TEMPEST

Zen

Hush Projector Enclosures 5-50K

Zen
Hush Projector Enclosures

Tempest is the world's leading manufacturer of large format indoor projector enclosures for noise attenuation in presentation suites, digital cinema, live theatre and concert venues — any noise-sensitive indoor space.

Until recently, Tempest's Whispr and Tacit enclosures achieved excellent noise attenuation through the use of cooling fans located in a remote location, so that their noise is not disturbing to the audience.

The remote fan strategy delivers excellent acoustic performance, but may not be feasible for installation in some venues, including historic theatres, concert halls and museums, where new ductwork may be prohibited.

Now, Tempest Zen enclosures offer a standalone solution, with noise attenuation very close to remote fan levels, but without the need for inlet or exhaust ducts.

Airflow starts automatically when the projector comes out of standby. Tempest's patented DEC4 controller brings you a host of additional control and monitoring features, with an over-dimensioned variable-speed DC blower with 1% speed increments for total control of cooling and acoustic performance. Zen includes projector inlet temperature sensing, overtemp protection, and optional networked monitoring using **Tempest System Manager**.

Zen 57.305, shown here with a Panasonic PT-RQ35K projector.

Excellent projector access from either side.

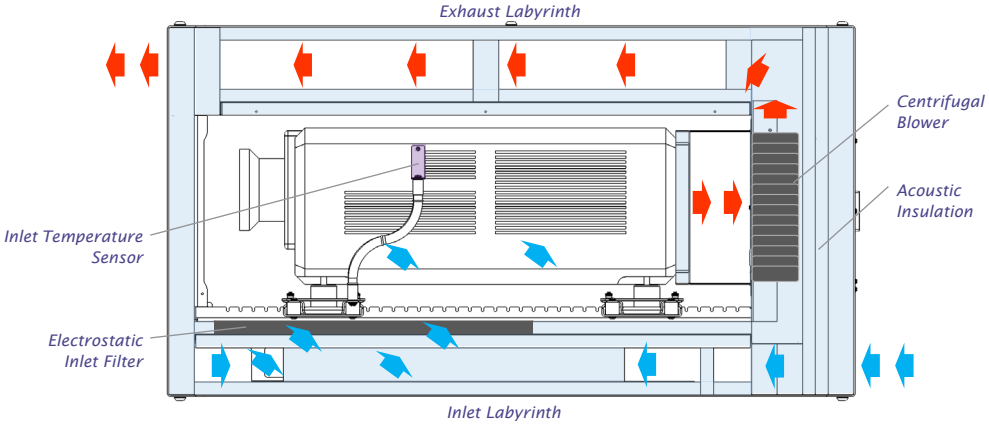
zen : a state of calm attentiveness in which one's actions are guided by intuition rather than by conscious effort.

Webster's Dictionary

Integral Cooling

Inlet air enters through the base, through an inlet labyrinth made from fire-resistant melamine acoustic foam. It then passes through an electrostatic dust filter before reaching the projector.

Exhaust air similarly passes though an exhaust labyrinth above the projector chamber and exits above the enclosure port glass.



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Projector Types

We can build you a Zen enclosure for almost any projector/lens combination — but this is important: to get Zen's super-low sound levels it's vital that the projector exhaust mates snugly to the foam pad on the front of the exhaust blower. Most projectors exhaust to the rear, but those emitting hot air to the front or sides will be better suited to a Tempest Tacit enclosure.

