

3000 LED Strobe Light



User Manual

Safety Information



Warning! Risk Group 3 LED product according to EN 62471. Do not view the light output with optical instruments or any device that may concentrate the beam.

This lighting fixture is for professional use only - it is not for household use. The fixture must be installed by a qualified technician. The safety of the installation is the responsibility of the installer. The fixture presents risks of severe injury or death due to fire hazards, electric shock and falls. Flashing light is also known to trigger epileptic seizures in persons who are sensitive to it. The fixture can produce powerful, concentrated light that can create a fire hazard or a risk of eye injury if the safety precautions below are not followed.

Respect all locally applicable laws, codes and regulations when installing, operating or servicing the fixture.



Protection From Electric Shock

- The 3000 LED fixture is for indoor use only. Do not expose it to rain or moisture.
- Disconnect the fixture from AC power before carrying out any installation or service work and when the fixture is not in use.
- Ensure that the fixture is electrically connected to ground (earth).
- Apply AC mains power to the fixture at 100 - 240 VAC nominal, 50/60 Hz only.
- Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.
- Before using the fixture, check that all power distribution equipment and cables are in perfect condition and rated for the current requirements of all connected devices.
- Isolate the fixture from power immediately if the power cable, power plug or any seal, cover or other part is damaged, defective, deformed, wet or showing signs of overheating. Do not reapply power until repairs have been completed and any defective parts have been replaced with new items.
- The cable used to connect the product to AC power must be 14 AWG or 1.5 mm² minimum conductor size and heat-resistant to 90° C (194° F) minimum. It must have three conductors and an outer cable diameter of 5 - 15 mm (0.2 - 0.6 in.). In the USA and Canada, the cable must be UL/CSA recognized, hard usage, type SJT or equivalent. In the EU, the cable must be type H05VV-F or equivalent.
- Connect only a cable with a Neutrik PowerCON TRUE1 NAC3FX-W female connector to the fixture's power input socket.



Protection From Burns and fire

- Do not operate the fixture if the ambient temperature (Ta) exceeds 40° C (104° F).
- The exterior of the fixture becomes hot during use. After 5 minutes of operation a surface temperature of 70° C (158° F) shall be expected, and the maximum steady state is 80° C (176° F). Avoid contact by persons and materials. Allow the fixture to cool for at least 10 minutes before handling.
- Keep all combustible materials (e.g. fabric, wood, paper) at least 20 cm (8 in.) away from the fixture.
- Keep flammable materials (e.g. volatile liquids, pyrotechnics, fuel of any kind) well away from the fixture.
- Ensure that there is free and unobstructed airflow around the fixture.
- Do not illuminate surfaces within 1 m (3 ft. 4 in.) of the Atomic 3000 LED.
- Do not expose the front glass to sunlight or other strong light source from any angle. Lenses can focus the sun's rays inside the fixture, creating a potential fire hazard.



Protection From Eye Injury



- Do not look at LEDs with magnifiers, telescopes, binoculars or similar optical instruments that may concentrate the light output.
- Do not operate the fixture with missing or damaged covers, shields or any optical component.
- To minimize the risk of eye irritation or injury, disconnect the fixture from power at all times when the fixture is not in use, and provide well-lit conditions to reduce the pupil diameter of anyone working on or near the fixture.



