Yes
Information → Power On Time	xxxxxH
Information → Lamp Hours	xxxxxH
Information → SW Version	1U: Vx.x.x / 2U: Vx.x.x / 3U: Vx.x.x
Information → RDM UID	0xxxxx-xxxxxxx

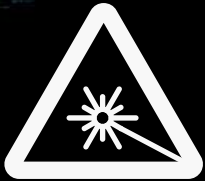
6. Control by Universal DMX Controller

6.1 DMX512 Connection



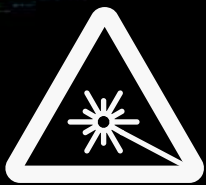
DMX signal-line connection diagram.

- 1 Terminate the final fixture in the DMX chain with a 120-ohm, 1/4W resistor connected between pin 2 (DMX-) and pin 3 (DMX+) of a 3-pin XLR plug.
- 2 Connect fixtures in a daisy chain from DMX OUT to the next fixture's DMX IN. Do not connect the DMX signal in parallel.
- 3 Use high-quality shielded DMX cable. Damaged cables, poor solder joints, or corroded connectors can distort the signal or stop communication.
- 4 The DMX input and output are pass-through connections that maintain the signal path when a fixture is powered off.
- 5 Each fixture must have a unique DMX start address between 1 and 512.
- 6 3-pin XLR: pin 1 = ground, pin 2 = data negative (-), pin 3 = data positive (+).
- 7 5-pin XLR: pin 1 = ground, pin 2 = data negative (-), pin 3 = data positive (+); pins 4 and 5 are not used.



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6.2 DMX Address Setting

Set each fixture to a DMX start address that allows enough consecutive channels for the selected mode. The FO25 uses 28 channels, so each fixture should begin 28 addresses after the previous fixture.

Press MENU to open the main menu.

Select DMX Setup, then select DMX Address.

Use UP and DOWN to choose an address from 001 to 512.

Press ENTER to save the address.

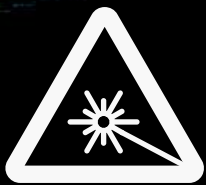
Channel Mode	Address Range	Unit 1	Unit 2	Unit 3	Unit 4
28CH	001-028	001	029	057	085

Addressing Example

In 28CH mode, use 001, 029, 057, and 085 for the first four fixtures. This prevents channel overlap.

6.3 DMX Channel (28CH Mode)

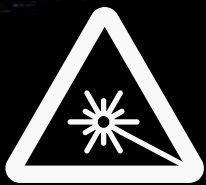
Channel	Function	DMX Value	Function / Description
1	Pan	000-255	0-540°
2	Pan Fine	000-255	0-2°
3	Tilt	000-255	0-270°
4	Tilt Fine	000-255	0-1.2°
5	Pan/Tilt	000-255	Fast to slow movement speed
6	Speed Strobe	000-003	OFF
6	Strobe	004-103	Pulse strobe, slow to fast
6	Strobe	104-107	Open
6	Strobe	108-207	Fast strobe
6	Strobe	208-212	Open
6	Strobe	213-251	Random strobe, slow to fast
6	Strobe	252-255	Open
7	Dimmer	000-255	0-100%
8	Dimmer Fine	000-255	0-100%
9	Cyan	000-255	0-100% saturation
10	Magenta	000-255	0-100% saturation
11	Yellow	000-255	0-100% saturation
12	CTO	000-255	0-100% saturation
13	Color Wheel 1	000-007	Open / White
13	Color Wheel 1	008-016	Color 1
13	Color Wheel 1	017-025	Color 2
13	Color Wheel 1	026-034	Color 3
13	Color Wheel 1	035-043	Color 4
13	Color Wheel 1	044-052	Color 5
13	Color Wheel 1	053-063	Color 6
13	Color Wheel 1	064-067	Open / White
13	Color Wheel 1	068-071	White + Color 1
13	Color Wheel 1	072-075	Color 1
13	Color Wheel 1	076-079	Color 1 + Color 2
13	Color Wheel 1	080-083	Color 2
13	Color Wheel 1	084-087	Color 2 + Color 3



