



# TEMPEST



## TORNADO Moving Light Enclosures

*Any Moving Light. Anywhere.*

*Tempest Tornado —  
ultimate protection  
for moving head  
luminaires in hostile  
environments.*

Tornado enclosures  
comprise a clear UV-  
resistant acrylic dome,  
in which the luminaire  
has complete freedom  
of movement, and an  
aluminum base, containing  
Tempest's patented  
Digital Enclosure Control  
electronics, fans and  
heating elements.

Tempest's new Goldilocks™  
operating system (patents  
pending) controls  
temperature, humidity and  
dew point, eliminating  
deadly condensation,  
24/7/365. Tornado features  
Remote Device Management  
protocol (RDM) to monitor  
and control enclosures on  
larger installations.

There is a Tornado model  
for just about every moving  
head we know, from little  
LED movers right up to  
2,500 Watts of beam power.

Tornados have been  
operating for more than ten  
years in deserts, tropical  
resorts, Northern winters,  
and at sea, all around the  
world.

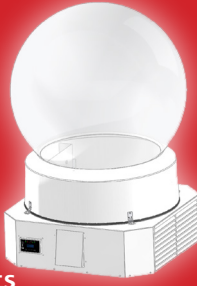
Now it's your turn.

**NEW!**



Tornado 1900  
and 1950  
for those  
smaller  
(Sharper) lights...

**NEW!**



Salt Fog Filtering  
for Cruise Ships  
and Beach Resorts  
beats salt corrosion

Feature Shot:

78 Tornado 2300 enclosures protect  
moving heads from a cascade of salt  
water on the Big O at the 2012 World  
Maritime Fair in Yeosu, South Korea.





## Specification

<b>Base</b>	Aluminum, plated and epoxy powder coated, stainless steel (Tornado 2400 base is fiberglass, with urethane enamel finish)
<b>Globe</b>	High quality UV resistant clear acrylic
<b>Mounting:</b>	<b>1900/1950</b> 2 Stainless steel mounting brackets <b>2000 and up</b> 2 Stainless steel Unistruts under base
<b>Security</b>	Heavy duty stainless steel latches, may be padlocked for security. Marine latch option requires tool to open
<b>Base Color</b>	Standard black or white. Custom colors to order.
<b>Control</b>	Tempest Lighting patented DEC3.3 control system with new Goldilocks™ operating system. Optional remote control over RDM
<b>Cooling</b>	High-power AC fans change air every 1-2 seconds when luminaire lamp is on
<b>Heating</b>	Heating elements maintain minimum operating temperature and prevent condensation as needed
<b>Cooldown</b>	Fans continue running for up to 15 minutes after lamp turns off
<b>Protection</b>	Luminaire power is safely isolated by a 2-pole 30amp relay in the event of overheating. Relay may be controlled via DMX for luminaire hard resets.
<b>DMX/RDM</b>	DMX terminals for enclosure and luminaire control
<b>Power</b>	200-240VAC, 50/60Hz, 5amps max, single or split feed wiring for enclosure and luminaire

### Luminaire Power Outlet

<b>1900/1950</b>	IEC C14 Receptacle (rewireable plug provided)
<b>2000 and up</b>	Americas: NEMA L6-20 receptacle International: CE17 16amp receptacle

<b>Approvals</b>	Americas: ETL and cETL listed to UL 50, 508 International: Low Voltage Directive 2006/95/EC, Electromagnetic Compatibility Directive 2004/108/EC, EN 60065 : 2002, EN 60529:2001-2002, EN 61000-6-3:2007+A1:2011, EN61000-6-1:2007, EN55015:2006+A2:2009 NEMA Type 3R Enclosure (≈IP54)
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<b>Patents</b>	Protected by US Patent # 6,352,358, other patents pending
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<b>Customs</b>	Schedule B Export Code: 8536.30.0000
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## Options

### Pipe Mounts for Tornado 1900/1950

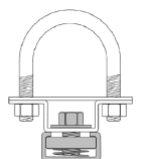
<b>4900.MC</b>	Stainless Steel pipe clamp kit, for pipes 1.5" (38mm) to 2" (50mm) OD. Order two per enclosure.
<b>4925.MC</b>	Stainless Steel pipe clamp kit, for pipes 2" (50mm) to 2.5"/64mm OD. Order two per enclosure.