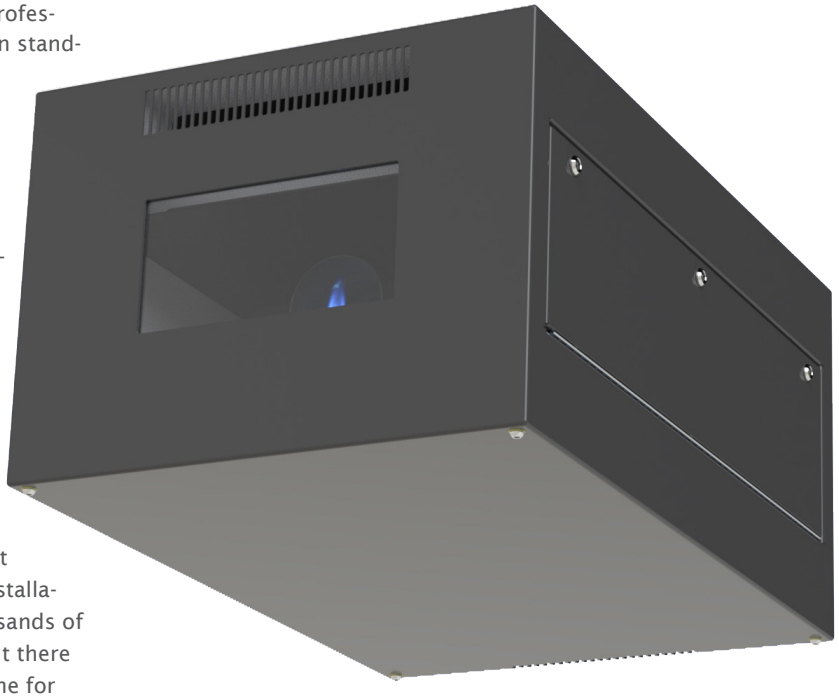
Zen Custom

Most Zen enclosures are 'vanilla' landscape. But we know that you'll be needing portrait and UST versions too, and we deal with these on a case-by-case basis — just contact us and we'll be a part of your design team.

TEMPEST

Professional Grade Installation

Zen is the ONLY true professional grade installation standalone hush enclosures designed and tested to meet or exceed the expectations of architects and acousticians for the most stringent noise-sensitive environments.



Zen is not a wooden touring box adapted for use in auditoria. Its pedigree is Tempest's unique experience designing and building projector enclosures for the most exacting permanent installations — there are thousands of Tempest enclosures out there working every day, some for more than a decade.

Tempest works closely with all the leading video projector manufacturers, and all Tempest enclosures for projectors 20,000 lumens and up are tested and approved with the intended projector before a single one is shipped. Your projector warranty is safe with Tempest.

Rigging & Wiring

All Zen enclosures come with six M12 rigging points on the top and four on the bottom, for simple, safe installation. Tempest offers a wide range of rigging accessories too!

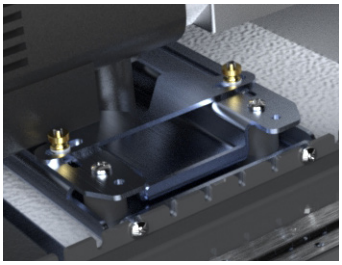
And you can chose from two pairs of discreet conduit knockouts for power and signal wiring access, on the back or top, depending on your application.

Projector Mounts

This is so important — it's easy to install your projector from either side of the Zen enclosure, and to access it the same way for service.

So, you can easily adjust the projector pan, tilt and roll, then lock it securely in position.

Did we mention the projector 'floats' on neoprene vibration mounts? We're not taking any chances — neither should you.



Filter

Zen's incoming air is filtered through a washable electrostatic dust filter, prolonging the life of your projector's (expensive) inlet filters.

Power Outlets

Zen gives you a dedicated projector power outlet (usually C19), as well as two C13 outlets for auxiliary equipment — media servers, fiber boxes, etc.

Port Glass

Zen's optical-grade port glass assures crisp images with minimal light loss.

Security

Three heavy-duty security latches on each side door guarantees projector security, even in public areas.

Documentation

Tempest wants you to be well-informed! Every Tempest enclosure comes with a detailed and comprehensive user manual.

And detailed acoustic data and competitive analysis is available for download at tempest.biz.

And 2D .pdf and .dwg drawings.

And 3D .STEP files.

That's Professional Grade.