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Channel	Function	DMX Value	Function / Description
13	Color Wheel 1	088-091 092-	Color 3
13	Color Wheel 1	095 096-099	Color 3 + Color 4
13	Color Wheel 1	100-103 104-	Color 4
13	Color Wheel 1	107 108-111	Color 4 + Color 5
13	Color Wheel 1	112-115 116-	Color 5
13	Color Wheel 1	255 000-007	Color 5 + Color 6
13	Color Wheel 1	008-016 017-	Color 6
13	Color Wheel 1	025 026-034	Open / White
14	Color Wheel 2	035-043 044-	Open / White
14	Color Wheel 2	052 053-063	Color 1
14	Color Wheel 2	064-067 068-	Color 2
14	Color Wheel 2	071 072-075	Color 3
14	Color Wheel 2	076-079 080-	Color 4
14	Color Wheel 2	083 084-087	Color 5
14	Color Wheel 2	088-091 092-	Color 6
14	Color Wheel 2	095 096-099	Open / White
14	Color Wheel 2	100-103 104-	White + Color 1
14	Color Wheel 2	107 108-111	Color 1
14	Color Wheel 2	112-115 116-	Color 1 + Color 2
14	Color Wheel 2	255 000-004	Color 2
14	Color Wheel 2	005-009 010-	Color 2 + Color 3
14	Color Wheel 2	014 015-019	Color 3
14	Color Wheel 2	020-024 025-	Color 3 + Color 4
14	Color Wheel 2	029 030-034	Color 4
14	Color Wheel 2	035-039 040-	Color 4 + Color 5
14	Color Wheel 2	044 045-049	Color 5
14	Color Wheel 2	050-054 055-	Color 5 + Color 6
14	Color Wheel 2	059 060-064	Color 6
14	Color Wheel 2	065-069 070-	Open / White
15	Static Gobo	074 075-079	Open / White
15	Static Gobo	080-084 085-	GOBO 1
15	Static Gobo	089 090-094	GOBO 2
15	Static Gobo	095-099 100-	GOBO 3
15	Static Gobo	104 105-109	GOBO 4
15	Static Gobo	110-114 115-	GOBO 5
15	Static Gobo	119 120-124	GOBO 6
15	Static Gobo		GOBO 7
15	Static Gobo		GOBO 8
15	Static Gobo		GOBO 9
15	Static Gobo		GOBO 10
15	Static Gobo		GOBO 11
15	Static Gobo		GOBO 12
15	Static Gobo		GOBO 13
15	Static Gobo		GOBO 14
15	Static Gobo		Pattern 2 shakes from slow to fast
15	Static Gobo		Pattern 3 shakes from slow to fast
15	Static Gobo		Pattern 4 shakes from slow to fast
15	Static Gobo		Pattern 5 shakes from slow to fast
15	Static Gobo		Pattern 6 shakes from slow to fast
15	Static Gobo		Pattern 7 shakes from slow to fast
15	Static Gobo		Pattern 8 shakes from slow to fast
15	Static Gobo		Pattern 9 shakes from slow to fast
15	Static Gobo		Pattern 10 shakes from slow to fast
15	Static Gobo		The pattern 11 shakes from slow to fast



