



TEMPEST

# Tornado Marine

Lighting  
Enclosures



# Tornado Marine Lighting Enclosures

Tempest, the world's leading manufacturer of specialist lighting and projector enclosures, brings you Tornado Marine, the only lighting enclosure in the world designed to protect valuable automated luminaires from weather, condensation, and salt fog.

Developed from fifteen years experience protecting lights in all climates around the world, Tornado Marine is specifically designed for cruise ships and beachside resort location, where salt air corrosion is a major hazard.

Now Tornado Marine offers the best ever protection:

- Hydrophobic HEPA filter prevents ingress of moisture and moisture-born contaminants like salt or chlorine
- Powerful fans change the air every 1-2 seconds in the enclosure when the luminaire is on, maintaining a cool operating environment and optimizing equipment and lamp life.
- Marine grade stainless steel latches require a tool to open and close, for additional security
- Aluminum outer parts are specially treated prior to painting, to prevent corrosion in saline environments

Thousands of Tornado enclosures are in daily use in every climate type there is, from the frozen North to the tropics and deserts, in theme parks, resorts, attractions and cruise ships.

Tornado Marine is our finest lighting enclosure yet, building on a solid base, and offering you the best protection in the world for your lighting investment.



*Tornado Marine 2300, for most moving lights 1200-1700W*



*Tornado Marine 1925V, base up, globe down, for Super Sharpy and similar luminaires*



# Tornado Marine

Lighting  
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## Tornado Marine

UV-resistant acrylic globe is guaranteed not to yellow for 5 years. In fact, they last indefinitely.

Spun aluminum top shell, finished with polyester powder coat. Standard color white, other colors to order.

Stainless steel marine latches hold the globe securely in place even in high winds

EPDM Rubber seal resists oil, salt and chemicals

Universal stainless steel luminaire mount with two height settings and universal mounting for bolts, quarter-turn fasteners or omega clamps.

DEC4 control electronics are readily accessible without removing the luminaire

Exhaust air is expelled both sides of the housing base. When the lamp is off, fans maintain positive pressure to prevent outside air ingress

Bolt to structure through holes in stainless steel legs. Slots provided to attach safety cables where required

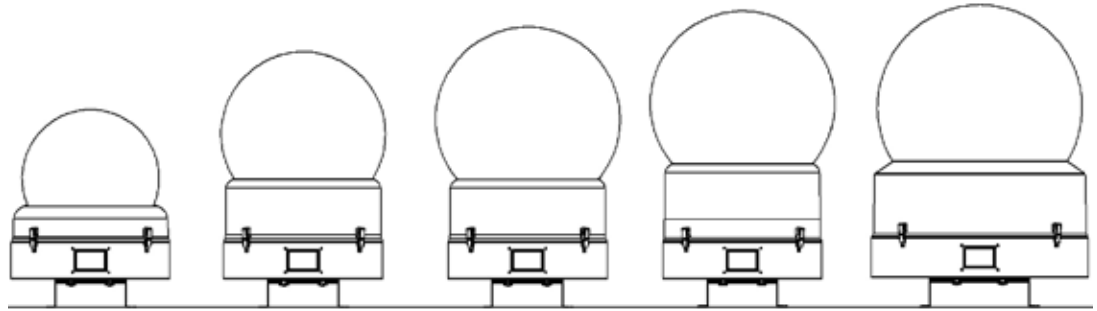
Fan chimneys duct cool air up into the globe. They also contain heaters to maintain minimum temperatures and combat condensation.