Protection From Injury

- To guard against risks from epileptic seizure:
 - Do not operate the fixture near stairways, in corridors or near public exits.
 - Provide advance notice that strobe lighting is in use. Display advisory notices at the point of ticket sales, on tickets if possible, in the program, and at the entrance(s) to the venue.
 - Avoid extended periods of continuous flashing, particularly at frequencies of 10 to 20 flashes per second. At flash rates below 5 flashes per second, it is estimated that only 5% of flicker-sensitive persons will be at risk of seizure.
 - Make sure that personnel at the venue are trained in the care of a person who is having an epileptic seizure and able to provide care if necessary.
 - If strobes are in use and a person has a seizure, switch the strobes off immediately.
 - Mount strobes as high above head height as practicable.
- Fasten the fixture securely to a fixed surface or rigging structure when in use. The fixture is not portable when installed.
- Block access below the work area and work from a stable platform whenever installing, servicing or moving the fixture.
- Make sure that all fasteners used to install the fixture are minimum grade 8.8 steel. Use unworn self-locking nuts on bolts and machine screws.
- When suspending the fixture, ensure that the supporting structure and all hardware used can hold at least 10 times the weight of all the devices they support.
- In all truss-mount installations where the fixture is not hanging vertically in 'free hanging mode', use a rigging clamp that completely encircles the truss chord, and bolt the clamp directly to the fixture's mounting bracket with a grade 8.8 strength bolt and unworn self-locking nut. Do not use any type of clamp that does not completely encircle the truss chord and do not use an omega bracket or any other intermediary rigging hardware.
- If you install the fixture in a location where it may cause injury or damage if it falls, install as described in this manual a secondary attachment such as a safety cable that is approved by an official body such as TÜV as a safety attachment for the weight that it secures. Fasten the safety cable to a secure anchoring point and to a safety cable attachment point provided on the fixture and indicated in this manual so that the safety cable will catch and hold the fixture if a primary attachment fails. Do not use any other part of the fixture as a safety cable attachment point.
- Check that all external covers and rigging hardware are securely fastened.

Using for the first time



Warning! Read "Safety Information" before installing, powering, operating or servicing the Atomic 3000 LED.

Important! The Atomic 3000 LED is a rugged fixture but it must be protected from environmental factors such as excessive physical shocks and vibration during transportation and storage.

Before applying power to the fixture:

- Carefully review "Safety Information"
- Check that the local AC mains power source is within the fixture's power voltage and frequency ranges.
- Check that the power input cable meets the requirements listed under "Protection from electric shock"

AC power



Warning! Read "Safety Information" before connecting the 3000 LED to AC mains power.

Warning! For protection from electric shock, the 3000 LED must be grounded (earthed). The power distribution circuit must be equipped with a fuse or circuit breaker and ground-fault (earth-fault) protection.



Warning! Socket outlets or external power switches used to supply the 3000 LED with power must be located near the fixture and easily accessible so that the fixtures can easily be disconnected from power.

Important! Do not use an external dimming system to supply power to the 3000 LED, as this may cause damage to the fixture that is not covered by the product warranty.

Power voltage



Warning! Check that the voltage range specified on the fixture's serial number label matches the local AC mains power voltage before applying power to the fixture.

The 3000 LED has an auto-ranging power supply that accepts mains power at 100 - 240 VAC nominal, 50/60 Hz. Do not apply AC mains power at any other voltage or frequency to the fixture. The 3000 LED can draw significant peak currents during normal use. To avoid overload, allow one 16 or 20 amp branch circuit per fixture to operate at full power. Two fixtures may be placed on a 16 amp branch circuit, but considerations for the type of MCB (Miniature Circuit Breaker) must also be respected: 16 A type C will fit most needs (IEC 60898 / UL489 / CSA C22.2 No. 5).

Physical installation



Warning! Read "Safety Information" before installing, powering, operating or servicing. **Warning!** Check that all surfaces to be illuminated are minimum 1 m (3 ft, 4 in.) from the fixture, that combustible materials (wood, fabric, paper, etc.) are minimum 20 cm (8 in.) from the fixture, that there is free airflow around the fixture and that there are no flammable materials nearby. **Warning!** Do not expose the front glass to sunlight or other strong light sources.

If light from the sun or other fixtures hits the front glass directly or at an angle, it can create a fire risk and cause damage inside the fixture or around the edge of the front glass. Strong sunlight can cause damage within seconds! Before the fixture is exposed to sunlight or strong light, shield the front glass or point the fixture in the opposite direction to the light source.

Tilt adjustment

The 3000 LED mounting bracket lets you adjust and lock the fixture's tilt angle. To adjust tilt:

1. Loosen both tilt adjustment wheels until the teeth in the tilt adjustment locking mechanism disengage and you can tilt the fixture freely. If you can feel resistance when you try to tilt the fixture, you have probably not loosened the wheels enough and you may damage the teeth in the adjustment mechanism.
2. Adjust aiming, then retighten both wheels by hand. Tighten firmly but do not use tools to tighten, or you may cause damage.

The first few times you adjust tilt, small particles of rubbed off paint or metal may become visible. This is not a fault and it does not lead to any problems.

Fastening the fixture to a flat surface



The 3000 LED can be fastened to a stage or other flat surface.

