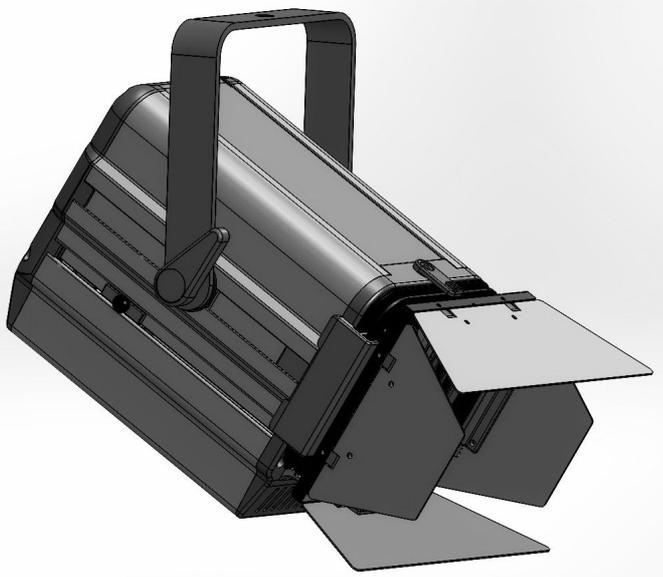*THEATRELIGHT NZ*

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TL-F1000 Fresnel Spotlight

F1000 Theatre version

F1000 Display version

With twice the light output of Theatrelight's popular F500, the TL-F1000 is a white LED Fresnel spotlight suitable for general lighting in theatres and TV studios, and for Film, exhibition and lighting display including art galleries and museums. It is available fitted with colour runners to hold colour or UV filters and beam shaping barndoors for Theatre, TV and Film use, or without colour runners for general display use. The model can be changed by the customer as the parts are supplied for the other model.

A number of lens types, wattage ratings, and colour temperature options are available in both models, with either 3 or 5 pin XLR connectors. The F1000 can also be ordered fitted with an internal wireless DMX card by Lumen Radio (WDMX compatible) with either an internal or external high gain antenna.

The major benefits over an equivalent spotlight using an incandescent bulb are the marked savings in power and maintenance costs. The performance is better than a standard 1000 watt incandescent Fresnel, but at 20% of the power costs. In addition, whereas most Theatre or TV rated incandescent bulbs are expensive and have a lifetime of under 750 hours, the F1000 has an expected lifetime in excess of 20,000 hours, resulting in much reduced lamp replacement and maintenance costs. Additionally the very low Infra-Red and UV output of LED luminaires makes the F1000 ideal for display and Museum lighting. The F1000 LED module is manufactured to Theatrelight specifications using Osram LED chips with an integrated collimating lens for maximum optical efficiency in conjunction with a high reliability pulse width modulated power supply.

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Specifications

Models	T: Theatre version - colour runners fitted (blanking pieces supplied)
	D: Display version - blanks fitted (colour runners supplied)
Housing	Anodised aluminium extrusion sides, molded front and back
Colour	Non-reflective black. Custom colours can be supplied for larger orders
Yoke	Anodised aluminium, with easy adjusting tilt lock
Input Power	90-250 vac, 50/60 Hz, 200 watts max
Working temperature	-30°C to +35°C ambient air temperature
Working position	Any
Humidity/IP rating	95% max, non-condensing/IP20 (indoor use only)
Expected lifetime	>20,000 hours (~10 years at 6 hours per day, 6 days a week)
Safety Standards	AS/NZS 3760
Dimensions/Weight	295mm long x 210 mm wide x 205 mm high, weight 3.9 kg

Back panel features

Power connector	IEC male (supplied with 2 m cable IEC to bare ends, or plug to order)
DMX input	/X5: XLR 5 pin (standard) /X3: XLR 3 pin
	DMX isolated to 1Kv DC, 1/10th standard DMX load
DMX through	XLR 5 or 3 pin female to match input XLR
DMX addressing	Three digit thumbwheel sets DMX start from 1-512 (511 if 2 chn mode)
DMX chns used	Standalone mode, no DMX: Level control pot sets intensity/rate
	Mode switch 1-9 sets fade/effects
	One Channel mode, 1 DMX chn: DMX 1 or Level pot sets intensity/rate
	Mode Switch 1-9 sets fade/effects
	Two Channel mode, 2 DMX chns: DMX 1 or Level pot sets intensity/rate
	DMX 2 sets fade/effects
Mode switch	One digit thumbwheel (Modes 0 through 9)
Potentiometer	Sets minimum level (final intensity/rate is the higher of pot or DMX 1)
DMX fail behaviour	10 minutes hold, then 5 min fade out for Modes 1-5, off for Modes 6-9
Pushbutton actions	Test Fan/LED at Full / Cancel DMX held chns / Un-link in Wireless versions
Indicators	Green/Red Status LED- Green for DMX, Red for temperature indication
	Blue pushbutton LED- mimics LED level (or shows linked mode in Wireless DMX versions). All indicators except over-temperature are set off 5 minutes after power up