DEC4 User Interface

Hydrophobic inlet filter slides out this side

# Tornado Marine Lighting Enclosures

## Which Tornado Marine?



### Tornado Marine 1850

Luminaire max:  
A: 16.5"/420mm  
B: 16"/410mm  
Watts: 500  
Globe Ø: 20"/510mm

### Tornado Marine 1900

Luminaire max:  
A: 24.5"/620mm  
B: 16"/410mm  
Watts: 600  
Globe Ø: 24"/610mm

### Tornado Marine 1925/1935

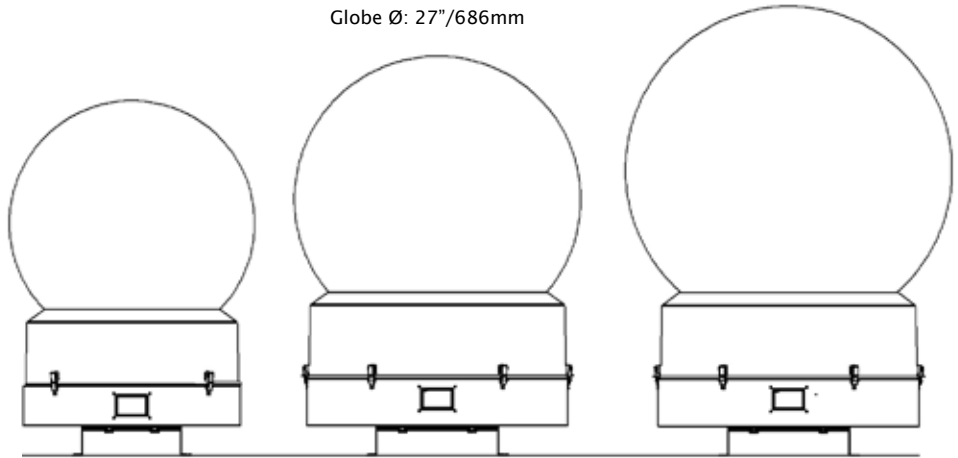
Luminaire max:  
A: 28"/710mm  
B: 16"/410mm  
Watts: 1925: 600  
1935: 800  
Globe Ø: 27"/686mm

### Tornado Marine 1975

Luminaire max:  
A: 30.5"/775mm  
B: 16"/410mm  
Watts: 600  
Globe Ø: 27"/686mm

### Tornado Marine 2000

Luminaire max:  
A: 30.5"/775mm  
B: 24"/610mm  
Watts: 1,200  
Globe Ø: 30"/762mm



### Tornado Marine 2300/2360

Luminaire max:  
A: 38"/970mm  
B: 24"/610mm  
Watts: 1,600  
Globe Ø: 36"/915mm

### Tornado Marine 2400

Luminaire max:  
A: 44"/1,115mm  
B: 28"/710mm  
Watts: 2,500  
Globe Ø: 42"/1,067mm

### Tornado Marine 2500

Luminaire max:  
A: 52"/1,320mm  
B: 28"/710mm  
Watts: 3,000  
Globe Ø: 48"/1,219mm

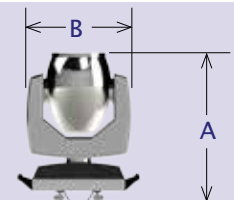
#### \* NEW!

Tornado 2360,  
just for Vari\*Lite  
VL6000  
Beam



#### Notes:

- Luminaire Max Watts means total power consumption, not lamp wattage
- LED luminaires with multiple LED circuits — it is ok to exceed max watts if luminaires will rarely be used in white
- Luminaire Max Height assumes luminaire mounting in low fixture beam setting, using omega clamps. For maximum luminaire height, omit omegas and mount directly to luminaire base (see manual)



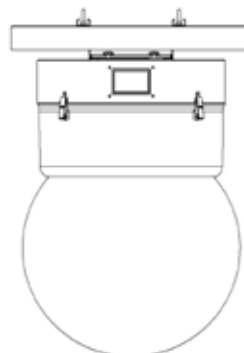
#### Globe Up

(Standard Configuration)



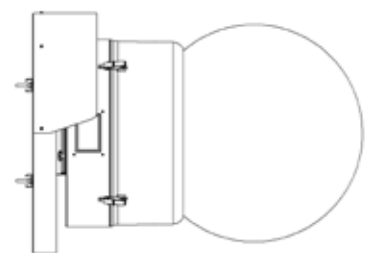
#### Globe Down

Add V to model number



#### Horizontal (Models 1850-2300)

Add H to model number





Yeosu, Korea — the 2012 Maritime World Fair. The Big O, constructed on a man-made island in Yeosu harbor, is 50m in diameter, and houses 48 Martin MAC2K luminaires, in Tornado enclosures. There are another 32 Tornados around the base and on shore, with MAC3 luminaires.

