



**INDUCTION LIGHTING SYSTEMS  
TROUBLESHOOTING GUIDE**

7/15/11

**CONDITION: LAMP FLICKERING**

<p><b>1. Generator-Lamp/Power Coupler Compatible</b></p>	<p>Fulham induction systems are designed to operate with specific wattage compatibility. Operating unlike lamps and generators (wattage rating) can cause inconsistent lamp output and thermal build-up in the lamp. Prolonged operation can result in reduce life and/or early failure of the lamp and generator.</p>	<p>Contact Fulham if you believe you have received system components that are not compatible.</p>	
<p><b>2. Wiring Conditions</b></p>	<p>Good contact between the Generator and Lamp is critical to consistent lamp output.</p>	<p>Check wiring for good contact.</p>	
<p><b>3. Input Line Voltage Fluctuations</b></p>	<p>Fulham Generators are Universal Voltage 120v-277v and operate within <math>\pm 10\%</math> tolerance; prolonged low voltage can affect the lamp performance and/or life of the system components.</p>	<p>Contact a licensed electrician to verify and correct input line voltage fluctuations.</p>	
<p><b>4. Generator Output Wire - Damaged</b></p>	<p>Fulham induction systems are pre-wired with shielded wires from the Generator to the Lamp and with UL approved connectors. The output wire must not be crushed or wound beyond the Fulham Specification.</p>	<p>If you find kinks or crush marks contact Fulham for a replacement output wire. If you suspect the wire is wound too tight but not damaged release the coil and test the system.</p>	

<p><b>5. Generator Output Wire – Length</b></p>	<p>Fulham output wires have a maximum length specification and should not be spliced without contacting Fulham.</p>	<p>If you have spliced the output wire between the Generator and Lamp contact Fulham for assistance in determining if the length is exceeding the maximum specification.</p>	
<p><b>6. High Operating Temperature</b></p>	<p>Fulham Lamps and Generators are designed to operate within an acceptable operating temperature range. Exceeding maximum specification can affect the lamp stability and light output. Prolonged operation at high temperatures can result in reduced life and/or early failure of the lamp and generator.</p>	<p>Contact Fulham for assistance.</p>	
<p><b>7. Inconsistent Wattage Output</b></p>	<p>Fulham Generators are designed to operate with a Constant Wattage Output of <math>\pm 5\%</math>; Prolonged operation beyond the tolerance can result in lamp instability.</p>	<p>Contact Fulham if you believe the Generator is not operating consistently.</p>	
<p><b>8. End of Lamp Life</b></p>	<p>Fulham Induction Systems are designed to operate for many years; rate average life is based on expected lamp life in accordance with a mortality curve which takes into account larger numbers of lamps under specified conditions.</p>	<p>Contact Fulham for assistance.</p>	

## CONDITION: LAMP OUTPUT - LOW

<p><b>1.</b> Low lamp output after first ignition.</p>	<p>Fulham induction lamps are pre-tested at the factory and burned in for a specified period of time; temperature conditions can affect lamp stabilization.</p>	<p>Allow lamp to stabilize for a minimum of 1-hour and re-check lamp output.</p>	
<p><b>2.</b> Low lamp output after first ignition beyond 1 hour.</p>	<p>Fulham induction lamps are pre-tested at the factory and burned in for a specified period of time but temperature conditions can affect lamp stabilization.</p>	<p>Allow system to operate for 100 hours continuously or until lamp is stabilized with the 100 hours. If output is still low contact Fulham for assistance.</p>	
<p><b>3.</b> High Operating Temperature</p>	<p>Fulham Lamps and Generators are designed to operate within an acceptable operating temperature range. Exceeding maximum specification can affect the lamp stability and light output. Prolonged operation at high temperatures can result in reduced life and/or early failure of the lamp and generator.</p>	<p>Contact Fulham for assistance.</p>	
<p><b>4.</b> Low lamp output during extreme cold ambient operating temperature</p>	<p>Induction is hybrid fluorescent technology and affected by ambient and operating temperatures. If operating temperature is below 0°C in an open fixture or -20°C in a closed fixture light output can be lower until proper operating temperature is attained.</p>	<p>Wait to observe light levels until the minimum operating temperature is attained. If output is still low contact Fulham for assistance.</p>	
<p><b>5.</b> End of Lamp Life</p>	<p>Fulham Induction Systems are designed to operate for many years; rate average life is based on expected lamp life in accordance with a mortality curve which takes into account larger numbers of lamps under specified conditions.</p>	<p>Contact Fulham for assistance.</p>	