Dimming control

Intensity control	By DMX-512 with DMX address set by thumbwheel, or potentiometer level
PWM freq `	240Hz standard. 960Hz/12 bit option for TV and Film work to order
Fading resolution	16 bits (64,536 steps) at 240Hz on 8 bit fading DMX signal
Target resolution	8 bits (256 steps) on 8 bit non-fading DMX signal
Control Modes	The F1000 may be operated as a Standalone light, as a One Channel DMX controlled light, or as a Two channel DMX controlled light. In both Standalone and One Channel DMX mode, the fade or effects function is selected by setting the Mode Switch to 1-9. Two channel DMX mode is selected by setting the Mode Switch to 0, when the fade or effects function is defined by the second DMX channel level.

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The following list describes all modes:

Standalone Modes   If DMX is not connected, the Level potentiometer controls the intensity/rate of the fade/effects function set by the Mode switch:

Mode Switch set at 1: Fade time matches 250 watt tungsten bulbs
Mode Switch set at 2: Fade time matches 1K watt tungsten bulbs
Mode Switch set at 3: Fade time matches 1 kw tungsten bulbs
Mode Switch set at 4: Fade time matches 2 kw tungsten bulbs
Mode Switch set at 5: Fade time matches 5 kw tungsten bulbs
Mode Switch set at 6: Fire fade/flicker effect: Off, slow/dim to fast/bright
Mode Switch set at 7: Ramp cycle up/dn 0-100%: Off, 10 minutes to 0.5 sec fade cycle
Mode Switch set at 8: Random flash effect: Off, slow/dim to fast/bright
Mode Switch set at 9: Strobe flash effect: Off, 1 to 25 flashes per sec

One Chn Modes   If DMX is connected, the highest of the DMX Start Channel (DMX 1) and the Level potentiometer controls the intensity/rate of the fade/effects function set by the Mode switch:

Mode Switch set at 1: Fade time matches 250 watt tungsten bulbs
Mode Switch set at 2: Fade time matches 1K watt tungsten bulbs
Mode Switch set at 3: Fade time matches 1 kw tungsten bulbs
Mode Switch set at 4: Fade time matches 2 kw tungsten bulbs
Mode Switch set at 5: Fade time matches 5 kw tungsten bulbs
Mode Switch set at 6: Fire fade/flicker effect: Off, slow/dim to fast/bright
Mode Switch set at 7: Ramp cycle up/dn 0-100%: Off, 10 minutes to 0.5 sec fade cycle
Mode Switch set at 8: Random flash effect: Off, slow/dim to fast/bright
Mode Switch set at 9: Strobe flash effect: Off, 1 to 25 flashes per sec

