

New

Lumatech™ LED Panels & Switches

make your existing Caution Warning System obsolete



Replace your old incandescent system with reliable LED Technology

- LED Reliability & Performance
- Eliminate dispatch Delays and Unscheduled Removals
- Cut panel Maintenance & Repair Costs to Zero
- Super low Operating Temperatures
- Single Piece Legend Plates that don't Melt or Blur
- Improved Situational Awareness & Flight Safety

FIVE YEAR WARRANTY

Never replace another lamp, cap, or switch assembly again!

Why your incandescent Dash 8 Caution Warning Panels are obsolete – and costing you money

Obsolete design

The panels on your legacy DHC-8-100/200/300's contain obsolete incandescent technology. With ninety-seven annunciators in total, that's 194 incandescent lamps crammed into stacks of brittle plastic cap assemblies running red hot and slowly baking to death. This intense confined heat means almost 200 chances for a lamp or cap assembly to fail or disintegrate. It's not a matter of if, but when. Compare this to Luma's modern LED design that runs cool and never fails.

Unreadable legends

The high temperature of the incandescent lamps degrades the legends and cap components on your panels so they warp, go intermittent, and often break when replacing failed lamps. The ultra-high heat causes legends to blister, get fuzzy, and even change color. The older they are the worse they perform all the while getting harder and harder to re-lamp without breakage.

Costly Maintenance & Repairs

The existing panels on your DHC-8's are also known for their failure-prone internal cards and circuitry that often require expensive repair or replacement at an outside shop.

How Lumatech™ LED Panels & Switches save you money and improve flight safety

LEDs – lifetime reliability

All Lumatech products use ultra-reliable LEDs. Legacy incandescent panels waste 80% of their power generating destructive heat, instead of visible light. LEDs generate almost no heat, so they last up to sixty thousand hours - virtually the life of the aircraft.

Crisp, Sunlight Readable Legends

LEDs provide brighter, more uniform illumination. Each legend is bright and evenly lit with all characters laser sharp and clearly visible at any angle. The Lumatech system has been fully tested and approved to meet all FAA lighting requirements in any ambient lighting condition. The characters and legend-plate will never get fuzzy, blister, or change color from heat or age. Full sun or dead of night; you're Good to Go.

Flat panel appearance

Like today's modern avionics suites, Lumatech LED Panels have a one-piece flat surface for easy reading. There is no visual clutter unlike your existing panels with nearly a hundred individual cap assemblies jam-packed in columns of uneven hard-to-read annunciators.

High contrast

Lumatech Panels have an anti-reflective coating for sharper contrast and are absolutely deadfront when not illuminated. The LEDs are enclosed with each cell having an opaque barrier to prevent light leakage to adjacent cells. The legends cannot be seen until they are illuminated, so there is no ghosting or uncertainty leading to misinterpretation or pilot error.

Fail-safe circuits

Lumatech Panels are designed with built-in redundancy. This includes LED circuits arranged in a combination of series and parallel arrays with a failsafe proprietary bypass system to insure that even with multiple single point failures, all legends remain brightly lit.

Maintenance & Repairs, Cont'd

One fleet operator reported over 25 unscheduled removals in one year – a significant expense. And every year the maintenance cost of your aging incandescent panels goes up. It's no secret, old panels and annunciators require more maintenance and repair, and replacement parts are getting harder to find and cost more each time you go back.

Caps and Legend Assemblies, Lamp Replacements, Internal Cards and other repairs; all sucking up Time and Money - YOURS!

Dispatch delays

When an annunciator panel fails on the ramp it causes a maintenance event and often a dispatch delay. This costs you serious money – all because of a burned out light bulb. And lamp failures are most likely to be discovered just before departure when system test and engine starts can cycle each station multiple times.

Safety cost

The cost of flight safety is difficult to quantify, but common sense says that unreliable, hard-to-read annunciator panels reduce flight safety – and reduced flight safety is the nightmare of all expenses.

