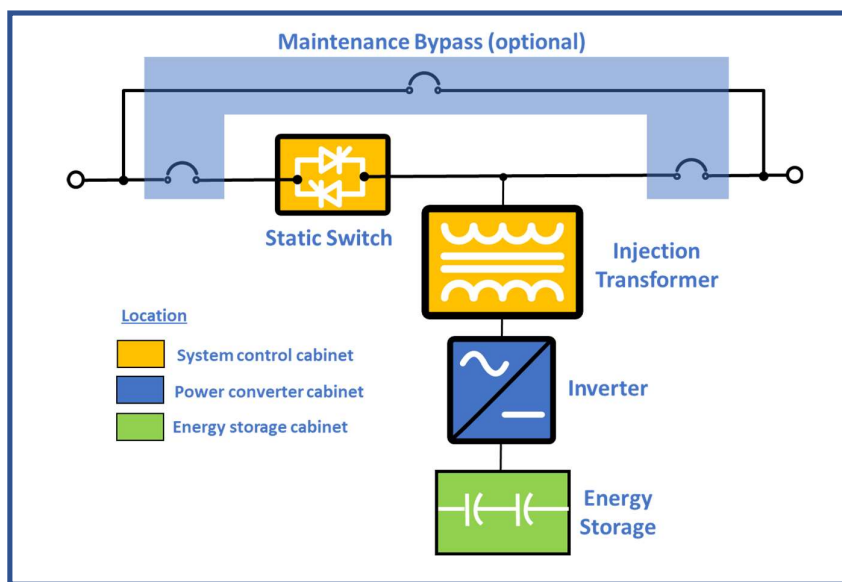




**Red Tail** is a series of energy storage-based Voltage Loss Compensator (VLC) systems.

- **Includes:** Raptor power converter cabinet(s), system cabinet, and energy storage cabinet(s).
- **Featuring:** ultra-fast response time, high efficiency, and ultracapacitors for energy storage.
- **Applications:** voltage sag compensators, industrial UPS, dual source and generator bridging.

**Red Tail VLC typical block diagram**



# Red Tail VLC Technical Specifications

## AC Input

<b>Nominal Voltage</b>	200 / 208 / 220 380 / 400 / 415 460 / 480 VAC
<b>Source Type</b>	Three phase wye (4 wires plus ground) consult factory for other types.
<b>Operating Voltage Range (static bypass)</b>	± 10 % of nominal (adjustable)
<b>Nominal Operating Frequency</b>	50 / 60 Hz (auto select)
<b>Operating Frequency Range</b>	+/- 4 Hz
<b>Power Factor</b>	0.5 lagging to 0.9 leading
<b>Maximum Crest Factor</b>	2
<b>Overload Capacity (static bypass)</b>	120 % for 60 s 150 % for 30 s 200 % for 10 s 300 % for 5 s 500 % for 1 s

## AC Output

<b>Voltage Sag &amp; Momentary Interruption Protection Magnitude and Duration</b>	Three-phase: 90-0 % nominal for 2.5 sec (standard model) / 5 sec (extended model)
<b>Voltage Swell</b>	Three-phase: 115 % of nominal for 2.5 sec
<b>Maximum Continuous Power</b>	125 / 250 / 375 / 500 kVA
<b>Output Voltage Restoration</b>	> 95 % of nominal (typical)
<b>Voltage Correction Response Time</b>	< 2 ms (typical)
<b>Typical Efficiency (50~100% load)</b>	99 % (400 – 480V) 98 % (200 – 380V)

## Mechanical

<b>Cabinet Construction</b>	Light beige powder-coated galvanneal cabinet
<b>Fail Safe Bypass</b>	Optional
<b>Maintenance Bypass</b>	Optional
<b>Cabinet Environmental Rating</b>	NEMA 1 / IP 20 (for use in protected indoor environments)
<b>Cooling Method</b>	Active convection
<b>Cable Entry</b>	Top (consult factory for other options)
<b>Audible Noise @ 2 m</b>	< 75 dB
<b>Energy Storage</b>	Ultracapacitors

## Environment

<b>Operating Altitude</b>	0 – 2,000 m above sea level (without derating)
<b>Operating Temperature</b>	0 – +40°C
<b>Operating Humidity</b>	0 – 90 % relative humidity (non-condensing)

## Communication

<b>Communication Protocol</b>	Ethernet / Modbus TCP
<b>Display</b>	7" Color TFT LCD Capacitive Touch Screen Display