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Channel	Function	DMX Value	Function / Description
15	Static Gobo	125-129 130-	The pattern 12 shakes from slow to fast
15	Static Gobo	134 135-139	The pattern 13 shakes from slow to fast
15	Static Gobo	140-189 190-	The pattern 14 shakes from slow to fast
15	Static Gobo	205 206-255	Forward rotation, fast to slow
15	Static Gobo	000-009 010-	stop
15	Static Gobo	019 020-029	Reverse rotation, slow to fast
16	Rotating Gobo	030-039 040-	Open / White
16	Rotating Gobo	049 050-059	GOBO 1
16	Rotating Gobo	060-069 070-	GOBO 2
16	Rotating Gobo	079 080-089	GOBO 3
16	Rotating Gobo	090-099 100-	GOBO 4
16	Rotating Gobo	109 110-119	GOBO 5
16	Rotating Gobo	120-129 130-	GOBO 6
16	Rotating Gobo	139 140-149	GOBO 7
16	Rotating Gobo	150-200 201-	Pattern 1 shakes from slow to fast
16	Rotating Gobo	205 206-255	Pattern 2 shakes from slow to fast
16	Rotating Gobo	000-127 128-	Pattern 3 shakes from slow to fast
16	Rotating Gobo	189 190-193	Pattern 4 shakes from slow to fast
16	Rotating Gobo	194-255 000-	Pattern 5 shakes from slow to fast
16	Rotating Gobo	255 000-007	Pattern 6 shakes from slow to fast
16	Rotating Gobo	008-255 000-	Pattern 7 shakes from slow to fast
16	Rotating Gobo	127 128-189	Forward rotation, fast to slow
16	Rotating Gobo	190-193 194-	stop
16	Rotating Gobo	255 000-007	Reverse rotation, slow to fast
17	Gobo Rotation	008-255 000-	Pattern position
17	Gobo Rotation	127 128-189	Reverse rotation, fast to slow
17	Gobo Rotation	190-193 194-	Rotation stop
17	Gobo Rotation	255 000-007	Forward rotation, slow to fast
18	Gobo Rotation Fine	008-255 000-	Fine positioning adjustment
19	Prism	255 000-255	No prism
19	Prism	000-255 000-	Prism 1
20	Prism Rotation	007 008-255	Prism angle adjustment
20	Prism Rotation	100-105 200-	Forward rotation, slow to fast
20	Prism Rotation	205 210-215	Rotation stop
20	Prism Rotation	220-235 240-	Reverse rotation, slow to fast
21	Prism 2	255	No prism
21	Prism 2		Prism 2
22	Prism 2 Rotation		Prism angle adjustment
22	Prism 2 Rotation		Forward rotation, slow to fast
22	Prism 2 Rotation		Rotation stop
22	Prism 2 Rotation		Reverse rotation, slow to fast
23	Frost		No Frost
23	Frost		Frost cut in
24	Zoom		0-100%
25	Focus		0-100%
26	Focus Fine		0-100%
27	Uniform Light		Uniform-light filter out
27	Uniform Light		Uniform-light filter in
28	Function		Off lamp
28	Function		On lamp
28	Function		XY reset
28	Function		Effect: Motor reset
28	Function		Full fixture reset

7. Troubleshooting

The following checks cover common operating problems. Disconnect power before inspecting cables, connectors, fuses, or internal components.

Symptom	Recommended Checks
Fixture does not operate; lamp and fans remain off	Verify the mains connection and main fuse. Measure the supply voltage. Check whether the power indicator illuminates.
Fixture does not respond to DMX	Check DMX cable direction and connector condition. Confirm the DMX start address and channel mode. Inspect the XLR sockets and signal cable for intermittent contact. Test with another controller. Keep DMX cable away from high-voltage cables and strong electromagnetic interference.

8. Cleaning and Maintenance

Regular cleaning is essential for maximum light output, reliable cooling, and long service life. Dust, dirt, and haze-fluid residue must not be allowed to accumulate on the housing, air paths, or optical surfaces. Cleaning frequency depends on the operating environment.

Disconnect mains power and allow the fixture to cool completely before cleaning.

Use a soft, lint-free cloth lightly moistened with quality glass-cleaning fluid for external optical surfaces. Do not use solvents, abrasive cleaners, or excessive liquid.

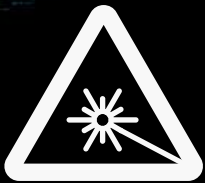
Dry all parts carefully before reconnecting power.

Clean the external optical lens at least every 20 days, and more often in dusty or smoke-heavy environments.

Inspect seals, connector caps, mounting hardware, and the safety cable during routine maintenance.

Service Reminder
Lamp replacement, internal optical cleaning, calibration, and repairs must be performed by qualified service personnel.

Model: FO25
Product: 420W IP66 BSW Moving Head Light
Manufacturer Website: www.starshinelights.com



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