Two Chn Modes   If DMX is connected and the Mode Switch set to 0, the highest of the DMX Start Channel (DMX 1) and the Level potentiometer controls the intensity/rate of the fade/effects function set by the *fader level of the DMX channel following the Start Channel* (DMX 2):
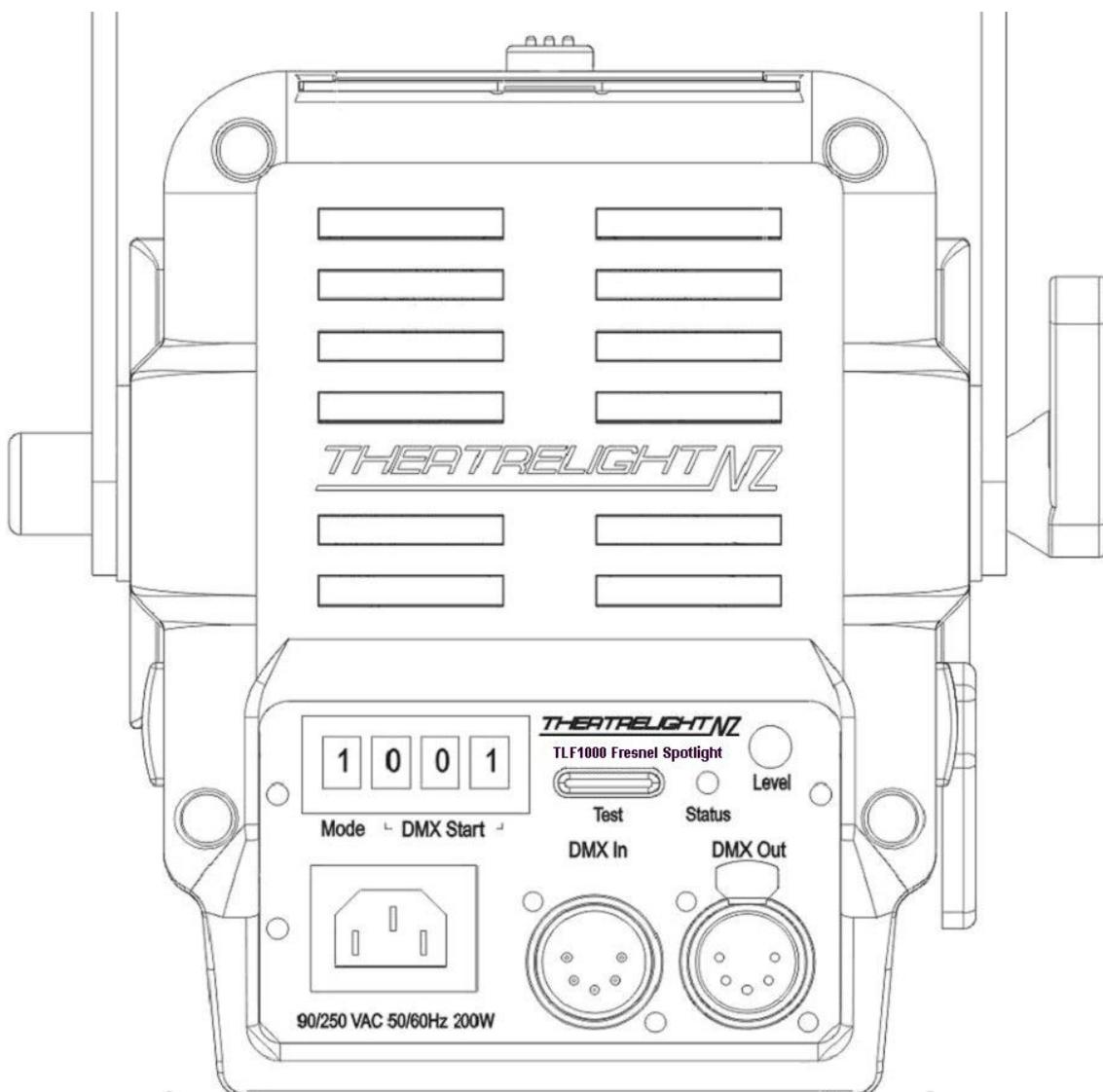
DMX 2 level set at 10%: Fade time matches 250 watt tungsten bulbs
DMX 2 level set at 20%: Fade time matches 1K watt tungsten bulbs
DMX 2 level set at 30%: Fade time matches 1 kw tungsten bulbs
DMX 2 level set at 40%: Fade time matches 2 kw tungsten bulbs
DMX 2 level set at 50%: Fade time matches 5 kw tungsten bulbs
DMX 2 level set at 60%: Fire fade/flicker effect: Off, slow/dim to fast/bright
DMX 2 level set at 70%: Ramp cycle up/dn 0-100+%: Off, 1 hour to 0.5 sec fade up/dn
DMX 2 level set at 80%: Random flash effect: Off, slow/dim to fast/bright
DMX 2 level set at 90%: Strobe flash effect: Off, 1 to 25 flashes per sec

Custom special effects can be supplied for larger orders

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Back Panel

Connectors:	Power:	IEC female
	DMX In:	male XLR 5 pin / male XLR 3 pin
	DMX out:	female XLR 5 pin / female XLR 3 pin
Thumbwheel:		4 pole switch, for setting fade/effects (Mode), and DMX Start address
Test Push switch:		Flashes the intensity/rate to 100%, cancels DMX held channels, tests fan at full (and unlinks Wireless DMX versions if held for >3 seconds)
Test Switch LED:		Blue LED mimics LED level (and shows link in Wireless DMX versions)
Status LED:		Green/Red LED for DMX and Temperature indication
Level:		0 to 100% preset for standalone or minimum intensity/rate