### Pipe Mounts for Tornado 2000 and up

<b>4900.MCT</b>	Stainless Steel pipe clamp kit, for pipes 1.5" (38mm) to 2" (50mm) OD. Order four per enclosure.
<b>4925.MCT</b>	Stainless Steel pipe clamp kit, for pipes 2" (50mm) to 2.5"/64mm OD. Order four per enclosure.

### Marine Latch Option — requires a tool to remove the globe

<b>2000.ML</b>	Marine Latch Option
<b>.SF (Suffix)</b>	Salt Fog Filtering option (Available for Tornado 1850-2300 Base Down only)



## Tornado 1900



All the features of the Tornado series, now in a compact package for today's smaller, brighter lights. Tornado 1900 comes with Tempest's innovative airflow cowls that allow installation base up, base down or horizontal.

### For Luminaires such as:

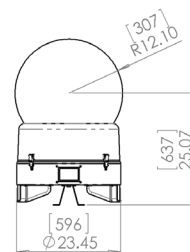
- Clay Paky Sharpy
- DTS Raptor
- Elation Platinum Beam 5R, 15R
- Martin MAC 301
- Martin MAC 350 Entour

### Part Number Volts Installation

1900.DEC.IN\* 230V ↑ ↓ →  
1900.DEC.US\* 120V ↑ ↓ →

### Shipping Dimensions (palletized carton)

32"x32"x46" (h), 75lb  
81 x 81 x 102cm, 34kg



**Weight:** 37 lb/17kg

## Tornado 1950



Tornado 1950 is essentially the same as the Tornado 1900, but with a taller body to accommodate longer luminaires.

### For Luminaires such as:

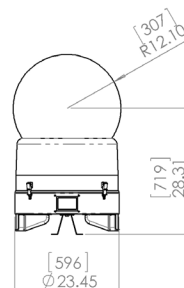
- Chauvet Q-Spot 560
- Elation Platinum Spot 15R
- Robe Robin DLX

### Part Number Volts Installation

1900.DEC.IN\* 230V ↑ ↓ →  
1900.DEC.US\* 120V ↑ ↓ →

### Shipping Dimensions (palletized carton)

32"x32"x46" (h), 80lb  
81 x 81 x 102cm, 37kg

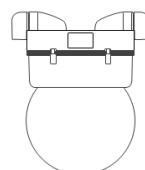


**Weight:** 42 lb/19kg

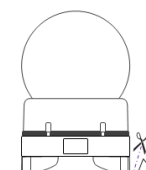
\* Salt Fog Filtering – add suffix .SF

### Orientation

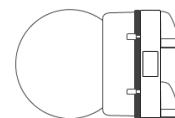
Tornado 1850, 1900 and 1950 cowls are made from tough ABS plastic. The outer hoods may be removed using a sharp box-cutter knife, for base down and horizontal installation.



**Base up (↓)**  
Use cowls as supplied.

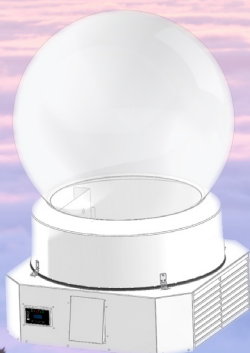


**Base down (↑)**  
Remove outer cowl hoods



**Horizontal (→)**  
Remove outer cowl hoods and align both cowls down

## NEW! Salt Fog Filtering Option



Now you can specify most Tornado enclosures with Tempest's advanced hydrophobic salt fog filtering system, further extending the life of your equipment for beach and marine applications where corrosive salt air is an issue. The Salt Fog Filter option adds a filter housing beneath the base of any Tornado enclosure (except Tornado 2400), including pleated

hydrophobic filters that will prevent moisture entering through the air inlet.

**Because of the filter location, this option is not suitable for horizontal mounting.**

To order Salt Fog Filtering, add the suffix .SF to any valid Tornado part number.

### Notes:

Tornado 1900-1950: Salt Fog Filtering does not increase height.  
Tornado 2000-2300: Salt Fog filtering adds 5.6"/14cm height.  
Salt Fog Versions include Marine Latches as standard.