Now the bad news — between each light on the Big O is an automated water jet — like a programmable fire hose creating an amazing water ballet. Oh yes, and it's SALT water, pumped right out of the harbor!

So, since 2012 these lights have been running every night in a kind of saltwater Niagara Falls — probably the worst environment you could imagine.

The good news?

No problems.



**Big O:**  
Design by ECA2, Paris  
Integration By Hansam Systems, Seoul

Watch the video at  
[tempest.biz/installations](http://tempest.biz/installations)



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# Tornado Marine Lighting Enclosures

## RS485 Comms (standard)

Daisy-chain a group of Tornado enclosures together with this RS485 board — one per enclosure, and monitor using a JESE RDM-TXI interface (Tempest part # 2000.195).

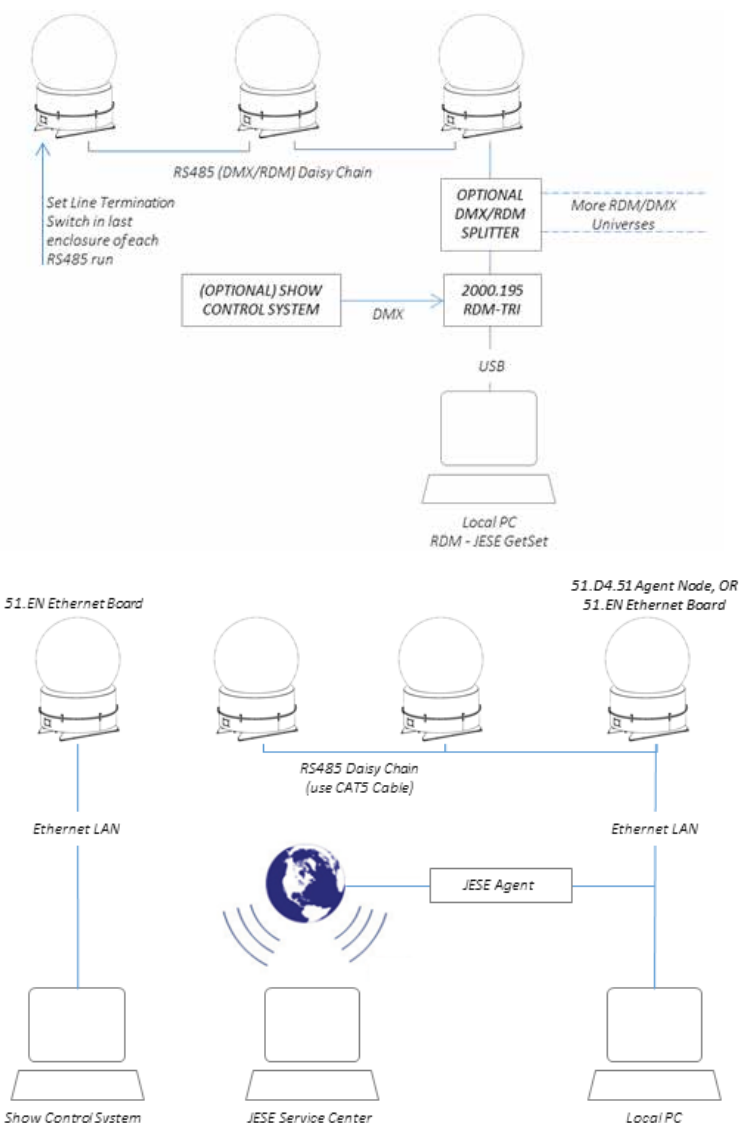
## 51.EN Ethernet Comms

Use this Ethernet adapter to connect one Tornado or a group of Tornados connected using RS485 to a PC or show control system, and monitor using Tempest TEMP protocol. Download the TEMP Developer Guide from [www.tempest.biz/tech-support](http://www.tempest.biz/tech-support).

## JESE Agent - Global Monitoring

Now, there's Agent, from Tempest partner JESE — monitor larger systems in the site control room, or worldwide, from our UK-based control center — see more below...

