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FIBRE OPTICS

Ruby's Diner – FT24 Side Emitting Fibre with 150W FOP–MH and blue filter

Fibre Optics

Free of projected heat or UV • Light output and colour temperature options
Continuous linear illumination • Pinpoint directional illumination
Simple, low maintenance

Fibre Optic Lighting

There are applications where Fibre Optics come into their own:

- Lighting in positions where maintenance of lamps in-situ would be difficult or impossible, like above an atrium or swimming pool. This also applies to linear coffer lighting where our high output side emitting fibre is very cost effective, particularly if colour changing is required.
- Where it is critical to have no projected heat or UV-like some museum displays.
- Where the heat generated by the amount of lighting in some jewellery display cabinets is excessive, Fibre Optics mean that projectors can be in an easily maintained and separately air conditioned space.
- With no lampholders or heat issues end fittings can be very small or integrated into cabinets.
- For lighting in aggressive environments like walk in freezers, fountains and other water features, Fibre Optics enable the light source to be in a protected area.
- To create a wide range of decorative effects, colour filters and shimmer wheels etc. can be used.

Fibre Optic systems comprise the projector - containing the light source, a “light guide” harness to transmit the light, and end fittings to direct and focus it. Projectors are chosen from a range of options depending on the amount of light required, colour temperature, dimming and any other features like colour changing wheels and control.

Harnesses are always custom made for the project with regard to both diameter and length. Applications may use a large number of small diameter tails – creating smaller outputs (like a star ceiling) or a small number of large diameter tails - for lighting a feature or display.

Fibre Optic systems are always application specific, so call us for technical guidance with design and specification.

FIBRE OPTICS

FT Side Emitting Polymer Fibre

The unique 'prism-cut' method within the polymer (PMMA) core, is combined with an integral white reflector, to direct high brightness illuminance through a 60º output angle. This achieves more than 5 x the output of conventional side emitting stranded fibre, so can be used to effectively light coves etc.

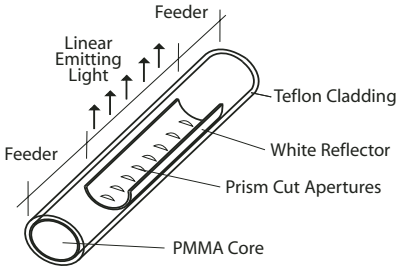
Continuous high brightness appearance

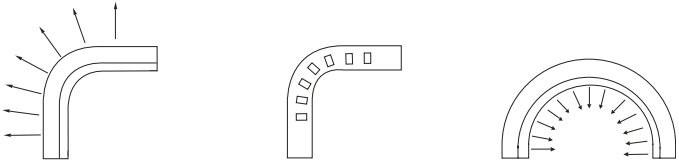
Linear illumination

Lengths up to 20m

Simple, low maintenance

Single or dual end feed





Two diameters are available, both of which can be single or dual end fed and are used in conjunction with projectors for PMMA harness. Practical maximum lengths of 10m for single end feed, or 20m for dual end feed are recommended. A 'feeder' section of clear PMMA provides the link between the reflector section and the light collector end. The tube is flexible in all planes to achieve illumination from internal and external bends and laterally. FT Fibre is particularly effective when used in colour-wash and colour-changing applications.

Order Codes and Specifications

Code	Sleeve Ø	Core Ø	Bend Radius	Weight g / m.	Tail qty. per collector end
FT19	19.3mm	13mm	min. 160mm	330	1 or 2
FT25	25.5mm	19mm	min. 300mm	650	1 only

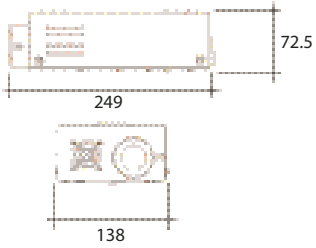
Feeder section lengths are required at all light collector ends: 300mm minimum.
FT Harnesses are supplied complete with fixing clamps (3 per metre)

Projectors

Fibre Optic projectors are purpose designed to meet the technical requirements of Glass and PMMA harnesses. All projectors need to be placed in ventilated areas with airspace around them. In addition, PMMA projectors use hot mirrors and air ducting to reduce the heat on the common end of the harness. The following projectors are the commonly used ones – final selection and specification will depend on the requirements of the project.

FOP-THS

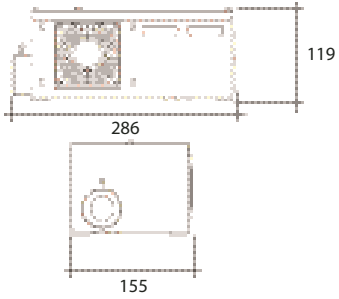
Slimline Tungsten Halogen projector with low noise fan and integral transformer.
Optional colour filter available



Options for FOP-THS		Suffix
Specify Glass or Plastic harness		/G or /P
Colour Filter		/CF
Lamps:		
50W	3000°K	360 lumens
75W	3000°K	500 lumens

FOP-TH

Tungsten Halogen projector with low noise fan and integral transformer. If this projector is to be dimmed, there needs to be a separate mains feed to the fan to maintain cooling.