## Tornado 2000



2000.xxV - Base Down

Tornado 2000 accomodates any 575-700W moving head light.

### For Luminaires such as:

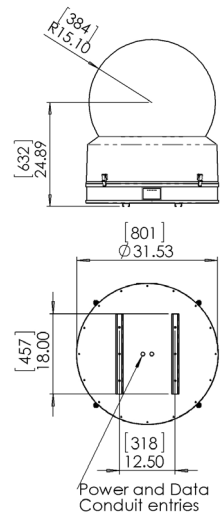
- All 575-700W Moving Heads
- Robe 1200 LEDWash
- Robe 3000DT

Part Number	Volts	Installation
2000.IND*	230V	↑
2000.INV	230V	↓
2000.INH	230V	→
2000.USD*	208V*	↑
2000.USV	208V*	↓
2000.USH	208V*	→

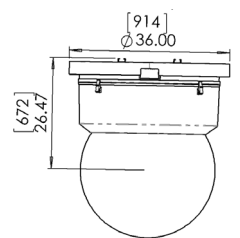
### Shipping Dimensions (palletized carton)

39"x39"x54" (h), 145lb  
100 x 100 x 137cm, 66kg

### Base Down



### Base Up



Weight: 85 lb/39kg

## Tornado 2100



2100.xxV - Base Up

Tornado 2100 is the same size as the 2000, but with additional ventilation for today's smaller, hotter lights.

### For Luminaires such as:

- Elation Design Spot 1200
- Vari-Lite 770
- Vari-Lite 880

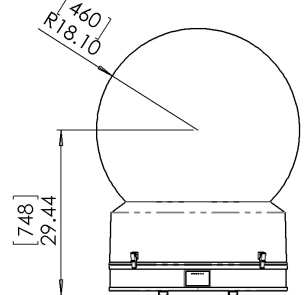
Part Number	Volts	Installation
2100.IND*	230V	↑
2100.INV	230V	↓
2100.INH	230V	→
2100.USD*	208V*	↑
2100.USV	208V*	↓
2100.USH	208V*	→

### Shipping Dimensions (palletized carton)

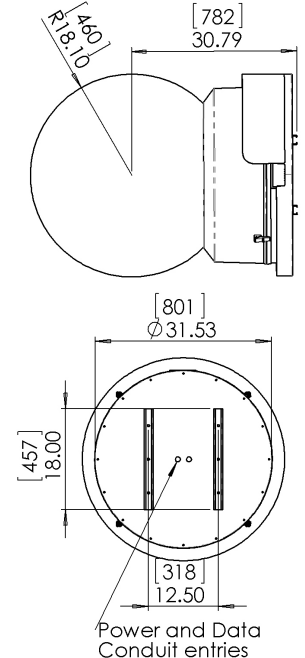
39"x39"x54" (h), 145lb  
100 x 100 x 137cm, 66kg

\* 120V available to order

### Base Down



### Horizontal



Weight: 95 lb/43kg

## Tornado 2200



2200.xxV - Base Down

Tornado 2200 accomodates Larger lights up to 750W.

### For Luminaires such as:

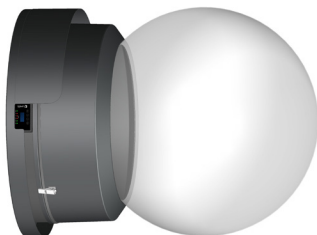
- Vari-Lite VL2500
- Vari-Lite VL2500W
- Vari-Lite VLX

Part Number	Volts	Installation
2200.IND*	230V	↑
2200.INV	230V	↓
2200.INH	230V	→
2200.USD*	208V	↑
2200.USV	208V	↓
2200.USH	208V	→

### Shipping Dimensions (palletized carton)

39"x39"x54" (h), 145lb  
100 x 100 x 137cm, 66kg

## Tornado 2300



2300.xxV - Horizontal

Tornado 2300 is the same size as the 2200, but suitable for most 1200 and 1500W moving heads..