## Design Standards

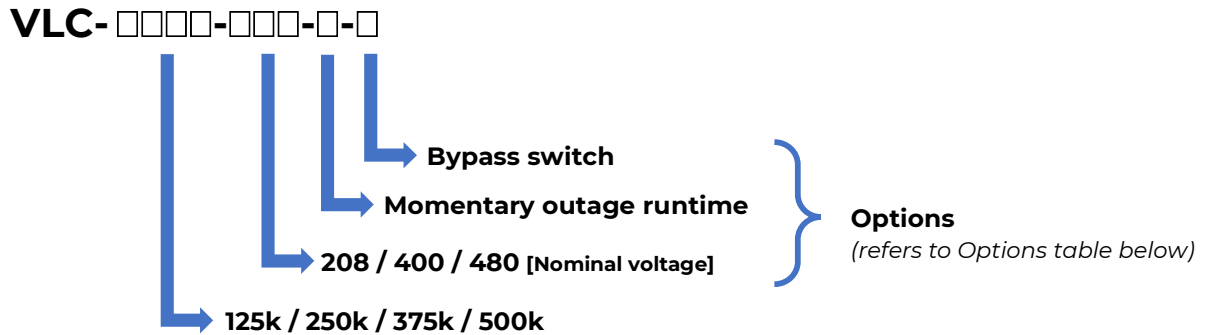
UL, CE, IEC, SEMI F47, Samsung Power Vaccine

## Limited Warranty

2 Years, Parts % Labor

\*Due to continual engineering improvement, specifications are subject to change without notice.