## System Monitoring



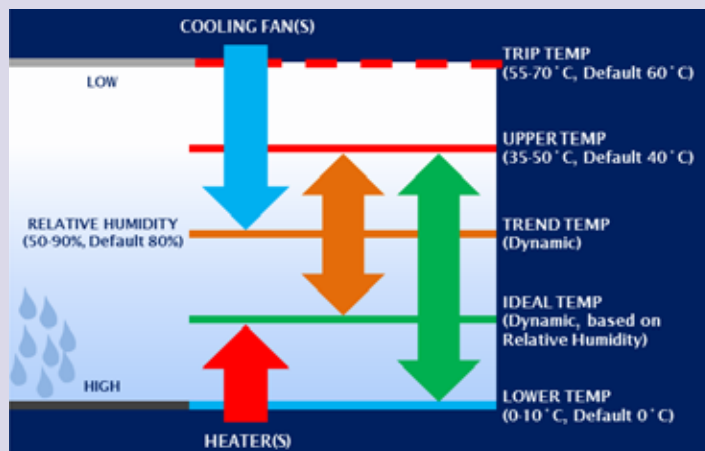
## Goldilocks™

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

And prevent condensation from destroying your projector overnight?

Tempest's unique 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 every few seconds.



Goldilocks uses a heater 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.



# Tornado Marine Lighting Enclosures

With JESE's groundbreaking AGENT monitoring system, you can see exactly what's going on, in every one of those mission-critical enclosures.

And so can we...

We can log into your AGENT system from JESE's UK support center, and help you identify and fix problems — even upload new firmware to your enclosures if that's what you need.

## Low Risk — High Reward

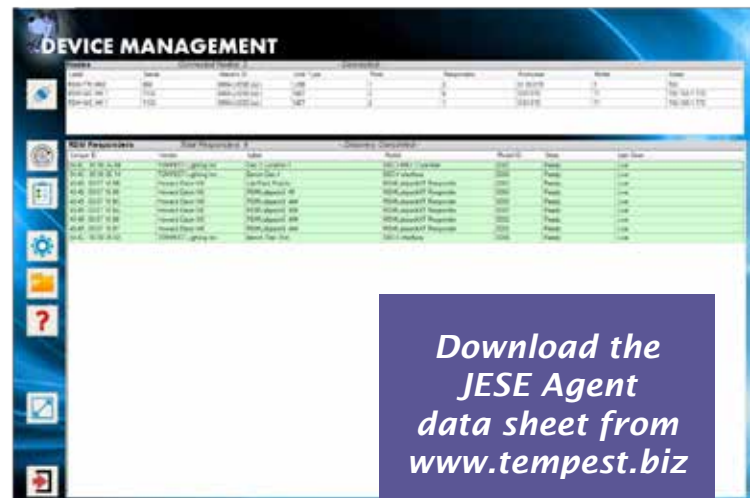
For a very modest initial outlay, and an annual service fee, you can rest assured that your system will alert you to any potential or actual problems, and you will have access to system upgrades and real-time support, from experts who can see right into your system.

Low risk, very high reward.

## JESE Agent—Global Monitoring

And there's more...

AGENT supports the published ANSI DMX and RDM standards, so it can be used to monitor any compliant products, seamlessly with your Tempest enclosures.



Download the  
JESE Agent  
data sheet from  
[www.tempest.biz](http://www.tempest.biz)