Zero Maintenance Cost

You will never have to replace another incandescent lamp or cap assembly again. Your only maintenance will be an occasional wipe with a dust rag. And we back this up with our full bumper-to-bumper 5-year warranty (see back page).

No more panel-related Dispatch Delays

Imagine the money you can save with reliable LED caution-warning panels that will never cause a flight delay. Sudden failures are a thing of the past with Lumatech's solid-state LEDs and fail-safe circuitry.

Plug and Play installation – no flight tests

Lumatech Panels are STC certified as one for one replacements for most King Air models (see back page). Installation is quick plug-and-play. After installing your new LED panels, just run a quick validation ground test. No flight test is required.

An investment that pays for itself

Lumatech Panels will quickly pay for themselves with direct savings in maintenance costs, fewer dispatch delays, and improved situational awareness and flight safety. The cost of new LED Panels from Luma compares favorably to the cost of your incandescent panels which are mostly only available in a used or overhauled condition. Also, Lumatech LED Panels will add desirability and preferred status in the resale of your aircraft.

So why keep wasting time and money on your unreliable and obsolete annunciator panels? Start saving right now with LED Panels from Luma Technologies.

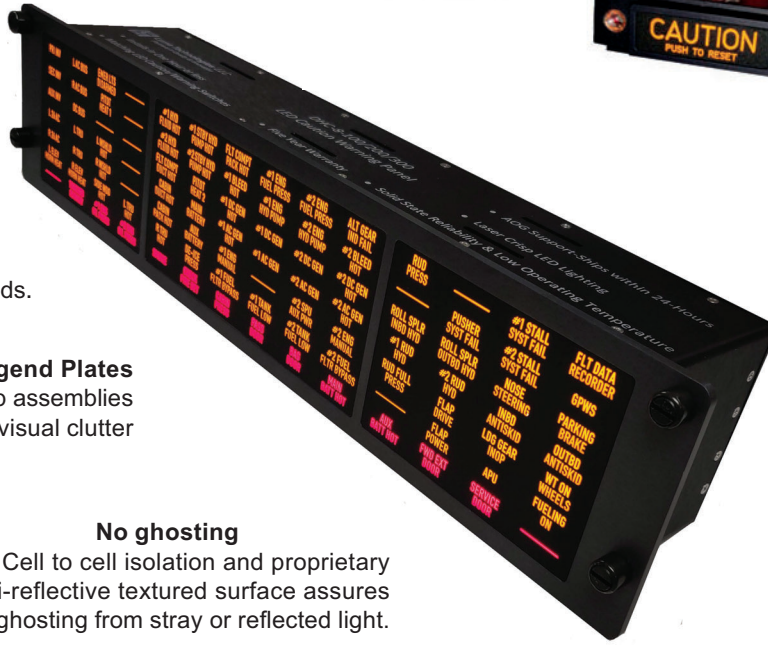
Please give us a call today: 425-643-4000, x305.

Lumatech™ LED Panels & Switches...

Performance & Reliability you can See

LED Reliability

Lasts the life of the aircraft with Zero maintenance or replacements



Cool to the touch

Lumatech LED panels & switches generate almost no heat. Heat damage is nonexistent Cockpit stays comfortable.

Sunlight Readable

Non-reflective background. Laser crisp high contrast legends.

Single Piece Legend Plates

No cap assemblies
No visual clutter

No ghosting

Cell to cell isolation and proprietary anti-reflective textured surface assures no ghosting from stray or reflected light.

Permanent colors

Colors never change or fade, Always clear and instantly recognizable.

Sharp, clear lettering

Legends never blister or get fuzzy from heat or age.

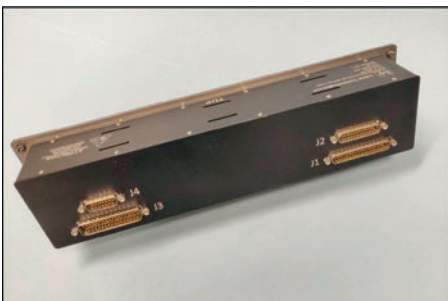
Rugged solid state

No lamp filaments, outdated components, or fragile board traces to fail from shock or vibration.