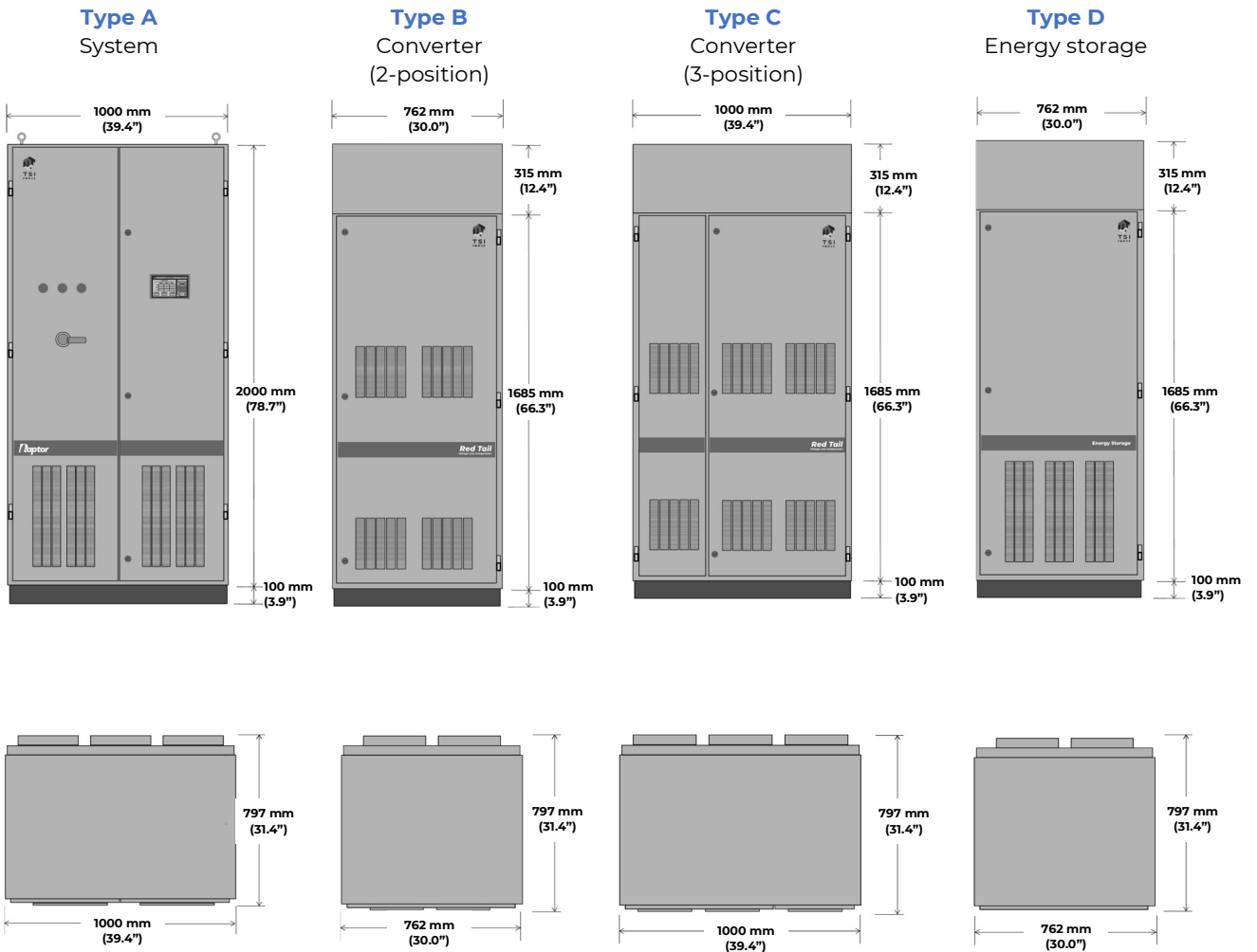
# Model Number Selection Guide



Options	Descriptions	Suffix
<b>Nominal voltage (V)</b>	Nominal voltage of the equipment; user adjustable.	<b>208</b> (Adjustable 189 – 220) <b>400</b> (Adjustable 364 – 424) <b>480</b> (Adjustable 437 – 509)
<b>Momentary outage runtime (seconds)</b>	Duration of runtime under full load condition.	<b>S:</b> Standard 2.5 <b>X:</b> Extended 5
<b>Bypass switch</b>	Switch providing normal utility supply to load for maintenance or in the event of equipment failure.	<b>N:</b> None <b>F:</b> Non-isolating manual fail-safe rotary bypass switch <b>M:</b> Manual maintenance bypass circuit breakers <b>A:</b> Automatic maintenance bypass circuit breakers

# VLC Cabinet Type and Dimensions

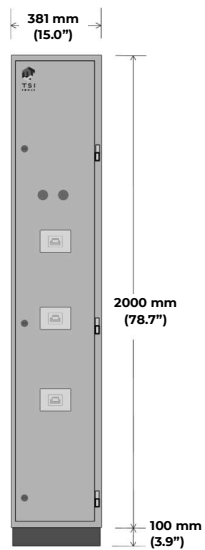
Red Tail VLC systems are configured with the following types of cabinets: system, converter, energy storage and optional maintenance bypass cabinet. The dimensions are shown below:



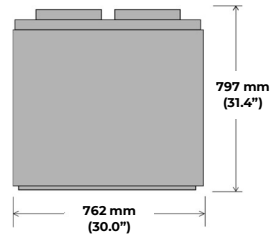
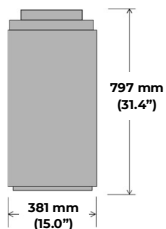
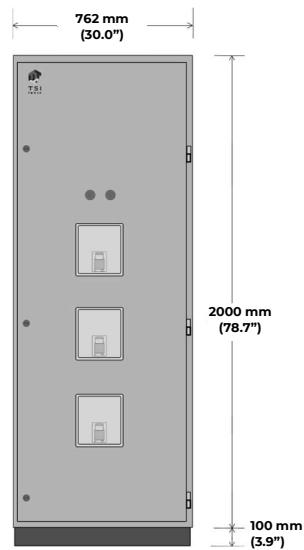
# Bypass Cabinet and Dimensions

The dimensions of the optional maintenance bypass cabinets are given below:

