

## Violux Multi 4, 6 & 10 Lighting System Trouble Shooting Chart: S/N 8810 And Up

Problem	Possible cause or symptom	Test Procedure	Remedy
<b>Lighting System Does not Turn On</b>			
Main Power Contactor does not energized	No electrical power to equipment	Check power line fuses or circuit breakers.	
	Power is present but the main power contactor will not energized	<ol style="list-style-type: none"> <li>1. Check for 220 VAC at Coil terminals of K1 If there is voltage check the K1 contactor</li> <li>2. Check for 220 VAC at ter. # 2 &amp; 4 on rear of PCB, if not present check F1</li> <li>3. Check for 220 VAC at ter. # 2 &amp; 6 on front of PCB, if not present check 5.6w 10 W resistor on PCB</li> <li>4. Check for 220 VAC at ter. # 12 &amp; 6 on front of PCB, if not present check on/ off switch</li> </ol>	<ol style="list-style-type: none"> <li>1. K1 P/N is 63794</li> <li>2. F1 P/N is 63337</li> <li>3. Resistor 5.6w 10 Watt</li> <li>4. On / Off switch is P/N 71384</li> </ol>
		5. Check for 220 VAC at ter. # 10 & 6 on front of PCB, if not present check Lamp safety thermostat, F5	5. F5 P/N is 72202
Main exposure lamp does not light but contactor Energizes	Exposure Lamp is too hot to restart	Allow Exposure lamp to cool down for at least five minutes before attempting to restart.	
	Exposure Lamp, E1, is defective or has reached end of operating life.	Check Exposure Lamp for glass or electrode damage.	If Exposure Lamp is defective replace with a) VM 4 Multi Spec. THS 4027; Diazo THS 4020 b) VM 6 Multi Spec. THS 6027; Diazo THS 6020 c) VM 10 Multi Spec. THS 8027
	Defective starter	Check igniter , GZ 501, on starter circuit board in Power Supply for proper firing. Replace igniter if it does not glow at all or glows steadily when the lamp is not lit. If problem still exists replace circuit board A1	<ol style="list-style-type: none"> <li>1. GZ 501 is P/N 33309</li> <li>2. Circuit Board A1,                              a) VM 4 P/N is 56869                              b) VM 6 P/N is 56855                              c) VM 10 P/N is 56820                         </li> </ol>
	Main power transformer defective	On the main transformer (T1) <ol style="list-style-type: none"> <li>1. Check voltage between terminals 2 &amp; 4 for 220 VAC (+/- 10 Volts)</li> <li>2. Remove the wire on terminal # 6 Check voltage between terminals 4 &amp; 6 for 800 VAC</li> </ol>	If Main Transformer (T1) is defective replace a) VM 4 P/N is 44051 b) VM 6 P/N is 44052 c) VM 10 P/N is 44053

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	Poor connection in lamp circuit	Check the following wire connections 1. K 2 & K3 Contactors 2. The Circuit board connections 3. The Lamp Holder connections	
<b>Lamp lights and than goes out</b>	Switching from low power start up to early.	Observe the operation of K2 relay. On start up it energizes and remains energized for 2 minutes and than releases. If it releases early than start the unit with the economy switch set to the Econo position. After 2 Minuets set the economy switch to normal position. If the lamp remains lit than replace the PC Board	Circuit Board A1, a) VM 4 P/N is 56869 b) VM 6 P/N is 56855 c) VM 10 P/N is 56820
	<b>Caution</b> Before evaluating the capacitors, make shore that they are discharged. Each bank of Capacitors has a bleeder resistor across it, but if a capacitor is defective, its mate will lose its discharge path and remain charged.		
	Defective Capacitor in Medium Power Capacitor Bank	Set the Economy switch to the Eco Position and allow the lamp to warm up for at least 3 minuets. Make an exposure on High power. The lamp current should be 12.5 Amps on high power. With out closing the shutter, switch the lamp to medium power, the lamp current should drop to 6.5 Amps. If it drops to 4 amps or less than check the capacitors in the medium power bank	Capacitor P/N 5 mf is P/N 23758 10 mf is P/N 23321 20 mf is no longer available replace with up date conversion Kit. VM 6 is P/N 1108637 VM 10 Is P/N 1108636 30 mf is P/N 20972
	Exposure Lamp, E1, is defective or has reached end of operating life.	Check Exposure Lamp for glass or electrode damage.	If Exposure Lamp is defective replace with a) VM 4 Multi Spec. THS 4027; Diazo THS 4020 b) VM 6 Multi Spec. THS 6027; Diazo THS 6020 c) VM 10 Multi Spec. THS 8027
<b>Lighting System Draws very High Current</b>	Defective lamp	Check lamp Current Max current is 14.5 Amps.	If Exposure Lamp is defective replace with a) VM 4 Multi Spec. THS 4027; Diazo THS 4020 b) VM 6 Multi Spec. THS 6027; Diazo THS 6020 c) VM 10 Multi Spec. THS 8027
	Tap incorrectly set	Verify tap setting	