Options for FOP-TH		Suffix
Specify Glass or Plastic harness		/G or /P
Colour Wheel		/CW
- 50W or 75W = yellow, green, red, orange, blue		
- 100W = clear, yellow, green, red, purple, blue		
Shimmer wheel		/SW
for Dimming (separate feed to fan)		/D
Lamps:		
50W	3000°K	360 lumens
75W	3000°K	500 lumens
100W	3000°K	800 lumens

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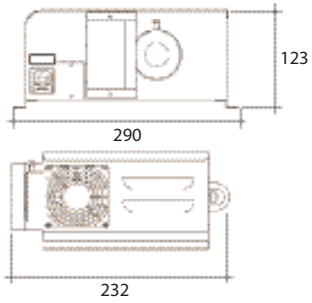
FOP-MH

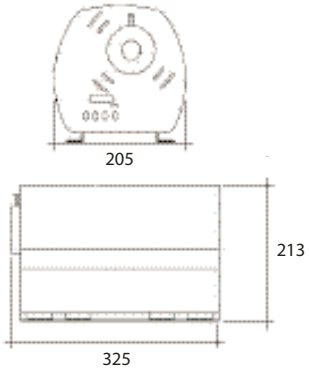
Metal Halide projector with low noise fan and integral gear. If dimming control is required a dimming wheel is fitted with a separate switched feed. To maximise lamplife (plus 10%) and achieve smoother startup electronic gear can be specified.



Options for FOP-MH		Suffix
Specify Glass or Plastic harness		/G or /P
Colour Wheel - 50W or 75W = yellow, green, red, orange, blue - 100W = clear, yellow, green, red, purple, blue		/CW
Shimmer wheel		/SW
Dimming Wheel (separate feed)		/DW
Electronic Gear		/EG
Lamps: 12000 hour life		
70W	3000°K	6200 lumens
70W	4200°K	6000 lumens
150W	3000°K	14000 lumens
150W	4200°K	13000 lumens

FOP-DMX

A 150W Metal Halide projector with 8 segment colour wheel (Clear, Yellow, Pink, Blue, Green, Red, Cyan, Purple) and dimmer shutters. Where precise colour changing control is required over several projectors and for scene selection FOP-DMX can do most things. We can provide a control module with USB cable and software for downloading set scenes and colour sequences from a laptop if required.



Light Guide Harnesses

Can be manufactured from 50micron 130dB minimum glass strands or PMMA polymer which has better optical characteristics, but cannot be randomised at the common end as effectively as the finer glass stands. Unless particularly long harnesses are required, glass generally makes a better harness, but call for advice.

Available to a maximum 10 metre length each harness is sleeved, manufactured to specified length (not extendable), and the ends polished for maximum transmission. The proportion of light emitted from the light projectors, together with the quantity of tails per harness is dependent on the active diameter of each tail:

Glass harness sizes:

SIZE	APPROXIMATE ACTIVE DIAMETER	APPROXIMATE OUTER DIAMETER	MAXIMUM No. OF TAILS PER LIGHT SOURCE	MINIMUM BEND RADIUS	TERMINATION TYPE(S
1	1mm	2.3mm	400	7mm	crimp
1.5	1.5mm	2.7mm	270	10mm	crimp
2	2mm	2.8mm	135	15mm	crimp/3mm
8	3mm	4.9mm	68	18mm	M8/M10 ferrule
14	4mm	6.4mm	38	20mm	M8/M10 ferrule
18	5mm	7.4mm	25	40mm	M8/M10 ferrule
24	6mm	8.7mm	17	50mm	M8/M10 ferrule
36	7mm	10.1mm	12	70mm	M10 ferrule
48	8mm	10.7mm	10	90mm	M10 ferrule

Sizes 24,36 and 48 are fitted with silicone boot ends to achieve a minimum bend radius of 25mm as the tail enters the end fitting.

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Fibre Optic End Fittings

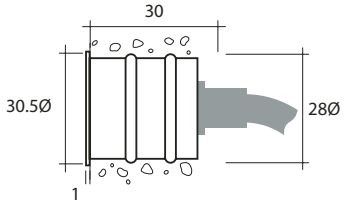
Light is emitted from the polished end of the harness tail at a nominal 60º angle and for some applications, this is sufficient.
For specific highlighting and downlighting applications, a lensed end fitting may be used, which focuses and directs the projected light. A small selection is shown below which covers some popular applications, however once a project is discussed others may fulfil the requirements.

Fibre Optic size C tails are fitted flush within a timber plinth, to uplight a glass enclosure with mirror top.

FO41

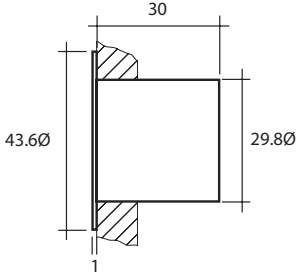
Fixed Indicator light and Wall or Uplight (with clear glass) to accept M10 Tail - for exterior and submersed installation. 'O' rings provide retention.

Finish – Stainless steel.
Use suffix /F or /C for frosted or clear glass.



/479

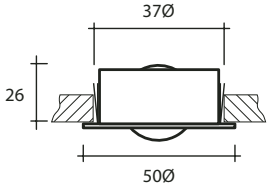
Stainless Steel Installation sleeve with flange. Available polished or brushed.



FO71

Directional downlight to accept M10 Tail Beam angle 30-50º - Tilt 20º - Rotation 350º

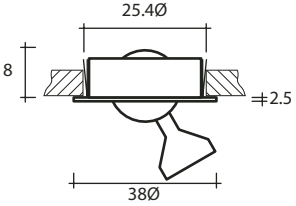
Finish – **powdercoat white**



FO76

Semi recessed articulated downlight to accept M7 Tail Beam angle 15-30º - Tilt 40º - Rotation 350º.

Finish – **powdercoat white**



FO80

Fixed Indicator light with frosted acrylic lens. The bezel is the same size as our FL180. This helps maintain a style if these are used in more exposed areas on a deck (like the swim platform) when FL180s are used elsewhere.

Finish - **Stainless Steel.**