Zen
Hush Projector Enclosures

Professional Grade Touring

Zen to Go

Touring theatre, opera, dance and even orchestras are using projection more and more. So when they tour, the projectors go too.

Now Zen gives you a professional grade touring hush box, with all the benefits of the world's qui-etest indoor enclosure, and rigging and wiring built for the road.

Of course, you can use these rigging accessories for permanent installation too!

This Zen 210 is road ready, with Truss Kit, Casters and Touring Connector options.

Truss Kit (57.TK.xxx)

Hang any Zen enclosure from any truss between 12"-24" (31-62cm).

Casters Kit (57.CK.xxx)

Four or six) heavy-duty braked casters let you roll this Zen off the truck, onto the stage, and fly it out (and you can travel the projector inside to save truck space).

Unistrut Kit (57.UR.xxx)

A pair of Unistrut rails mount-ed above or below your Zen enclosure makes installation easy, using industry-standard hardware.

Cyclovator (51.C2)

Adjustable tilt kit for angles up to 65˚ (requires Unistrut Kit).

Touring Connector Kit (57.TCK)

This gives you a dedicated power inlet connector plus six Neutrik feedthrough connectors on the back of the enclosure.

Power Inlets — choice of:

- Neutrik PowerCon True
- IEC309 16A
- IEC309 32A

Neutrik Feedthroughs — pick any combination of up to six compatible connectors.

Stacking Kit (51.SK)

Stack up to three Zen enclo-sures (ground supported) or two (hanging), with 75mm (3in) air gap between enclosures.

Angle Mount Kit (55.AM.x)

Project up or down at up to 45˚ fixed angle with this simple kit.

That's Professional Grade.

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Zen — or Tacit?

Tempest also offers Tacit ducted indoor projector enclosures.

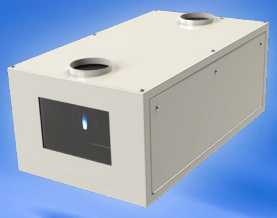
There is not much difference in noise attenuation between Tacit and Zen enclosures, but they both offer advantages for different types of application:

Use Zen:

- *Simple installation*
- *No air ducts*
- *Landscape format*

Use Tacit:

- *Slightly better acoustic performance*
- *Portrait, UST versions*
- *Custom applications*
- *Hostile environments (eg: pool areas, theme park rides)*
- *if heat load in the space is an issue*



Tacit Info

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Professional Grade Acoustics

Frequency (Hz)	Ambient dB	Projector (Panasonic PT-RZ21K) dB	Projector in Zen 210 Enclosure dB
20	19.4	28.2	23.3
25	17.8	29.9	34.7
32	13.6	24.7	24.7
40	17.3	24.0	26.6
50	12.2	23.2	25.4
63	16.3	26.6	28.5
80	15.0	25.1	25.2
100	7.3	28.3	25.0
125	8.0	31.6	26.5
160	1.6	34.0	28.5
200	-1.5	37.7	29.7
250	-1.2	39.0	25.3
315	-1.7	36.3	22.3
400	-1.1	35.7	19.4
500	-0.4	37.0	21.4
630	-0.1	36.2	15.5
800	0.6	35.4	11.0
1,000	1.3	35.5	10.6
1,250	1.9	34.2	8.0
1,600	3.9	31.9	6.3
2,000	3.4	29.6	5.1
2,500	4.3	31.8	5.4
3,150	5.2	29.1	5.7
4,000	6.2	23.0	6.4
5,000	7.0	19.9	7.1
6,300	7.6	17.6	7.7
8,000	7.9	14.8	7.9
10,000	8.0	13.9	8.0
12,500	8.0	12.2	8.0
16,000	8.1	13.3	8.1
20,000	8.7	21.0	8.3
dBA	**17.0**	**44.0**	**26.1**

Acoustic Performance Data

The data shown were generated in an anechoic chamber, using a Panasonic PT-RZ21K projector and a Zen 57.210.L enclosure. Three tests were performed:

1. Ambient chamber sound pressure level
2. Projector, 100% ight output, on isolated mount
3. Projector, running in Zen enclosure, on isolated mount.