Warning! The supporting surface must be hard and flat or air vents in the base may be blocked, which will cause overheating. Fasten the fixture securely. Do not stand it on a surface or leave it where it can be moved or can fall over.

To fasten the 3000 LED to a flat surface:

1. Check that the surface can support at least 10 times the weight of all fixtures and equipment to be installed on it.
2. Fasten the fixture's mounting bracket to the surface using at least one M12 bolt, grade 8.8.
3. If the fixture may fall and cause injury or damage if the primary attachment fails, attach an approved

Mounting the fixture on a truss

The 3000 LED can be clamped to a truss or similar rigging structure in any orientation. When mounting on a truss:

- Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.

- Check that all rigging hardware is undamaged and rated for the weight it will secure.
- Block access under the work area.
- Work from a stable platform.
- Secure the fixture against rigging hardware failure with an approved safety cable.

Depending on the orientation of the fixture, you can use one of the following methods to mount the fixture on a truss.

Truss-mount installation in any orientation

To suspend the fixture from a rigging structure such as a truss in any orientation:

1. Fasten a half-coupler rigging clamp that completely encircles the truss chord directly to the fixture's mounting bracket by means of an M12 grade 8.8 bolt passed through the hole in the mounting bracket and secured with an unworn self-locking nut. Do not use an omega bracket.
2. Block access under the work area. Working from a stable platform, hang the fixture on the truss and fasten the half-coupler clamp around the truss chord.
3. If the fixture may fall and cause injury or damage if the primary attachment fails, attach an approved safety cable to a secure anchoring point and to one of the safety cable attachment points on the fixture.
4. If necessary, adjust the orientation of the fixture by loosening the tilt adjustment wheels, adjusting the aim of the fixture and retightening the tilt adjustment wheels. Apply firm pressure by hand only – do not use tools to tighten the tilt adjustment wheels.

Truss-mount installation hanging vertically in 'free hanging mode'

It is possible to install the 3000 LED hanging vertically downwards from a truss and then set it to the required tilt using the tilt adjustment wheels in the mounting bracket. To suspend the fixture from a rigging structure such as a truss with the fixture hanging vertically in 'free hanging mode' only.

Setup

Onboard control menus

Menu	Item	Options	Notes
DMX address		1-XXX	The DMX address (default address = 1).XXX indicates that the DMX address range is limited so that there is enough DMX channels for the fixture within 512 available ranges.
Control mode	3 DMX channels		3 DMX channel mode
	4 DMX channels		4 DMX channel mode
	extend		Extended channel mode, adding Aura RGB control
Features	dimming curve	linear	Linear dimming curve
		square-law	Square-law linear dimming curve
		Inverse square-law	Inverse square-law linear dimming curve
		S curve	S curve dimming curve
	Strobe	LED	Solid LED flash light
		Xenon	Power frequency cycle of flashlight simulate Xenon tube
	Cooling mode	Regulating fan	Cooling fan speed thermostatic control

		Constant fan ultra-low	Constant fan speed, ultra-low speed
		Constant fan low	Constant fan speed, low speed
		Constant fan medium	Constant fan speed, medium speed
		Constant fan height	Constant fan speed, high speed
	DMX Reset	off	Forbid Rest by DMX
		on	Rest by DMX
	Display	Display sleeping mode	After 30 seconds, turn off the screen and press any button to wake up
		No sleeping	Don't turn off the screen
	Error Mode	normal	Any errors detected are displayed on the reset screen
		silent	The error message is not displayed in the screen. You need to see it in the error table.
	Art Net Dmx	shutdown	After the shutdown, receive the control DMX512 signal
		opening	After opening, the art net signal is received, and the control DMX512 is not received
	language	Chinese	Interface Language is Chinese
		English	Interface Language is English
Default setting	Factory Default	Loading	Restore all settings to factory defaults
Info	Boot time	Total boot time	Displays the total operating time after manufacture
		Current boot time	Displays current boot time
		Reset Table X time	Counter clear→ Yes/ No Reset counter clear
	Software version	X.X.X	Displays the current program software version
	RDM UID	4D50:XXXXXX XX	Display unique RDM ID
	Fan speed	Basic fan X RPM	Displays the current speed of the basic fan 1, NA,0-10000 RPM
	temperature	LED temperature	Current temperature, last maximum temperature, historical maximum temperature
DMX LIVE	Rate	XX Hz	DMX transmission speed, live, in seconds
	Quality	0-100%	Percentage of error packets received, live
	Start code	0-255	The decimal value of the DMX start code, live
	Channel [Y] X	[Y] 0-255	Scroll through the DMX value received by each DMX channel: The [Y]=DMX channel number is in the current DMX control mode, The DMX value received by X= on this channel
TEST	Test LEDs	Beam static	The beam LED is activated at low intensity for examination purposes
		Beam flash	Only test beam LEDs
		Beam close	Beam LEDs backout