## SYSTEM IS INOPERATIVE AND/OR INCONSISTENT PERFORMANCE

<p><b>1. Input Power Condition</b></p>	<p>All electronic ballasts and generators have a peak current shortly after the mains is switched on; the inrush current must be considered in the electrical calculation when determining the number of Induction systems to be wired on a single circuit.</p>	<p>Contact a licensed electrician if circuit breaker will not maintain total electrical load on the circuit.</p>	
<p><b>2. Wiring Conditions</b></p>	<p>Good contact between the Generator and Lamp is critical to consistent lamp output.</p>	<p>Check wiring for good contact.</p>	
<p><b>3. In-line devices are faulty or no power to the device.</b></p>	<p>Fulham Induction Generators will operate with most in-line control devices; input fluctuations caused by in-line devices can result in the system not operating properly or failing to operate.</p>	<p>Contact a licensed electrician to verify input power to the generator is within allowed tolerance during operation with inline devices.</p>	
<p><b>4. Generator Output Wire -</b></p>	<p>Damaged Fulham induction systems are prewired with shielded wires from the Generator to the Lamp and with UL approved connectors. The output wire must not be crushed or wound beyond the Fulham Specification.</p>	<p>If you find kinks or crush marks contact Fulham for a replacement output wire. If you suspect the wire is wound too tight but not damaged release the coil and test the system.</p>	
<p><b>5. Generator Output Wire –</b></p>	<p>Length Fulham output wires have a maximum length specification and should not be spliced without contacting Fulham.</p>	<p>If you have spliced the output wire between the Generator and Lamp contact Fulham for assistance in determining if the length is exceeding the maximum specification.</p>	

<p><b>6. Lamp orientation</b></p>	<p>Fulham External and Internal lamps are designed to operate in a wide range of orientation. Specifications are provided in Fulham Technical Data Sheets and failure to operate lamp within the specification can result in a system not operating or operating properly.</p>	<p>Contact Fulham for assistance.</p>	
<p><b>7. System is new and will not operate. (External Lamp System) – Tubular/Circular</b></p>	<p>All Fulham Induction systems are pretested and burned in at the factory but occasionally during shipment or installation one of more of the components can be damaged.</p>	<p>Replace a lamp that is not operable with a lamp that is operating; if this does not solve the problem change the Generator with a Generator that is operable; contact Fulham for Warranty assistance.</p>	
<p><b>8. System is new and will not operate. (Internal Lamp System) – Bulb/Power Coupler</b></p>	<p>All Fulham Induction systems are pretested and burned in at the factory but occasionally during shipment or installation one of more of the components can be damaged.</p>	<p>Replace a lamp that is not operable with a lamp and Power Coupler that is operating; if this does not solve the problem change the Generator with a Generator that is operable; and contact Fulham for Warranty assistance.</p>	
<p><b>9. System failed during a power out or brown-out condition.</b></p>	<p>Fulham Generators are Universal Voltage; low voltage has minimal effect on the Generator while excessive voltage beyond the tolerance can cause the early failure of the Generator.</p>	<p>Check circuit breaker or contact a licensed electrician to verify the power supply is meeting full electrical load requirement.</p>	

<p><b>10. High Operating Temperature</b></p>	<p>Fulham Lamps and Generators are designed to operate within an acceptable operating temperature range. Exceeding maximum specification can affect the lamp stability and light output. Prolonged operation at high temperatures can result in reduced life and/or early failure of the lamp and generator.</p>	<p>Contact Fulham for assistance.</p>	
<p><b>11. Input Line Voltage Fluctuations</b></p>	<p>Fulham Generators are Universal Voltage 120v-277v and operate within <math>\pm 10\%</math> tolerance; prolonged low voltage can affect the lamp performance and/or life of the system components.</p>	<p>Contact a licensed electrician to verify and correct input line voltage fluctuations.</p>	
<p><b>12. System was working but became inoperable after a few hours of operation and confirmed not caused by #1 - #11.</b></p>	<p>Fulham Generators are pre-tested at the factory to minimize premature failure.</p>	<p>Contact Fulham for Warranty assistance.</p>	