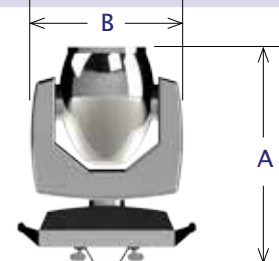
Remote Access  
over Internet

Windows PC  
running JESE  
Agent Client



## Ordering Guide

Part #	Description	Globe ↑↓	Volts 50/60Hz	Globe Ø in [cm]	Height in [cm]	Weight lbs [kg]	Luminaire Max A in [cm]	Luminaire Max B in [cm]	Luminaire Max Watts	Shipping ** Dimensions (lwh) in [cm]	Shipping Weight lbs [kg]
1850.INM	Tornado Marine 1850, Globe Up	↑	200-250*	20 [51]	32 [82]	42 [19]	16.5 [42]	16 [41]	500	32x32x46 [81x81x102]	67 [30]
1850.INMV	Tornado Marine 1850, Globe Down	↓	200-250*	20 [51]	32 [82]	45 [21]	16.5 [42]	16 [41]	500	32x32x46 [81x81x102]	70 [32]
1850.INMH	Tornado Marine 1850, Horizontal	→	200-250*	20 [51]	32 [82]	46 [21]	16.5 [42]	16 [41]		32x32x46 [81x81x102]	70 [32]
1900.INM	Tornado Marine 1900, Globe Up	↑	200-250*	24 [61]	38 [98]	52 [24]	24.5 [62]	16 [41]	500	32x32x46 [81x81x102]	75 [34]
1900.INMV	Tornado Marine 1900, Globe Down	↓	200-250*	24 [61]	39 [99]	60 [27]	24.5 [62]	16 [41]	500	32x32x46 [81x81x102]	83 [38]
1900.INMH	Tornado Marine 1900, Horizontal	→	200-250*	24 [61]	39 [99]	60 [27]	24.5 [62]	16 [41]	500	32x32x46 [81x81x102]	83 [38]
1925.INM	Tornado Marine 1925, Globe Up	↑	200-250*	27 [69]	42 [107]	54 [25]	28 [71]	16 [41]	600	32x32x46 [81x81x102]	77 [35]
1925.INMV	Tornado Marine 1925, Globe Down	↓	200-250*	27 [69]	43 [109]	62 [28]	28 [71]	16 [41]	600	32x32x46 [81x81x102]	91 [41]
1925.INMH	Tornado Marine 1925, Horizontal	→	200-250*	27 [69]	43 [109]	62 [28]	28 [71]	16 [41]	600	32x32x46 [81x81x102]	91 [41]
1935.INM	Tornado Marine 1935, Globe Up	↑	200-250*	27 [69]	42 [107]	54 [25]	28 [71]	16 [41]	800	32x32x46 [81x81x102]	77 [35]
1935.INMV	Tornado Marine 1935, Globe Down	↓	200-250*	27 [69]	43 [109]	62 [28]	28 [71]	16 [41]	800	32x32x46 [81x81x102]	91 [41]
1935.INMH	Tornado Marine 1925, Horizontal	→	200-250*	27 [69]	43 [109]	62 [28]	28 [71]	16 [41]	800	32x32x46 [81x81x102]	91 [41]
1975.INM	Tornado Marine 1975, Globe Up	↑	200-250*	27 [69]	45 [115]	57 [26]	30.5 [78]	16 [41]	600	32x32x48 [81x81x122]	80 [36]
1975.INMV	Tornado Marine 1975, Globe Down	↓	200-250*	27 [69]	46 [117]	65 [30]	30.5 [78]	16 [41]	600	32x32x48 [81x81x122]	90 [41]
1975.INMH	Tornado Marine 1975, Horizontal	→	200-250*	27 [69]	45 [115]	57 [26]	30.5 [78]	16 [41]	600	32x32x48 [81x81x122]	80 [36]
2000.INM	Tornado Marine 2000, Globe Up	↑	200-250*	30 [76]	45 [115]	110 [50]	30.5 [78]	21 [53]	1200	39x39x54 [100x100x137]	145 [66]
2000.INMV	Tornado Marine 2000, Globe Down	↓	200-250*	30 [76]	46 [117]	115 [55]	30.5 [78]	21 [53]	1200	39x39x54 [100x100x137]	160 [73]
2000.INMH	Tornado Marine 2000, Horizontal	→	200-250*	30 [76]	46 [117]	120 [55]	30.5 [78]	21 [53]	1200	39x39x54 [100x100x137]	165 [75]