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<b>Lamp Does Not Switch To Proper Power Level</b>	1. Power level selector switch incorrectly set	Check switch position.	
	2. Defective Power Level selector switch	2. Check Power level switch for continuity.	2. Power Level selector switch is P/N 56821
	3. Defective High or low power contactor	Check that 220 VAC is present at the contactor coil during Exposure.	a) Low Power Contactor K2; is P/N 63796 b) High Power Contactor K3; is P/N 63856
	4. Defect in lamp ballast capacitors	4. Check lamp current draw in the 3 power levels a. High Power 12.5 Amps b. Medium Power 6.5 Amps c. Low Power 3.5 Amps	Capacitor P/N 5 mf is P/N 23758 10 mf is P/N 23321 20 mf is no longer available replace with up date conversion Kit. VM 6 is P/N 1108637 VM 10 is P/N 1108636 30 mf is P/N 20972
<b>Light Problems</b>			
Low Light Output	Lamp is near end of operating life	Check for blackening or distortion of Exposure Lamp. Does the lamp have more than 1000 hours? Replace lamp.	If Exposure Lamp is defective replace with a) VM 4 Multi Spec. THS 4027; Diazo THS 4020 b) VM 6 Multi Spec. THS 6027; Diazo THS 6020 c) VM 10 Multi Spec. THS 8027
	TAP improperly set	Check tap setting	
	Defect in lamp ballast capacitors	Check lamp current draw in the 3 power levels a. High Power 12.5 Amps b. Medium Power 6.5 Amps c. Low Power 3.5 Amps	Capacitor P/N 5 mf is P/N 23758 10 mf is P/N 23321 20 mf is no longer available replace with up date conversion Kit. VM 6 is P/N 1108637 VM 10 is P/N 1108636 30 mf is P/N 20972
	Reflector or glass dirty.	Clean reflector and glass	Use a good Quality Graphic Arts Glass Cleaner such as Theimoclean. P/N 85164
Long Exposures do to Vacuum Frame Glass	Does your glass cleaner have a polymer wax or UV block in it?	Expose a step scale through a piece of 1/4" Plate glass on top of the Vacuum Frame Glass, Then expose the same scale through the Vacuum Frame Glass. The 2 exposures should be the same.	Clean glass with alcohol and than a Graphics Arts quality glass cleaner, such as Theimoclean. P/N 85164. If the the problem continues, replace the Vacuum Frame Glass with Select Quality 1/4" Polished Plate Glass.

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	<p><b>Warning UV HAZARD</b></p> <p>When trouble shooting the shutter system or the cooling system the Exposure Lamp Should be disabled by removing the wire on terminal # 6 of the Main Transformer (T1)</p>		
<b>Shutter System</b>			
Shutter does not open or close	Problem with DC supply	<ol style="list-style-type: none"> <li>1. Check fuses F3 &amp; F4</li> <li>2. Check AC input to Bridge Rectifier (22 VAC between pins 12 &amp; 13 on rear A1 Board)</li> <li>3. Check DC output of Bridge Rectifier, Pin # 19, front of A1 Board Should be (+) 16 VDC during exposure, &amp; pin #20 (-)16 VDC in standby in reference to pin # 21</li> </ol>	<ol style="list-style-type: none"> <li>1. F3 or F 4 is P/N 63336</li> <li>2. Circuit Board A1,               <ol style="list-style-type: none"> <li>a) VM 4 P/N is 56869</li> <li>b) VM 6 P/N is 56855</li> <li>c) VM 10 P/N is 56820</li> </ol> </li> </ol>
Shutter Does Not Open	Expose relay K4 not actuating or providing a output to open shutter	<ol style="list-style-type: none"> <li>1. Check 110 VAC control input during exposure on pins # 14 &amp; 13 on front of A1 board</li> <li>2. If present and relay does not energize replace A1 board</li> </ol>	<ol style="list-style-type: none"> <li>1. If not present check integrator and interconnections to integrator.</li> <li>2. Circuit Board A1,               <ol style="list-style-type: none"> <li>a) VM 4 P/N is 56869</li> <li>b) VM 6 P/N is 56855</li> <li>c) VM 10 P/N is 56820</li> </ol> </li> </ol>
	Limit switch defective or Limit switch sticking	Check operation of "open" sensing limit switch S2	Limit switch, S2 is P/N 72104
	Shutter motor defective	Check for 12 VDC at Shutter Motor, M2	Shutter Motor, M2, is P/N 1108640
	Shutter or Shutter motor Gears worn	Visual examination of Gears	<p>A) Shutter Motor Gear is P/N 160432</p> <p>B) Shutter Assembly is P/N 161729</p> <p>(Shutter gears are available separately, but require a pinning operation to attach them to the shutters. Shutter Gear P/N 68714 ) ( For older machines the brass studs have to be replaced with steel P/N 100503</p>
Shutter Does Not Close	Expose relay K4 not deactivating or providing a output to close shutter	<ol style="list-style-type: none"> <li>1. Disconnect the integrator and make shore that the K4 relaxes. Pins # 14 &amp; 13 on front of A1 board has to be '0' VAC</li> <li>2. Check operation of K4 relay . Check DC output of Bridge Rectifier, pin #20 is (-)16 VDC in standby in reference to pin # 21</li> </ol>	<ol style="list-style-type: none"> <li>2. Circuit Board A1,               <ol style="list-style-type: none"> <li>a) VM 4 P/N is 56869</li> <li>b) VM 6 P/N is 56855</li> <li>c) VM 10 P/N is 56820</li> </ol> </li> </ol>