Detailed acoustic test data, from anechoic and reverberant chambers, are available for download here.

Acoustic Test Setup (Anechoic Chamber)

Test Lab:

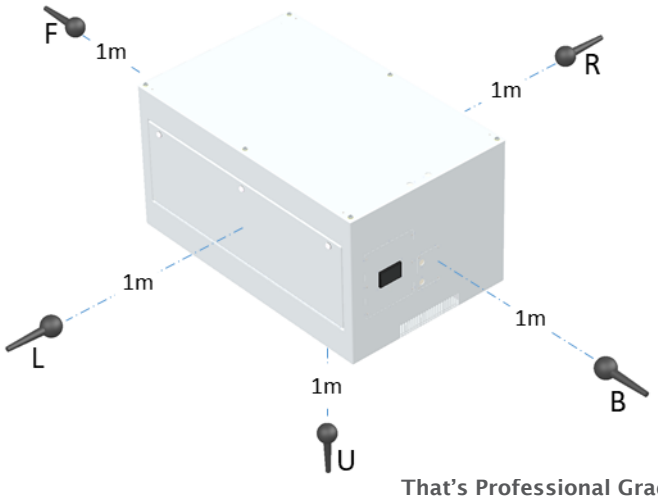
Western Electro-Acoustic Laboratory, Santa Clarita, California

Date: April 8th, 2021

Microphones:

1. 1m in front of test unit
2. 1m right of test unit
3. 1m left of test unit
4. 1m behind test unit
5. 1m below test unit

Mic values were integrated to arrive at the above values.



That's Professional Grade.

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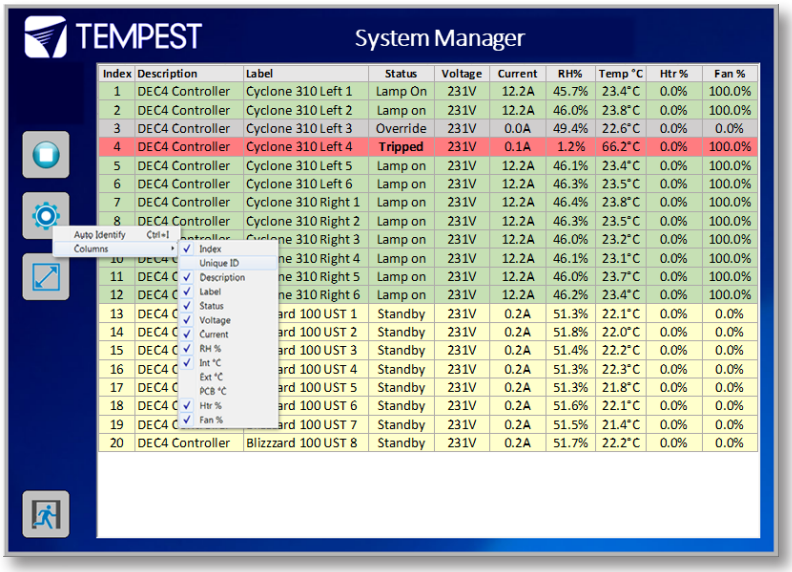
Tempest System Manager
(optional)

Tempest System Manager is a Windows app running on a local PC connected to your enclosures over a local area network.

TSM discovers any Tempest enclosures present on the network at initialization, and monitors system attributes in real time, including lamp, fan and heater status, temperature, relative humidity and more.

TSM may also be used to upload firmware updates to enclosure controllers over the network, without having to visit each enclosure.

The TSM license includes 12 months unlimited user support from Tempest electronics partner JESE, and continuing support is available for a modest annual fee.