\* May be supplied 120V to special order

\*\* All Schedule B Export Code:  
9405.99.0000



## Ordering Guide

Part #	Description	Globe ↑↓	Volts 50/60Hz	Globe Ø in [cm]	Height in [cm]	Weight lbs [kg]	Luminaire Max A in [cm]	Luminaire Max B in [cm]	Luminaire Max Watts	Shipping ** Dimensions (lwd) in [cm]	Shipping Weight lbs [kg]
2300.INM	Tornado Marine 2300, Globe Up	↑	200-250	36 [91]	53 [135]	111 [51]	38 [97]	21 [53]	1,700	39x39x54 [100x100x137]	145 [66]
2300.INMV	Tornado Marine 2300, Globe Down	↓	200-250	36 [91]	54 [137]	126 [57]	38 [97]	21 [53]	1,700	39x39x54 [100x100x137]	160 [73]
2300.INMH	Tornado Marine 2300, Horizontal	→	200-250	36 [91]	53 [135]	130 [59]	38 [97]	21 [53]	1,700	39x39x54 [100x100x137]	165 [75]
2360.INM	Tornado Marine 2300, Globe Up	↑	200-250	36 [91]	53 [135]	111 [51]	Vari-lite VL6000			39x39x54 [100x100x137]	145 [66]
2360.INMV	Tornado Marine 2360, Globe Down	↓	200-250	36 [91]	54 [137]	126 [57]	Vari-lite VL6000			39x39x54 [100x100x137]	160 [73]
2360.INMH	Tornado Marine 2300, Horizontal	→	200-250	36 [91]	53 [135]	130 [59]	Vari-lite VL6000			39x39x54 [100x100x137]	165 [75]
2400.INM	Tornado Marine 2400, Globe Up	↑	200-250	42 [107]	61 [153]	204 [93]	44 [112]	28 [71]	2,500	48x48x69 [122x122x175]	245 [111]
2400.INMV	Tornado Marine 2400, Globe Down	↓	200-250	42 [107]	61 [153]	209 [95]	44 [112]	28 [71]	2,500	48x48x69 [122x122x175]	250 [114]
2500.INM	Tornado Marine 2500, Globe Up	↑	200-250	48 [122]	67 [170]	192 [87]	52 [132]	28 [71]	3,000	54x54x75 [137x137x191]	260 [118]
2500.INMV	Tornado Marine 2500, Globe Down	↓	200-250	48 [122]	68 [172]	212 [96]	52 [132]	28 [71]	3,000	54x54x75 [137x137x191]	270 [123]

### Options

51.EN	Ethernet Board (Links an enclosure or a group of enclosures with RS485 boards to an Ethernet network, for use with TEMP protocol)
20.SWR	Stainless Steel Safety Wire ring on Globe Assembly (safety wire not included)
51.HF.23	Spare Salt Fog Inlet Filter, Tornado Marine 1850-1975
51.HF.32	Spare Salt Fog Inlet Filter, Tornado Marine 2000-2300
51.HF.38	Spare Salt Fog Inlet Filter, Tornado Marine 2400-2500
0000.CL	Custom Base Color (standard is RAL9003 White Gloss). Specify Black or any RAL number

### Custom Colors

All the enclosures in this brochure are shown in Tornado Marine standard white (RAL 9003 Gloss) finish. Black or any RAL color are available to special order.

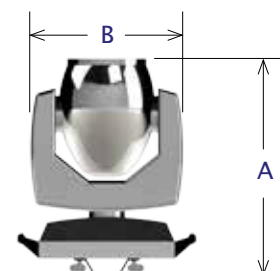


\* May be supplied 120V to special order.

\*\* All Schedule B Export Code: 9405.99.0000

All Tornado Enclosures are built to order. Please consult factory for lead times.

All sales are subject to Tempest Lighting, Inc. Standard Terms and Conditions, available for download at [www.tempest.biz](http://www.tempest.biz).



## Tornado Marine Configurator

Please complete this form and email to us at [info@tempest.biz](mailto:info@tempest.biz)

Name	
Company	
Email	
Phone	
Project Name and Location	
Luminaire type	
Tornado Model	
Quantity	
Destination Country	
Install Date	
Orientation	Globe Up <input type="checkbox"/> Globe Down <input type="checkbox"/> Horizontal <input type="checkbox"/>
<b>Required Options</b>	
51.EN Ethernet Board	Yes, Qty _____ No <input type="checkbox"/>
20.SWR Safety Wire Ring	Yes, Qty _____ No <input type="checkbox"/>
Spare Inlet Filter	Yes, Qty _____ No <input type="checkbox"/>
Color	Standard, RAL 9003 White Gloss <input type="checkbox"/>
	Custom, RAL # _____
	Gloss Level _____%

Custom Requests:

Factory Use Only:

SO Number

Date



 Made in the USA

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

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