		R AURA	Test red Aura LEDs only
		G AURA	Test blue Aura LEDs only
		B AURA	Test green Aura LEDs only
Manual control	Reboot		Reboot fixture
	Channel [Y]X		Send DMX value [Y] on channel X
	...		
Service	Error table		Displays any valid errors
	Fan clear		OFF / ON stop fan

DMX Modes

DMX Channels Mode: 3/4/14 Channels

3-DMX channel mode

3 CH	Function	Value	Introductions
1	Beam flash intensity		Snap
	blackout	0	
	Minimum to maximum intensity	1-255	
2	Beam flash duration		Snap
	7→650 ms	0-255	
3	Beam flash rate		Snap
	0.289→16.67 Hz	0-255	

4-DMX channel mode

CH	Function	Value	Introductions
1	Beam flash intensity		Snap
	blackout	0	
	Minimum to maximum intensity	1-255	
2	Beam flash duration		Snap
	7→650 ms	0-255	
3	Beam flash rate		Snap
	0.289→16.67 Hz	0-255	
4	Beam effect		Snap
	No effect	0-5	

	Ramp up	6-42	
	Ramp down	43-85	
	Ramp up, Ramp down	86-128	
	Random	129-171	
	Lightning	172-214	
	Spikes (flash over low light)	215-255	

14-DMX Model (Extend)

CH	Function	Value	Introductions
1	Beam flash intensity		
	blackout	0	
	Minimum to maximum intensity	1-255	
2	Beam flash duration		
	7→650 ms	0-255	
3	Beam flash rate		Snap
	0hz	0-5	
	0.289→16.67 Hz	6-255	
4	Beam effect		Premise: 3 dmx channels greater than 5 dmx channels
	No effect	0-5	
	Ramp up	6-42	
	Ramp down	43-85	
	Ramp up, Ramp down	86-128	
	Random	129-171	
	Lightning	172-214	
	Spikes (flash over low light)	215-255	
5	Control / setting		
	No function	0-9	
	Reset the entire fixture - 5 seconds	10-14	
	No function	15-22	
	Linear dimming curve - 1 sec. (menu override, setting unaffected by power off/on)	23	
	Square law dimming curve - 1 sec. (menu override, factory default setting, setting unaffected by power off/on)	24	
	Inverse square law dimming curve - 1 sec. (menu override, setting unaffected by power off/on)	25	
	S-curve dimming curve - 1 sec. (menu override, setting unaffected by power off/on)	26	
	No function	27-51	
	Turn on control panel display - 1 sec.	52	
	Turn off control panel display - 1 sec	53	
	Regulated fans speed, fixed light output intensity = full (default setting, menu override, setting unaffected by power off/on)	54	

	Fixed fan speed = full, regulated light output intensity (menu override, setting unaffected by power off/on)	55	
	Fixed fan speed = medium, regulated light output intensity (menu override, setting unaffected by power off/on)	56	
	Fixed fan speed = low, regulated light output intensity (menu override, setting unaffected by power off/on)	57	
	Fixed fan speed = ultra low, regulated light output intensity (menu override, setting unaffected by power off/on)	58	
	Strobe behavior = LED (menu override, setting unaffected by power off/on)	59	
	Strobe behavior = Xenon (menu override, setting unaffected by power off/on)	60	
	No function	61-255	
6	FX select Effect Select (See Appendix FX, "preprogrammed effect.")	0-255	
7	FX adjustment Synchronous speed adjust, zero to maximum	0-255	
8	No function	0-255	
Aura control channels			
9	Aura flash / shutter effect		Snap
	Shutter closed	0-19	
	Shutter open	20-49	
	Flash, slow → fast	50-200	
	Shutter open	201-210	
	Random flash, slow → fast	211-255	
10	Aura dimming Closed → Open	0-255	Fade
11	Aura R 0% → 100%	0-255	Fade
12	Aura G 0% → 100%	0-255	Fade
13	Aura B 0% → 100%	0-255	Fade
14	Aura Color preset ('color wheel' effect)		
	Open, RGB color mixing enabled	0-10	
	Color 1 - LEE 790 - Moroccan pink	11-15	
	Color 2 - LEE 157 - pink	16-20	
	Color 3 - LEE 332 - Special rose pink	21-25	
	Color 4 - LEE 328 - Follies pink	26-30	
	Color 5 - LEE 345 - Fuchsia pink	31-35	
	Color 6 - LEE 194 - Surprise pink	36-40	
	Color 7 - LEE 181 - Congo blue	41-45	
	Color 8 - LEE 071 - Tokyo Blue	46-50	
	Color 9 - LEE 120 - Deep Blue	51-55	