### For Luminaires such as:

- Clay Paky Alpha Spot 1200
- Clay Paky Alpha Beam 1500
- Coemar Infinity Spot XL
- DTS XR3000
- Martin MAC3
- Martin MAC2000
- Martin Viper
- Robe 1200E AT
- Robe 2500E AT
- Vari-Lite 3000
- Vari-Lite 3500
- Vari-Lite 3500W

Part Number	Volts	Installation
2300.IND*	230V	↑
2300.INV	230V	↓
2300.INH	230V	→
2300.USD*	208V	↑
2300.USV	208V	↓
2300.USH	208V	→

### Shipping Dimensions (palletized carton)

39"x39"x54" (h), 145lb  
100 x 100 x 137cm, 66kg

\* Salt Fog Filtering – add suffix .SF.  
Download drawings from [Tempest.org](http://Tempest.org)

# Tornado 2400



2400.xxD - Base Down

Tornado 2400 is the Big One, for moving heads up to 2,500W. Now constructed from aluminum like the other Tornados, with extra-powerful fans for those larger, hotter luminaires.

**For Luminaires such as:**

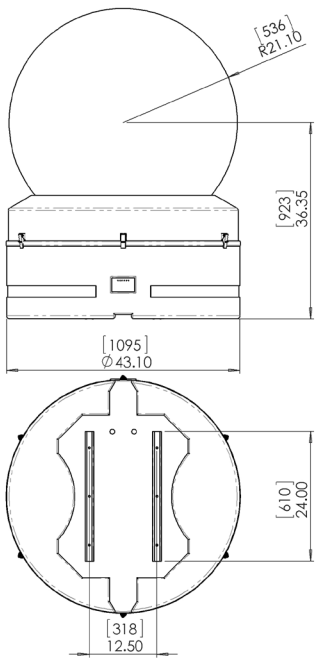
- High End Showgun
- High End Showbeam
- High End DL3
- PRG Bad Boy
- Vari-Lite 3515

**Part Number    Volts    Installation**

2400.IND	230V	↑
2400.INV	230V	↓
2400.USD	208V	↑
2400.USV	208V	↓

**Shipping Dimensions (crated)**

48"x48"x69" (h), weight 260lb  
122 x 122 x 175cm, 118kg



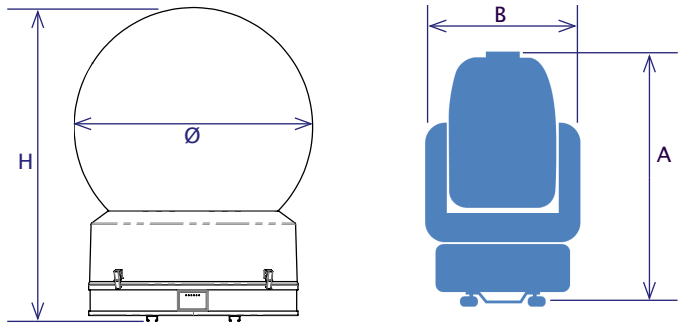
**Weight:** 105 lb/48kg







### Which Tornado?



	Enclosure		Luminaire		
	Diameter (Ø)	Height (H)	Max A*	Max B	Max Watts
Tornado 1900	24" 610mm	37.0" ** 940mm	24.5" 622mm	16" 406mm	400
Tornado 1950	24" 610mm	40" ** 1016mm	27.5" 699mm	16" 406mm	400
Tornado 2000	30" 762mm	40" 1016mm	31" 787mm	21" 533mm	700
Tornado 2100	30" 762mm	40" 1016mm	31" 787mm	21" 533mm	1200
Tornado 2200	36" 914mm	47.5" 1207mm	38" 965mm	21" 533mm	800
Tornado 2300	36" 914mm	47.5" 1207mm	38" 965mm	21" 533mm	1500
Tornado 2400	42" 1067mm	57.5" 1459mm	42" 1067mm	28" 711mm	2500