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	Limit switch defective or Limit switch sticking	Check operation of "close" sensing limit switch S1.	Limit switch, S1 is P/N 72104
Shutter Opens Or Closes Noisily	Limit switches out of adjustment		Adjust limit switches
	Braking diodes defective	Check braking diodes. Located under heat shrink at terminal # 8 in Lamp House.	Braking diodes are P/N 95516
<b>Lamp House Cooling System</b>			
Lamp swells	Lamp not cooled properly	<ol style="list-style-type: none"> <li>1. Check for obstruction at blower air intake. Remove obstruction, dust, dirt, paper ect.</li> <li>2. Is air intake over 95 deg F at blower</li> <li>3. Blower circuit defective</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove Blower from Lamp House and clean thoroughly</li> <li>2. Ventilate room properly</li> </ol>
Exposure Lamp Blower not functioning	Defective control Board, A1	<ol style="list-style-type: none"> <li>1. With Lamp Lit, Check lamp voltage on Control Board, A1, Terminals #3 &amp; 5. If it is over 180 Volts the blower circuit should turn on. If the voltage is low check the Exposure Lamp for proper operation</li> <li>2. Bypass blower control card by removing the wire from terminal #4 of the control board, A1, and attaching it to terminal #5 or # 6, which ever is open. If the blower works normally, the A1 board is bad.</li> </ol>	<ol style="list-style-type: none"> <li>1. If the lamp voltage is low, check lamp circuit for proper operation and than replace the lamp. (See lamp section for Info)</li> <li>2. Circuit Board A1, <ol style="list-style-type: none"> <li>a) VM 4 P/N is 56869</li> <li>b) VM 6 P/N is 56855</li> <li>c) VM 10 P/N is 56820</li> </ol> </li> </ol>
	Defective Low speed capacitors	Bypass the Blower circuit on the Control Board, A1. Check the Blower Voltage at Terminals 5 & 8 of the control board <ol style="list-style-type: none"> <li>1) High Power Exposure 211 To 230 VAC</li> <li>2) Medium Power Exposure 120 to 140 VAC</li> <li>3) Low power exposure 80 to 90 VAC</li> </ol>	<ol style="list-style-type: none"> <li>1) Voltage wrong on High Power Expo. Verify that the Tap is set Correctly, and that the fuse (F2) is on the 220 VAC ter. of T1</li> <li>2) Voltage wrong on med. Power Expo. Med. speed Cap. is defective. <ol style="list-style-type: none"> <li>a. VM 4 P/N 23738</li> <li>b. VM 6 &amp; 10 P/N 23739</li> </ol> </li> <li>3) Voltage wrong on Low Power Expo. Low speed Cap. is defective. <ol style="list-style-type: none"> <li>a. VM 4 P/N 23736</li> <li>b. VM 6 &amp; 10 P/N 23738</li> </ol> </li> </ol>
	Defective Blower	With the Lamp disabled, the Blower Control card by passed, and the lighting system on High Power Exposure, check for 220 Volts at the Blower Motor. If present and blower does not run, the blower motor and or the starting cap are defective.	<ol style="list-style-type: none"> <li>1. Exposure Lamp Blower Motor &amp; Capacitor <ol style="list-style-type: none"> <li>a. VM 4 Motor P/N 43457, Cap. P/N 23736</li> <li>b. VM 6 Motor P/N 43401, Cap. P/N 23737</li> <li>c. VM 10 Motor P/N 43401, Cap. P/N 23737</li> </ol> </li> </ol>
Lighting System turns off and power indicator Extinguishes.	1. Lamp house safety is sensing over temperature situation.	1. Check for over heating of Lamp House	1. Correct Cooling system problem and replace lamp house safety thermostat, P/N 72202.