Color 10 - LEE 079 - Just Blue	56-60
Color 11 - LEE 132 - Medium Blue	61-65
Color 12 - LEE 200 - Double CT blue	66-70
Color 13 - LEE 161 - Slate Blue	71-75
Color 14 - LEE 201 - Full CT Blue	76-80
Color 15 - LEE 202 - Half CT blue	81-85
Color 16 - LEE 117 - steel blue	86-90
Color 17 - LEE 353 - Lighter blue	91-95
Color 18 - LEE 118 - Light Blue	96-100
Color 19 - LEE 116 - Medium Blue Green	101-105
Color 20 - LEE 124 - Dark green	106-110
Color 21 - LEE 139 - Primary Green	111-115
Color 22 - LEE 089 - moss green	116-120
Color 23 - LEE 122 - Fern Green	121-125
Color 24 - LEE 738 - JAS Green	126-130
Color 25 - LEE 088 - Lime Green	131-135
Color 26 - LEE 100 - Spring Yellow	136-140
Color 27 - LEE 104 - Deep Amber	141-145
Color 28 - LEE 179 - Chrome Orange	146-150
Color 29 - LEE 105 - Orange	151-155
Color 30 - LEE 021 - Golden Amber	156-160
Color 31 - LEE 778 - Millennium Gold	161-165
Color 32 - LEE 135 - Deep Golden Amber	166-170
Color 33 - LEE 164 - Flame red	171-175
Color 34 - Magenta	176-180
Color 35 - Medium Lavender	181-185
Color 36 - white	186-190
Aura' color wheel rotation' Effect	
clockwise, fast → slow	191-214
Stop (this will stop wherever the color is at the time)	215-219
Counter-clockwise, slow → fast	220-243
Aura Random colors	
Fast	244-247
Medium	248-251
Slow	252-255

Appendix: FX pre-programmed effect

DMX Value	Effect	DMX Value	Effect	DMX Value	Effect
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	Beam Effect	85	Red white blue snap	145	Electric arc
0	No function	86-95	No function	146-150	No function
1	Wave (sine wave)	96	Fire		Combination effects
2	Step	97	Water	151	No function
3	Pulse	98	Ice	152	Thunderstorm
4-5	No function	99	Hot and cold	153	welding
6	Double Strobe	100	Warm and fuzzy	154	3 Steps strobe
7	Triple Strobe	101	Silver and gold	155	Tick Tock
8-10	No function	102	Gold and silver	156	Aura ramp beam flash
11	Up, down, flash	103	No function	157	Beam ramp aura flash
12	Up, flash, down, flash	104	Circular chase slim	158-160	No function
13	Random levels	105	Circular chase wide	161	Police car 4
14-19	No function	106-107	No function	162	Police car 5
20	House light	108	Double circular chase spindly	163	Police car 6
21-50	No function	109	Double circular chase wide	164	Police car 7
	Aura Effects	110-111	No function	165	Police car 8
51	Aura Pulse	112	Vertical scroll	166	Police car 9
52-53	No function	113	horizontal scroll (L / R)	167-255	No function
54	Aura Ramp	114-115	No function		
55	No function	116	Knight Rider Slim		
56	Rainbow wave	117	Knight Rider Wide		
57	Rainbow step	118	Knight Rider Slim with CW surface		
58	Rainbow Pulse	119	No function		
59-60	No function	120	4 segments scroll		
61	RGB Wave	121	6 segments scroll		
62	RGB Step	122-123	No function		
63	RGB Pulse	124	Police car 1		
64-65	No function	125	Police car 2		
66	CMY Wave	126	Police car 3		
67	CMY Step	127-129	No function		
68	CMY Pulse	130	Full bumps		
69-70	No function	131	Split bumps CW vertical		
71	Mix to white waves	132	Split bumps CW horizontal		
72	Mix to white step	133	Random split bumps CW vertical		
73	Mix to White pulse	134	Random split bumps CW horizontal		
74-75	No function	135	Color Shaker CW vertical		
76	Random mixed wave	136	Color Shaker CW horizontal		
77	Random mixing step	137	Color Shaker CW vertical and no black frame		
78	Random mixing pulse				
79-80	No function	138	Color Shaker CW horizontal and no black frame		
81	Random subtle wave				
82-83	No function	139-143	No function		
84	Red white blue fade	144	Swimming pool		