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Extras

Colour Frame	Anodised aluminium, for colour gels, filters, diffusers etc 160 mm square, weight 41g
Barndoors	Anodised aluminium, fully rotating, fitted with safety wire and clip 160 mm square, weight 270g
Lenses	Hard edge /LH, Medium edge /LM (standard), Soft edge /LS

Wireless DMX Option

Lumen Radio	/W: Fitted internally with Lumen Radio CRDMX card and internal antenna (standard), or /WX: external antenna for longer ranges. The Lumen Radio receiver is compatible with Wireless Solutions WDMX signals

Optical

Lens	Fresnel lens, 128.5mm diameter x 90mm focal length, optical grade PMMA, laminated diffuser
Lens options	Hard edge /LH, Medium edge /LM (standard), Soft edge /LS (lens specified at time of order; also available as optional extras)
Focus adjustment	Slide action with quick locking cam

LED

LED Module	Made to Theatrelight specifications using Osram LED chips with integral collimating optical glass lens
LED cooling	Fan cooled, extruded aluminium micro-finned heat sink
LED colour options	/32K: TV and Theatre Incandescent standard (3,200°K ±200K), CRI >95 /56K: Daylight Film (5,600°K ±400K), CRI >90 (~25% more lux than 3200K) /80K: Cool White (8,000°K ±500K), CRI >80 (~40% more lux than 3200K) Other colour/CRI choices to customer specification for larger orders
Fan control	Variable fan speed depending on LED temperature
Fan noise	LED at 100% at 20°C ambient: < 38 dbA at 1 meter LED at 100% at 25°C ambient: < 41 dbA at 1 meter (Both measurements at noise floor 33dbA) The fan is off when the LED module temperature is below 40°C

Maintenance and Warranty

Maintenance	For best light output, schedule a regular dust clean of the lens, LED collimating lens, heatsink fins, and fan blades
Warranty	2 years limited warranty
Usage record	To assist our reliability program, the F1000 records the following data: Power on hours, LED hours, fan hours, maximum air temperature, maximum LED temperature, maximum fan level.

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Photometric Data

Beam angle   7.5° - 45°
Typical useful throw 5m- 15m
UV A/B/C content   Less than 0.005 watts/sq meter (< 0.1 μwatt/sq cm)
Infra Red content   Less than 0.5 watts/sq meter (< 10 μwatt/sq cm)

Beam Angles and Lux Table

For 3200°K incandescent TV white, and 5,600°K Daylight Film phosphors
Lux measured at beam centre, beam width measured at 50% Lux
Lux tolerance +/- 20%

TL-F1000 Theatre, Spot focus

Distance (m)	2	3	4	5	6	7	8
Beam Diam (m)	0.24	0.36	0.48	0.60	0.72	0.84	0.96
Lux 3200K 95 CRI	60,000	27,000	15,000	9,600	6,600	4,800	3,750
Lux 5600K 95 CRI	75,000	33,300	18,750	12,000	8,3000	6,100	4,700

TL-F1000 Theatre, Flood focus

Distance (m)	2	3	4	5	6	7	8
Beam Diam (m)	1.6	2.4	3.2	4.0	4.8	5.6	6.4
Lux 3200K 95 CRI	2,000	900	500	320	220	160	125
Lux 5600K 95 CRI	2,500	1,100	625	400	275	205	155

Ordering information

F1000 options:

Model	*Colour*	*Connector*	*Lens*	*Wireless*
T: Theatre	32K: 3200K	Blank: XLR-5	Blank: Medium edge	Blank: No wireless
D: Display	56K: 5600K	X3: XLR-3	LH: Hard edge	W: Internal antenna
	80K: 8000K		LS: Soft edge	WX: External antenna

Theatre model example, no wireless card fitted:
TLF1000T/32K is a Theatre model (fitted with colour frame runners), colour 3,200K, XLR 5 connectors, and no wireless card

Display model example with wireless card fitted:
TLF1000D/80K/X3/W is a Display model (no colour frame runners), colour 8,000K, XLR 3 connectors, fitted with Lumen Radio wireless card and internal antenna

- Due to the continual improvement in LED and phosphor research, Theatrelight reserves the right to make changes to this specification at any time.

Version date: July 10 2018

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