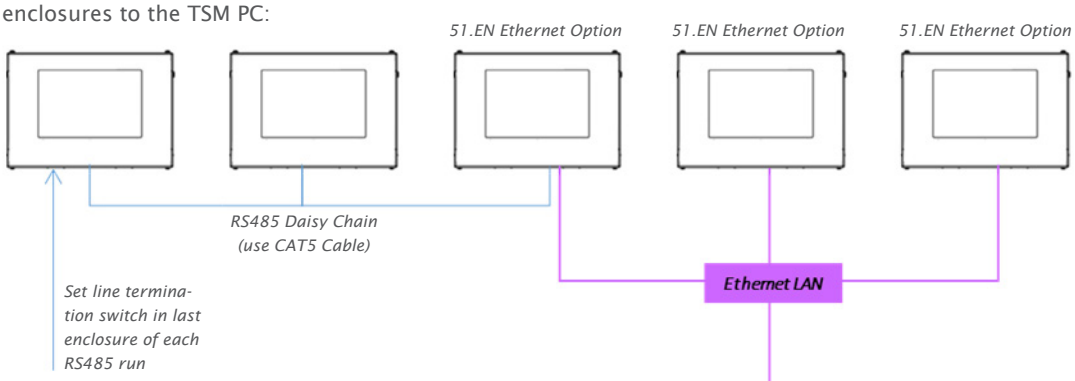
Index	Description	Label	Status	Voltage	Current	RH%	Temp °C	Htr %	Fan %
1	DEC4 Controller	Cyclone 310 Left 1	Lamp On	231V	12.2A	45.7%	23.4°C	0.0%	100.0%
2	DEC4 Controller	Cyclone 310 Left 2	Lamp on	231V	12.2A	46.0%	23.8°C	0.0%	100.0%
3	DEC4 Controller	Cyclone 310 Left 3	Override	231V	0.0A	49.4%	22.6°C	0.0%	0.0%
4	DEC4 Controller	Cyclone 310 Left 4	**Tripped**	231V	0.1A	1.2%	66.2°C	0.0%	100.0%
5	DEC4 Controller	Cyclone 310 Left 5	Lamp on	231V	12.2A	46.1%	23.4°C	0.0%	100.0%
6	DEC4 Controller	Cyclone 310 Left 6	Lamp on	231V	12.2A	46.3%	23.5°C	0.0%	100.0%
7	DEC4 Controller	Cyclone 310 Right 1	Lamp on	231V	12.2A	46.4%	23.8°C	0.0%	100.0%
8	DEC4 Controller	Cyclone 310 Right 2	Lamp on	231V	12.2A	46.3%	23.5°C	0.0%	100.0%
9	DEC4 C	ne 310 Right 3	Lamp on	231V	12.2A	46.0%	23.2°C	0.0%	100.0%
10	DEC4 C	ne 310 Right 4	Lamp on	231V	12.2A	46.1%	23.1°C	0.0%	100.0%
11	DEC4 C	ne 310 Right 5	Lamp on	231V	12.2A	46.0%	23.7°C	0.0%	100.0%
12	DEC4 C	ne 310 Right 6	Lamp on	231V	12.2A	46.2%	23.4°C	0.0%	100.0%
13	DEC4 C	ard 100 UST 1	Standby	231V	0.2A	51.3%	22.1°C	0.0%	0.0%
14	DEC4 C	ard 100 UST 2	Standby	231V	0.2A	51.8%	22.0°C	0.0%	0.0%
15	DEC4 C	ard 100 UST 3	Standby	231V	0.2A	51.4%	22.2°C	0.0%	0.0%
16	DEC4 C	ard 100 UST 4	Standby	231V	0.2A	51.3%	22.3°C	0.0%	0.0%
17	DEC4 C	ard 100 UST 5	Standby	231V	0.2A	51.3%	21.8°C	0.0%	0.0%
18	DEC4 C	ard 100 UST 6	Standby	231V	0.2A	51.6%	22.1°C	0.0%	0.0%
19	DEC4 C	ard 100 UST 7	Standby	231V	0.2A	51.5%	21.4°C	0.0%	0.0%
20	DEC4 Controller	Blizzzard 100 UST 8	Standby	231V	0.2A	51.7%	22.2°C	0.0%	0.0%

