Selecting a Fiber Optic light source

FOI Series

R150 Series

21AC Series

21DC Series

Types of light sources:

General purpose illuminators: (models FOI-150, FOI-250, 21AC)
Typically these models use a transformer to reduce line voltage to the 21v needed for the lamp. The output level is controlled by either a rheostat (simplest) or a very basic electronic control circuit. These models are suitable for most stereo microscope applications.

AC Stabilized illuminators: (models R150A1, R150A2)
These models have a stabilization circuit on the AC input to help reduce AC line induced fluctuations and add a 'soft-start' circuit to the illuminator for increased lamp life. The AC stabilized models are improvements over basic light sources for most non-critical lighting and photography applications.

AC/DC regulated illuminators: (models R150MV1, R150MV2, R150BM1, 21DC)
Regulated illuminators provide a very stable output voltage to the lamp by utilizing regulation circuits with close tolerances. DC regulated models supply the lamp with DC voltage rather than AC which can provide longer lamp life. Both types are excellent choices for machine vision applications and all critical light control installations. These models also typically have remote control options.

Options:

IRIS : (Option available on R150, 21AC, and 21DC models)
This option places a user adjustable iris (aperature) in the light path. The purpose of this option is to allow reduction in light output without a change in the light color temperature.

Remote Control: (FOI-150-BREM, R150MV1, R150MV2, R150BM1, 21DC models)
There are 3 types of remote controls typically used:

1) tethered – a remote rheostat is connected to the illuminator with a low voltage electrical cord.
2) 0-5VDC – DC voltages are applied to the illuminator control input and varying this voltage controls the illuminator output intensity.
3) RS232 – TTL signals sent over an RS232 from a computer can control the light output.

Electro-Mechanical shutter: (21AC, 21DC models)
The output can be controlled to full output or no output using the electrical controlled shutter. This option finds applications in medical microscope systems where quickly shutting off light may be critical. Shutter rate is 2Hz.

Illuminator System Terms:
Color temperature: Usually expressed in ˚K (Kelvin) this represents the 'color' of the light. Typical illuminator lamps (EKE) are approx. 3200˚K. This color will shift from a reddish tint at lower output setting toward a more blue light color as the intensity is increased. Our eyes automatically compensate for this shift so the light continues to look the same color but the color shift is particularly noticeable when photography is involved as the pictures will shift in color as the light intensity is changed.
In order to maintain color consistency in microscope photography use of an IRIS model illuminator will allow the maximum intensity to be set with the basic intensity control and light output reductions, as needed, will be accomplished by reducing the output iris aperature. No color shift occurs since the voltage to the lamp remains the same, only the aperature diameter is smaller so less light goes to the fiber light guide.

Universal input: (R150MV1, R150MV2, R150BM1, 21DC models)
These illuminator models will work on any AC line voltage from 90-240VAC, 50-60Hz making them the best choice for worldwide useage. Typical basic illuminators are offered in either a fixed 110VAC or 220VAC and would need a transformer to be used with other line voltages.

Soft-Start: (R150 models - all)
This feature provides increased lamp life by ramping up the voltage to the lamp slowly, preventing a sudden power-on current rush that blows the lamp filament.

Integral IR filter: (R150 standard, optional most others)
These models have a Infa-red (IR) blocking filter inserted in the light path. This filter blocks IR energy (> 700nM wavelength) from the optical fibers which can extend the life of the fibers and prevents IR from reaching the specimen at the fiber output. If the IR spectrum is needed in your application (e.g.- forensic GSR imaging) than choose a model without this filter or contact us to have the filter removed.

Analog remote output control: (R150MV1, R150MV2, R150BM1, 21DC)
Models with this option allow the illuminator output to be controlled with 0-5VDC supplied to an input on the illuminator. This input voltage will vary the illuminator output from 0% (0VDC supplied) to full intensity (5VDC) or any intensity in-between. This is useful in computer controlled applications and many OEM applications where locating the intensity control far from the light source is required.