- **Damage resistant legend plates** The multi-celled legend plates are cast from a tough high-density optical polymer that won't deteriorate from age or wear. Even if gouged by a tool, the legends remain readable, flightworthy, and easily replaced as needed.
- **Saves weight** A set of Lumatech LED panels weigh dramatically less than their incandescent counterparts.
- **Lowers power consumption** Lumatech LED panels draw less than 20 percent as many amps as the existing incandescent panels on average.

- **Legends easy to update** If indicia needs to be updated, the legend plate can be quickly replaced. One week factory turn around.
- **Adds resale value – Quick return on investment** Lumatech Panels add resale value and a quick return on your investment with direct savings from zero maintenance costs and reduced dispatch delays.
- **5-Year warranty from Luma Technologies** If any part fails within 5 years after installation and during normal use, we will repair or replace it at no charge. (See back page.)

Plug and Play



All Lumatech LED Caution Warning Panels and glareshield Reset Switches are certified drop-in replacements for all DHC-8-100/200/300 aircraft. Simple Quick-turn installation that is easily combined with other maintenance activities. No Flight testing is required.

Off-angle viewing



Bright, laser crisp indicia combined with unparalleled off-angle viewing assures both the panels and matching switches are easily read by either pilot. Legends which were previously scalding hot and illegible are replaced with bright modern-day LED technology for better decision making and improved situational awareness.

More than 10,000 installed Lumatech products

More than 10,000 Lumatech brand LED Panels, Switches, and Annunciators have been installed in fixed and rotary-wing aircraft around the world. Luma products are preferred in both civil and military aircraft worldwide and proven to withstand the harsh environment of shock and vibration and are instantly readable in direct sunlight.

**See specifications and more...
back page >>>**



Luma Technologies LLC

13226 SE 30th Street, B3
Bellevue, WA 98005 USA

Lumatech™ LED Caution/Warning Panels & Reset Switches for legacy DHC-8's and other popular aircraft platforms

Certified for the following models

DHC-8-100, DHC-8-200, & DHC-8-300



Other Certified LED Platforms

Fixed Wing	Model Applicability
King Air	C90, F90, 200, 300, B300/350i
" " "	1900C & 1900D
Hawker Beechjet	400A/400XP & 400T (T-1A)
Lockheed Aero	C-130
Metroliner/M7	Various (Common Panel)
Rotary/Helicopter	
Bell Helicopter	206/206L, 214ST, 412/412EP
Boeing Vertol	CH-47D, BV-107
Columbia Helicopters	BV-107, CH-234
MBB/Kawasaki	BK-117
Sikorsky	UH-60, S-70

Conformed Units Tested & Guaranteed to meet the following DO-160 environmental specifications

Temperature and altitude	RTCA DO-160G, section 4, category A1
Temperature variation	RTCA DO-160G, section 5, category C
Humidity	RTCA DO-160G, section 6, category A
Operational shock and crash safety	RTCA DO-160G, section 7, category B
Vibration	RTCA DO-160G, section 8, category S, curve M
Fungus	RTCA DO-160G, section 13, category F (analysis)
Magnetic effect	RTCA DO-160G, section 15, category Z
Induced signal susceptibility	RTCA DO-160G, section 19, category AC
Radio frequency susceptibility	RTCA DO-160G, section 20, category AA
Emission of RF energy	RTCA DO-160G, section B 21, category M
Lightning induced signal susceptibility	DO-160G, section 22, category A3G33
Electrostatic discharge	RTCA DO-160G, section 25, category A
Flammability	FAR25.853(a) HORIZONTAL: Front Panel FAR25.853(a) VERTICAL: Circuit Boards

Warranty

Each Lumatech™ LED Panel has a calculated MTBF well in excess of twenty five thousand hours. If any panel fails during normal use, Luma will immediately repair or replace it at no charge for five years from the date of installation.

Available from Luma Technologies or any qualified Maintenance Provider.



Luma Technologies LLC
Partners in Quality & Innovation

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