TSM Model Numbers

51.TSM.10	Up to 10 enclosures
51.TSM.25	Up to 25 enclosures
51.TSM.50	Over 25 enclosures

Monitoring Connections

There are two ways to connect enclosures to the TSM PC:



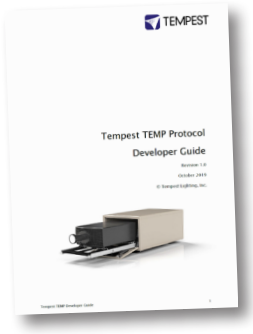
1. RS485 and Ethernet

Daisy-chain a group of Cyclone enclosures together with an RS485 cable, and use a 51.EN Ethernet board at the end of the line to connect to the network.

2. Ethernet in each Enclosure

Specify the 51.EN Ethernet option and connect each enclosure to the network.

TEMP Protocol



Tempest also publishes a simple protocol for use by integrators wishing to monitor enclosures over an existing control network.

Connection options are the same as for System Manager.

Download the TEMP Developer Guide here:

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Zen Models

Zen Projector Enclosure Dimensions[1]			Enclosure								Shipping							
Model	Orientation[2]	Typical Projectors[3]	L (cm)	W (cm)	H (cm)	Kg	L (in)	W (in)	H (in)	Lb	L (cm)	W (cm)	H (cm)	Kg	L (in)	W (in)	H (in)	Lb
57.100.L	Landscape	*Most, 7-10,000 Lumens*[4]	102	81	61	66	40	32	24	146	122	102	86	103	48	40	34	226
57.125.L	Landscape	*Panasonic PT-MZ Series*	102	91	61	75	40	36	24	165	122	112	86	111	48	44	34	245
57.150.L	Landscape	*Most 12-15,000 Lumens*[4]	122	81	66	86	48	32	26	190	142	102	91	123	56	40	36	270
57.200.L	Landscape	*Epson EB-PU 22xx*	86	91	66	68	34	36	26	150	107	112	91	104	42	44	36	230
57.202.L	Landscape	*Panasonic PT-RQ25K, DPI M-Vision 23K*	117	81	66	81	46	32	26	178	137	102	91	117	54	40	36	258
57.204.L	Landscape	*Christie M4K-25*	117	81	71	83	46	32	28	183	137	102	97	120	54	40	38	263
57.210.L	Landscape	*Panasonic PT-RZ21K, Barco G100*	127	91	71	109	50	36	28	240	147	112	97	145	58	44	38	320
57.250.L	Landscape	*Epson L-30000*	127	94	71	124	50	37	28	273	147	114	97	161	58	45	38	353
57.305.L	Landscape	*Panasonic PT-RQ35K, RZ34K, Barco UDM*	132	86	81	119	52	34	32	261	152	107	107	166	60	42	42	366
57.310.L	Landscape	*Barco UDX 40K*	142	91	76	129	56	36	30	283	163	112	102	176	64	44	40	388
57.314.L	Landscape	*Christie Griffyn 32K*	152	91	81	139	60	36	32	305	173	112	107	186	68	44	42	410
57.322.L	Landscape	*DPI Titan Laser 37K*	147	94	81	162	58	37	32	356	168	114	107	210	66	45	42	461
57.514.L	Landscape	*Christie Griffyn 50K*	152	94	81	158	60	37	32	348	173	114	107	206	68	45	42	453
57.522.L	Landscape	*DPI Insight 8K 37K*	168	94	91	222	66	37	36	488	188	114	117	278	74	45	46	613
57.525.L	Landscape	*Panasonic PT-RQ50K*	163	94	86	179	64	37	34	394	183	114	112	236	72	45	44	519