**Type E**  
Maintenance bypass



**Type F**  
Maintenance bypass



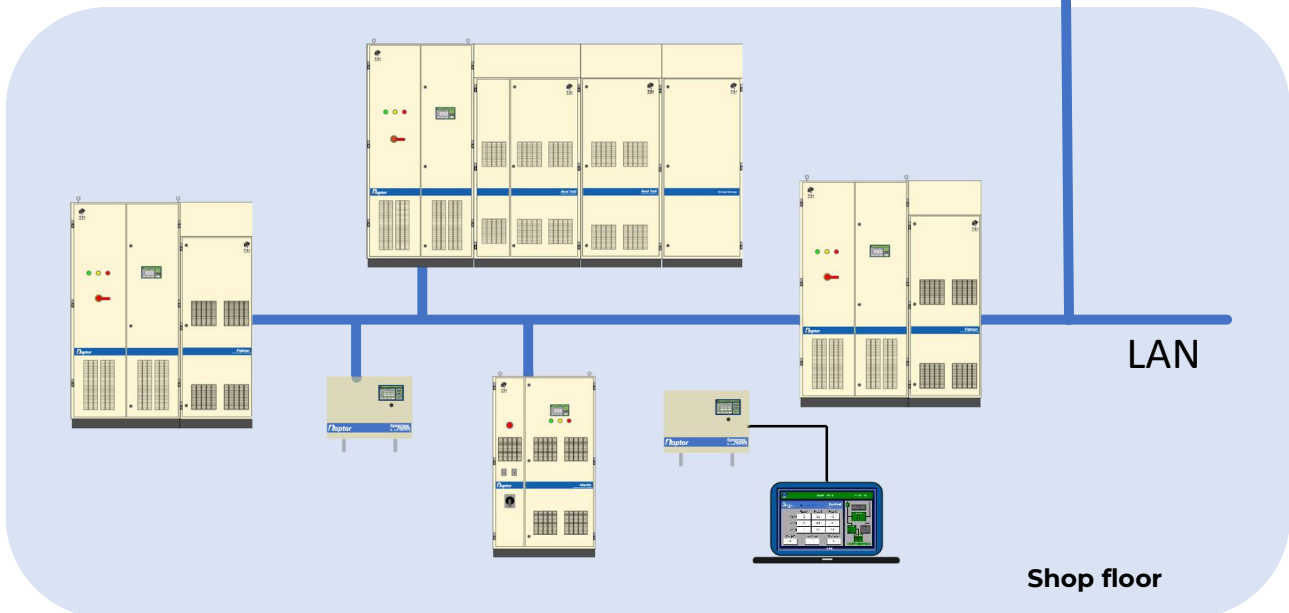
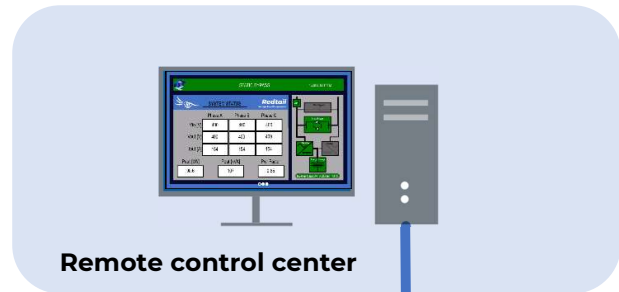
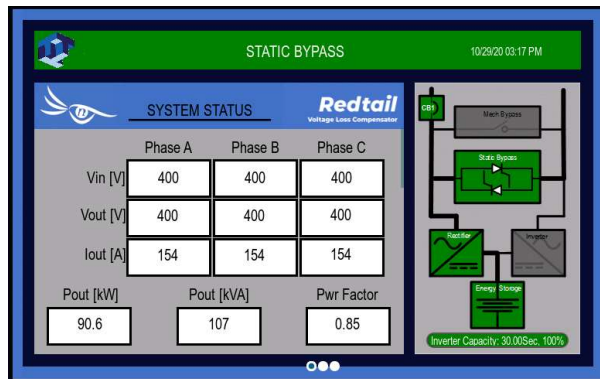
# VLC System Configurations

Rated kVA	Runtime	Maintenance bypass	System layout	Total Dimension (W x D x H)
125	2.5 sec	Yes	E A D	2143 x 797 x 2000 mm (84.4" x 31.4" x 78.7")
125	5 sec	Yes	E A D	2143 x 797 x 2000 mm (84.4" x 31.4" x 78.7")
125	2.5 sec	No	A D	1762 x 797 x 2000 mm (69.4" x 31.4" x 78.7")
125	5 sec	No	A D	1762 x 797 x 2000 mm (69.4" x 31.4" x 78.7")
250	2.5 sec	Yes	F A B D	3286 x 797 x 2000 mm (129.4" x 31.4" x 78.7")
250	5 sec	Yes	F A B D	3286 x 797 x 2000 mm (129.4" x 31.4" x 78.7")
250	2.5 sec	No	A B D	2524 x 797 x 2000 mm (99.4" x 31.4" x 78.7")
250	5 sec	No	A B D	2524 x 797 x 2000 mm (99.4" x 31.4" x 78.7")
375	2.5 sec	Yes	F A C D	3524 x 797 x 2000 mm (138.8" x 31.4" x 78.7")
375	5 sec	Yes	F A C D D	4286 x 797 x 2000 mm (168.8" x 31.4" x 78.7")
375	2.5 sec	No	A C D	2762 x 797 x 2000 mm (108.8" x 31.4" x 78.7")
375	5 sec	No	A C D D	3524 x 797 x 2000 mm (138.8" x 31.4" x 78.7")
500	2.5 sec	Yes	F A B B D	4048 x 797 x 2000 mm (159.4" x 31.4" x 78.7")
500	5 sec	Yes	F A B B D D	4810 x 797 x 2000 mm (189.4" x 31.4" x 78.7")
500	2.5 sec	No	A B B D	3286 x 797 x 2000 mm (129.4" x 31.4" x 78.7")
500	5 sec	No	A B B D D	4048 x 797 x 2000 mm (159.4" x 31.4" x 78.7")

# Raptor Eye Monitoring Software



- All Raptor products come equipped with **Raptor Eye** monitoring software.
- **Raptor Eye (Local version)** is accessed via the built-in touch screen located on the product.
- **Raptor Eye (Remote version)** can be installed on remote computers for monitoring via direct or Local Area Network connection.
- Various system status values including but not limited to voltage, current, frequency, power, and DC bus voltage can be monitored.
- Voltage sags & swells, as well as fault & alarm event logs are available for viewing and downloading using the software.
- User-adjustable parameters, including nominal voltage, sag/swell trigger set points, sensitivities, and others. (**Raptor Eye (Local version)** only)



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