Technical specifications and Effect

Technical specifications:

With same Channel as Martin Atomic 30000 Strobe

Light source: 228x3W white LEDs (Strobe) 64x 0.2w RGB LEDs (backlight) array

Minimum LED lifetime: 50 000 hours

Resolution: 8 bits per color plus 8-bit dimming

Control systems: DMX

DMX channels: 3/4/14 Channels

Setting: Control panel with backlit monochrome display

N.G: 7kgs /pcs

Packing Size: 50x 24x 34cm (1pcs /carton)

Effect:

The fixture has two LED arrays:

- The Beam is a high-intensity array that gives powerful strobe and blinder effects
- The Aura gives RGB effects that light up the front of the fixture to complement or contrast with the output from the Beam.

Strobe effects

The 3000 LED offers strobe effects from the Beam with variable flash rate, flash duration and intensity. It also offers the following pre-programmed effects:

- Ramp up/down intensity modulation effects
- Random flashes
- Lightning - simulates the instantly recognizable 'dirty' flash of a lightning strike
- Spikes - low-intensity light output with high-intensity flashes.

Blinder effects

To obtain a continuous blinder effect, set flash duration to a long value and flash rate to a high frequency value so that flashes 'overlap' and merge into continuous light output.

Aura RGB Color

Extended DMX mode gives control of the Aura. You can set Aura color with independent RGB control and you can also control overall Aura intensity. The four different dimming curve options available in the fixture's control menus apply to both the Beam and the Aura dimming curves.

Service and maintenance



Warning! Disconnect the fixture from AC mains power and allow to cool for at least 10 minutes before handling. Be prepared for the fixture to light suddenly if connected to power.



Warning! Refer any service operation to a qualified service technician.

Important! Excessive dust, smoke fluid, and particle buildup degrades performance, causes overheating and will damage the fixture. Damage caused by inadequate cleaning or maintenance is not covered by the product warranty.

The user will need to clean the Atomic 3000 LED periodically, and it is also possible for the user to update the fixture's software.

LEDs are subject to wear and tear over the life of the product, resulting in gradual changes in color and overall brightness over many thousands of hours of use. The extent of wear and tear depends heavily on operating conditions and environment, so it is impossible to specify precisely whether and to what extent LED performance will be affected. However, you may eventually need to replace LEDs if their characteristics are affected by wear and tear after an extended period of use and if you require fixtures to perform within very precise optical and color parameters.

The manufacturer's LED lifetime data is based on performance under the manufacturer's test conditions. As with all LEDs, the gradual reduction in luminous output will be accelerated when LEDs are used in a fixture, where conditions are much tougher than in manufacturer's testing. To maximize LED lifetimes, keep the ambient temperature as low as possible and drive the LEDs no harder and for no longer than necessary.

Cleaning

Warning! Disconnect from power and allow to cool before cleaning.

Cleaning schedules for lighting fixtures vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the 3000 LED. Environmental factors that may result in a need for frequent cleaning include:

- Use of smoke or fog machines.
- High airflow rates (near air conditioning vents, for example).
- Presence of cigarette smoke.
- Airborne dust (from stage effects, building structures and fittings or the natural environment at outdoor events, for example).

If one or more of these factors is present, inspect fixtures within their first 100 hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation, maintenance schedule.

Use gentle pressure only when cleaning, and work in a clean, well-lit area. Do not use any product that contains solvents or abrasives, as these can cause surface damage.