[4] Zen 100, 150 Maximum Projector Dimensions (including Lens)									
Model	Orientation[2]	Typical Projectors[3]	L (cm)	W (cm)	H (cm)	L (in)	W (in)	H (in)	Watts
57.100.L	Landscape	*Most, 7-10,000 Lumens*	69	61	25	27	24	10	1,250
57.150.L	Landscape	*Most 12-15,000 Lumens*	89	61	30	35	24	12	1,800

[1] *Due to continuous product development, weights and dimensions are subject to change. Check with Tempest before construction work.*

[2] *Landscape versions shown here. Portrait and UST versions are custom or semi-custom. Please consult Tempest for details*

[3] *For projectors not shown here, please contact Tempest — we will be happy to accomodate any projector type*

[4] *Please advise Tempest of the intended projector and lens models for confirmation of suitability*

All Zen products are built to order. Please contact Tempest for lead times.

All sales are subject to Tempest Lighting, Inc. Standard Terms and Conditions of Sale, available for download at www.tempest.biz.

All Schedule B Export Code: 9405.99.0000

Custom Colors

All the enclosures in this brochure are shown in our standard warm white semi-gloss finish or black. Any RAL color available to special order.

Options

51.EN	Ethernet Comms
51.TSM.xx	Tempest System Manager
57.815	Replacement Inlet Filter for Zen enclosures manufactured after 2020
0000.CL	Custom Color — specify any RAL #, plus % gloss desired
57.UR.xxx	Unistrut Rail Kit *(Use the 3-digit enclosure model #, eg 57.UR.210 for Zen 57.210)*
55.AM.x	Angle Mount Kit
57.TK.xxx	Zen Truss Kit *(Use the 3-digit enclosure model #, eg 57.TK.210 for Zen 57.210)*
51.SK	Stacking Kit
51.C2	Cyclovator
57.CK.xxxx	Casters Kit
57.TCK	Touring Connectors Kit

CAD drawings and user manuals at www.tempest.biz

Zen Configurator

Please complete this form and email to us at info@tempest.biz

Name		
Company		
Email		
Phone		
Projector & Lens Make & Model	*Projector:*	*Lens:*
Zen Model	57. _____	
Quantity		
Destination Country		
Install Date		
Supply Voltage	*100-125VAC* ☐ *200-250VAC* ☐	
Unistrut Kit	Yes, Qty _____ No ☐	*Mounting: Top* ☐ *Bottom* ☐
Stacking Kit	Yes, Qty _____ No ☐	
Truss Kit	Yes, Qty _____ No ☐	
Angle Mount	Yes, Qty _____ No ☐	
Cyclovator	Yes, Qty _____ No ☐	
Ethernet Option	Yes, Qty _____ No ☐	*51.D4.23 (TSM)* ☐ *51.D4.15 (TEMP)* ☐
Spare Inlet Filter	Yes, Qty _____ No ☐	
Zen Touring Options		
Casters Kit	Yes, Qty _____ No ☐	
Truss Kit	Yes, Qty _____ No ☐	
Touring Connectors Kit	Yes, Qty _____ No ☐	
Power In Connector	IEC C20 ☐ IEC309 16A ☐ IEC309 32A ☐ Other: _____ ☐	NEMA L6-20 ☐ NEMA L6-30 ☐ NEMA L14-20 ☐ NEMA L14-30 ☐
Signal Connectors *(up to six Neutrik D-style feedthroughs)*	Type: A: Ethercon B: OpticalCon C: HDMI D: Displayport E: BNC F: Other:_____	*Position: (indicate type)* *1* ___ ___ *2* *3* ___ ___ *4* *5* ___ ___ *6*

Color	Standard, Warm White ☐ Standard, Black ☐ Custom, RAL # _____ Gloss Level * _____% ** Gloss levels higher than 30% may show up weld marks. Tempest advises against high gloss finishes and accepts no liability in this event.*

Custom Requests:

Factory Use Only:	
SO Number	
Date	
Electrical	IEC ☐ NEMA ☐
Blower Baffle Part #	57.808._____

User manuals, 2D and 3D CAD drawings at www.tempest.biz

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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