

Tornado 2400 Moving Light Enclosures



Tornado 2400 - the ONLY way to protect those extra-large moving head luminaires in outdoor applications...

The Tornado 2400 enclosure comprises a clear dome, in which the luminaire has complete freedom of movement, and a fiberglass base, containing Tempest's patented Digital Enclosure Control electronics, fans and heating elements.

By monitoring the interior temperature and humidity of the enclosure, DEC3.2 controls humidity and dew

This is the Big One - the Tempest Tornado™ for the largest moving lights out there. The Tornado 2400 is a weather-resistant enclosure designed to provide optimum lifetime and operating conditions for really high-powered automated luminaires in exterior locations. Any climate. Anywhere.

And now, Tornado 2400 comes with Tempest's revolutionary DEC3.2™ control system - all the security and reliability of Digital Enclosure Control generations 1 and 2, but now featuring DMX control, user-definable temperature and humidity settings, and a nifty new control panel, so you know exactly what's going on inside every enclosure.



Best of all, DEC3.2 is shipping now with optional RDM remote monitoring, so you know exactly what's going on — without climbing a ladder. DEC3 even features a lamp hour counter, so you know when to relamp — before the lights go out...

point, eliminating condensation and corrosion, 24/7. When the fixture is running, Tornado's powerful fans exchange the filtered air inside the enclosure every few seconds, ensuring long lamp and equipment life.

Tornado 2400 has been tested and approved for use with High End Showgun, Showbeam DL3 and similar moving head

luminaires, and the list is growing all the time. If your light is not on the list, we'll test it and approve it as part of your project.

Tornados have been operating for years in deserts, through winters, and at sea, all over the world.

Now it's your turn.

Construction

Fiberglass base, painted with outdoor-rated UV-resistant enamel. Acrylic optically clear 250° x 360° projection globe, 42" (1067mm) diameter.

For Luminaire Type:

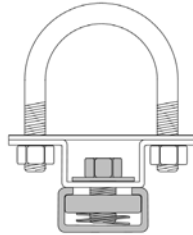
(these fixtures have been tested and approved with this enclosure – call us for fixtures not on this list)

High End Showgun
High End Showbeam
High End Showpix
Robe DP7000

...and similar units

Mounting

Two parallel 1 5/8" x 13/16" Unistrut. Four stainless steel bolts, washers and channel nuts are included with each Tornado enclosure (shown shaded below). For Pipe mounting, order four of either of the Tempest stainless steel mounting kits shown here.



4900.MCT Stainless Steel pipe clamp kit, for pipes 1.5" (38mm) to 2" (50mm) OD. Four required per enclosure.

4925.MCT Stainless Steel pipe clamp kit, for pipes 2" (50mm) to 2.5"/64mm OD. Four required per enclosure.

Tempest Lighting, Inc. accepts no responsibility whatsoever for damages arising from deficient mounting design or installation by others.

Security

6 Heavy-Duty stainless steel key draw latches, 3 with secondary catch. Stainless steel eyebolt for safety bond. Order Marine Latch Option **2000.ML** for bolt-down marine grade latches.

Finish

Exterior grade UV-resistant enamel coating, white or gray as standard. Custom colors available to special order. All RAL colors and most Pantone colors can be matched as required.

Climate Control

Patented Digital Enclosure Control (DEC3) System, microprocessor controller and display controls temperature, humidity and dewpoint. DEC3 system runs 24/7 for round-the-clock protection.

Factory default settings may be used without any adjustment, or user may modify temperature and humidity threshold settings to optimize performance in different climate types and with different equipment.

All values and status information are available for remote monitoring over RDM (for more information, please refer to DEC3 data sheet).

Cooling

Filtered fresh air cooled using six powerful AC fans.

Washable air inlet filters may be simply removed for periodic cleaning.

Heating

Proportionally controlled 1500 watt heater dries intake air and maintains internal temperature within bounds in cold climates. Heaters pulse when fixture lamp is detected to be off, to maintain internal temperatures above dewpoint and prevent condensation.

Protection

Fixture over-temperature double pole relay isolates fixture if temperature exceeds safe operating limit. This relay may also be controlled over DMX, providing a simple 'hard reset' in the event of fixture malfunction.

Control Wiring

DMX IN terminal on main circuit board. Two DMX THRU terminals - one for internal fixture, and one to next enclosure. Cable by others.

Electrical Connections

Connections landed through conduit entry port provided on enclosure base.

Enclosure – hardwired on site, 200-240VAC, 50/60Hz, 5amps (max)

Light Fixture: Americas: NEMA L6-20 receptacle provided

Asia/Europe: CE17 16amp receptacle provided

Orientation

Tornado 2400 may be installed base down or base up - specify when ordering.

Digital Enclosure Control

DEC3.2™ – that’s Digital Enclosure Control, 3rd Generation – takes enclosure control to the next level. DEC3.2 is an entirely new controller, featuring high-reliability surface-mount electronics, extreme heavy-duty switching components, and a handy waterproof user control panel on the outside of the enclosure. DEC3.2 offers communication via DMX and RDM, or may be used in its entirely automatic standalone operating mode. DEC3.2 monitors internal temperature, humidity and lamp current at all times, and uses this information to control its lamp relay, fans and heaters, and report back over RDM if desired.

DEC3.2 works right out of the box – if you don’t want to play with its default settings, you don’t need to. DEC3.2’s mission is to maintain temperature and humidity inside the enclosure within the ‘Goldilocks’ band – never too hot, never too cold, and never, never, allowing deadly condensation to form. Condensation is fatal to electronic equipment, particularly in polluted areas or saline environments, where condensation brings not only rust and short-circuits, but also a steady buildup of mineral and salt deposits. Incidentally, this is very hard to control with air-conditioning type systems, which is why we don’t use them.