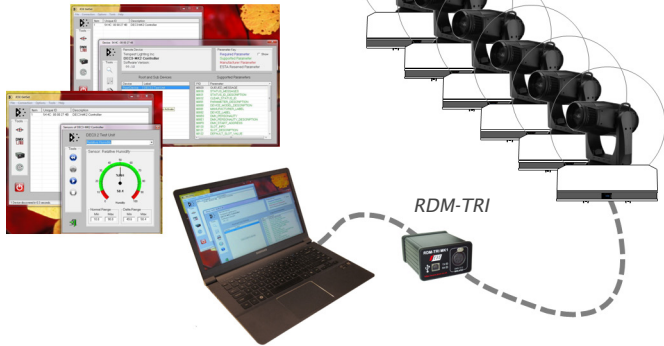
\* Height including omega clamps, with luminaire pointing straight up  
\*\* Includes airflow scoops and mounting feet

## Remote Monitoring

Now you can monitor the environment in your enclosures over a simple RS485 link with the JESE RDM-TRI interface and GetSet™ PC application.

Part #: 2000.190

*GetSet includes spreadsheet views and a graphic dashboard plug-in for Tempest controllers DEC3.2 and up.*



*GetSet software package discovers, configures and monitors all RDM devices on the network. In this example Tempest Tornado enclosures are monitored on the same DMX line as the luminaires inside.*

### DMX512 Transmitter

TRI generates DMX Universe frames asynchronously at rates configurable between 1 to 40 fps. Options are available to update the entire frame at once, a single slot within the frame or to insert a single frame into the transmission sequence.

### RDM ANSI E1.20 Receiver

TRI provides synchronous and asynchronous modes for monitoring DMX Frames, giving the application the flexibility to react only when frame data changes.

### Controller

Real time RDM protocol handling and checking means that the host application is free to make simple requests and issue instructions to all compliant devices.

Onboard discovery routine discovers all compliant devices and compiles a list for the host application to query.

### Responder

TRI will respond as a compliant RDM responder when interrogated in a network.

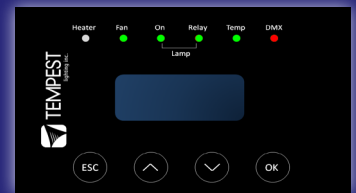
- RDM Protocol Aware
- On Board Discovery
- RDM Idle State Bias
- RDM Error Management
- DMX Input & Output
- 120 Ohm Termination
- DMX Socket 1kV Isolated
- Configurable Parameters
- 1 to 40 Frames/second
- Frame Break Time (BRK)
- Mark After Break (MAB)
- Triple Frame Buffers
- TX & RX Indicators
- Audio Error Indicator
- Two Command Sets
- Robust Firmware Upgrade
- Published Interface Spec



## Goldilocks™

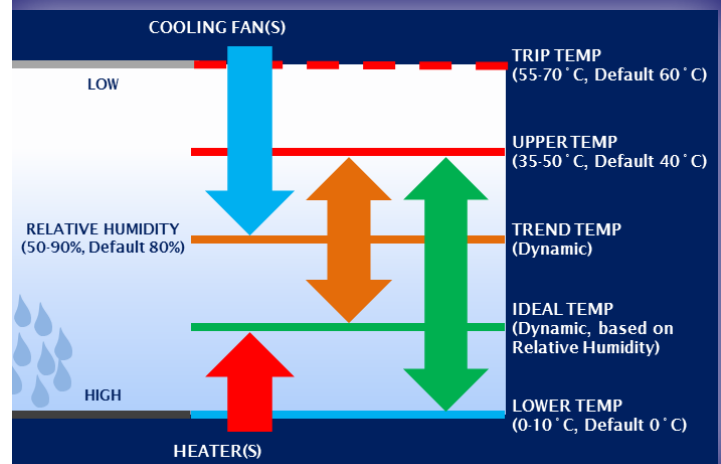
How do we keep your lights from roasting when it's 50°C and there's no shade?

And prevent condensation from destroying your investment overnight?



Tempest's new Goldilocks™ Operating System (patents pending) brings enclosure control to a new level:

Goldilocks keeps the air temperature inside your enclosure just right, removing heat from the projector when the lamp is on or when the enclosure is heated by the sun. We're changing the air about once every second.



Goldilocks uses heaters to maintain a minimum temperature in cold climates.

And Goldilocks tracks temperature and humidity 24/7, keeping relative humidity inside your enclosure just right by using heaters to raise the air temperature when needed, adapting constantly to prevent deadly condensation.

Made in the USA

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