

Small Inverter Compatibility Issues

What inverters are we talking about?

Dual Lite Lite Gear series 100 & 250 Watt

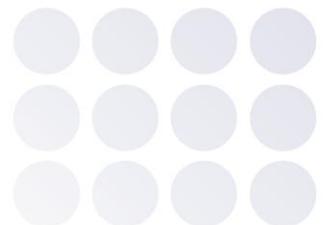
Bodine ELI series 100 and 250 Watt

What are the known issues?

1. In the event of too much inrush current, the inverter will shut itself down to protect itself.
2. If the fixtures being powered by the inverter require a sine wave power input, they will not work off either brand of inverter, which both produce square wave form power.
3. The inrush problems are not necessarily limited to LED drivers. We have experienced the same problems with electronic fluorescent ballasts, and with induction systems.
4. Induction systems typically require sine wave input, which these inverters do not produce.

Why?

These are relatively inexpensive inverters. As such, they are not armed with all the high end circuitry that normally deals with inrush issues and that produce sign wave power output. Many electronic devices, which are what we are dealing with in LED fixtures & electronic ballasts, pull in a large amount of initial inrush current for a very short time, each time they are turned on. Many of those same electronic devices require sine wave power input, and will not accept the square wave power provided by these inverters.



Do other brands of small inverters have this issue, as well?

Yes. To the best of our knowledge, all the small inverters on the market today have the same issues. Any inverter with similar construction and technology would have the same concerns.

Do large inverters have the same issues?

Larger inverters, such as the Dual Lite LSN series and inverters from CPP, produce sine wave output; so they are generally not an issue on this front. However, if you have any doubt about compatibility, always verify with the inverter manufacturer, or their agent.

Inrush can be an issue with any inverter system. Although, larger, more traditional inverters generally deal with inrush/overload better than the new mini-inverters, in question. Larger inverters normally offer more sophisticated circuitry that will allow overload to occur for a short period of time, without shutting the system down. The specification sheets for each model should show what the maximum allowable overload is, and the period of time for which it will be allowed. If not, then a factory representative should be contacted.

What are the factories doing about it?

1. Bodine has gone to a slow blow fuse to address the inrush issue. They claim that this has taken care of the bulk of those problems. Additionally, they will test fixtures for you at the factory. Contact your MH representative if you need a specific product combination tested. For the future, Bodine is working on a new design for a new series of inverter that will produce a sinusoidal wave output form. We don't yet have an ETA or a target price for the new series.
2. Dual Lite has been compiling a list of fixtures/drivers that are known to work with their inverters. They are now publishing this list on their website (see hyperlink below). They will also test new fixtures and configurations at the factory. Contact your MH representative if you need to have a specific product combination tested.

Dual Lite Loading Chart Internet Link - http://www.dual-lite.com/resources/litegear_luminaire_loading_chart/



What should I do?

1. Work with your MH representative to establish compatibility between the inverters and ballasts or drivers you intend to specify. MH will work with the respective factories to procure results from previous testing, or will have new testing performed for your specific combination of products.
2. Solid state lighting product designs are changing rapidly. As a result, the fixture manufacturers may change drivers frequently. Be sure to notate the specific ballasts/drivers that were tested, on your fixture schedule. This will help assure that your project will receive the same products that were tested.