DEC3.2’s function depends on whether the fixture/projector lamp is on or off:

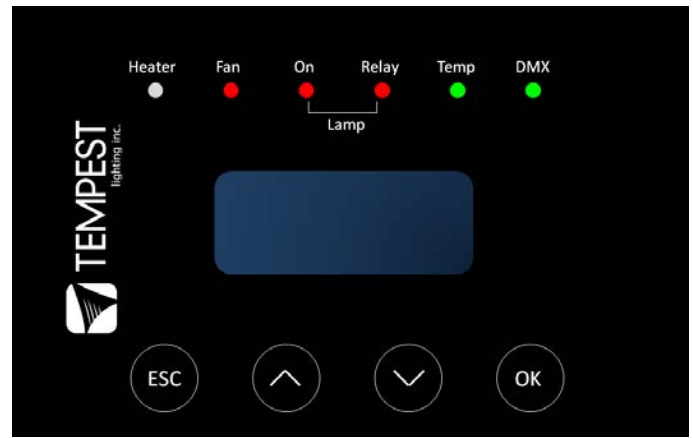
Lamp ON

When the projector/fixture is running, the heat from the lamp takes care of humidity, and DEC3.2 runs the enclosure’s fans to change its air every few seconds – ensuring minimal temperature rise above outside ambient.

Lamp OFF

When the lamp is off, DEC3.2 goes to work. When conditions are within normal bounds, DEC 3 pulses the heater at a low level to prevent condensation, and gently changes the enclosure air every 30 seconds or so. We call this ‘pulse mode’, and it is the key to preventing damaging condensation inside your equipment.

If the temperature rises above the top set limit, DEC3.2 runs the fans to cool it down. In cold conditions, DEC3.2 will run the heater as required to maintain the bottom set temperature.



DEC3.2’s user interface uses capsense™ technology for a watertight control panel that’s easy to use and easy to read.

LED indicators show the status of all major functions, and the display shows DMX address, temperature, humidity and any error messages you need to know about.

Use the simple menus to optimize temperature and humidity settings, set DMX address, view and reset lamp hour counter, and more.

And if you need to step back from the Tornado enclosure, all of this is available over RDM, in your control room, or over the internet.

And while doing all of this, DEC3.2 can tell you what’s happening over your RDM network – a real boon in larger installations.

Operating Modes

Standalone: The enclosure operates independently, and automatically, requiring no user intervention. User may set parameters such as temperature and humidity thresholds, and monitor sensor information and DEC status at the DEC3.2 user interface. Standalone is the default DEC3.2 setup mode unless specified otherwise.

DMX: All of the Standalone features, but the user can override the lamp relay over DMX, to force a hard reset of any moving light that loses its mind!

RDM: As above, plus the ability to discover and monitor DEC3.2 over RDM.

DEC is why, again and again, users around the world have chosen Tempest enclosures to protect their investment in Lighting and projection equipment.

Tempest Lighting and DEC3.2 – A combination that keeps you looking good, and saves you money.



Ordering Information

The following information must be provided with each order:

- Luminaire type, model number and lamp power
- Orientation (base-down, base-up, or other angle)
- Custom Colors – provide RAL or Pantone reference
- **.US** style (NEMA 6-20 receptacle) or **.IN**ternational (CE17 16amp (blue) receptacle)

2400.IN Tornado 2400 Enclosure, 230VAC, CE17 Receptacle

2400.US Tornado 2400 Enclosure, 208-240VAC, NEMA L6-20 Receptacle

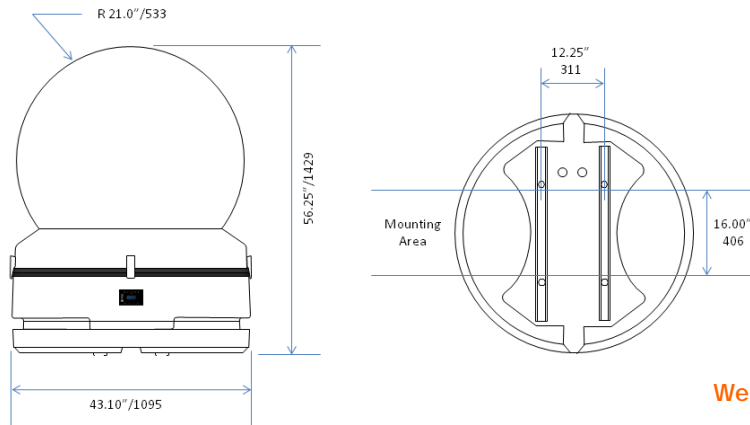
0000.RD RDM Functionality – optional – order one for each enclosure

0000.CC Custom Color - specify RAL or Pantone or provide chip to match

4900.MM M12 Stainless Steel Unistrut Bolt Kit - 4 required per enclosure

4900.MC Truss/Pipe Clamp Kit - 4 required per enclosure

Dimensions & Weights



Weight: 105 lb/48kg

Shipping Weights/Dims. (Crated)

48"x48"x69" (h), weight 260lb - 122 x 122 x 175cm, 118kg
Schedule B Export Code: 8536.30.0000

Approvals

ETL and cETL listed to UL Standard 50, 508

CE: EN55015, EN61000-3-4, EN61000-3-5, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN60598-1

NEMA Type 3R Enclosure (approximately equivalent to IP54)

This product is protected by US Patent Number 6,352,358.

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*In the interest of continuous product improvement,
specifications are subject to change without notice*



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