

Uninterruptible Power Supplies | 3 Phase

Clean, reliable and energy efficient power

SG Series

The high efficiency SG series provides fast step/transient load response while eliminating single points of failure.

Application
Enterprise class data networks,
large data centers, healthcare
equipment



Rating	Output	Cert.
10 - 750 kVA	480 Vac	UL
60 - 600 kVA	380/400/415 /Vac	CE

Sitepro

The SitePro model is a robust, double conversion UPS that provides true on-line operation and galvanic isolation.

Application
Manufacturing & process control
healthcare equipment, data centers



Rating	Output	Cert.
10 - 40 kVA	380/400/415 Vac	CE

LP33 Series

The LP33 series is a transformer-less design reducing install footprint and installation time.

Application
Large data networks, telecom equipment



Rating	Output	Cert.
10 - 100 kVA	208 Vac	UL
10 - 120 kVA	380/400/415 Vac	CE

Transformer based
UPS

Transformer less UPS

UPS Connectivity and Monitoring

Connectivity

SNMP Web Adapter



- SNMP Adapter
- Built in HTTP server
- MODBUS TCP
- UPS info on network

MODBUS RTU interface



- RS 232 or RS485 output
- 1-Ph and 3-Ph GE UPS
- UPS info on network

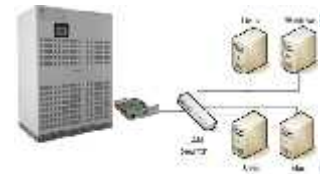
Data Protection

UPSMAN



- Data Protection Software
- Supports RS232 , USB & SNMP
- Free license

RCCMD



- Data Protection Software
- Native solution for more than 35 OS
- Need license

Monitoring

IRIS Web



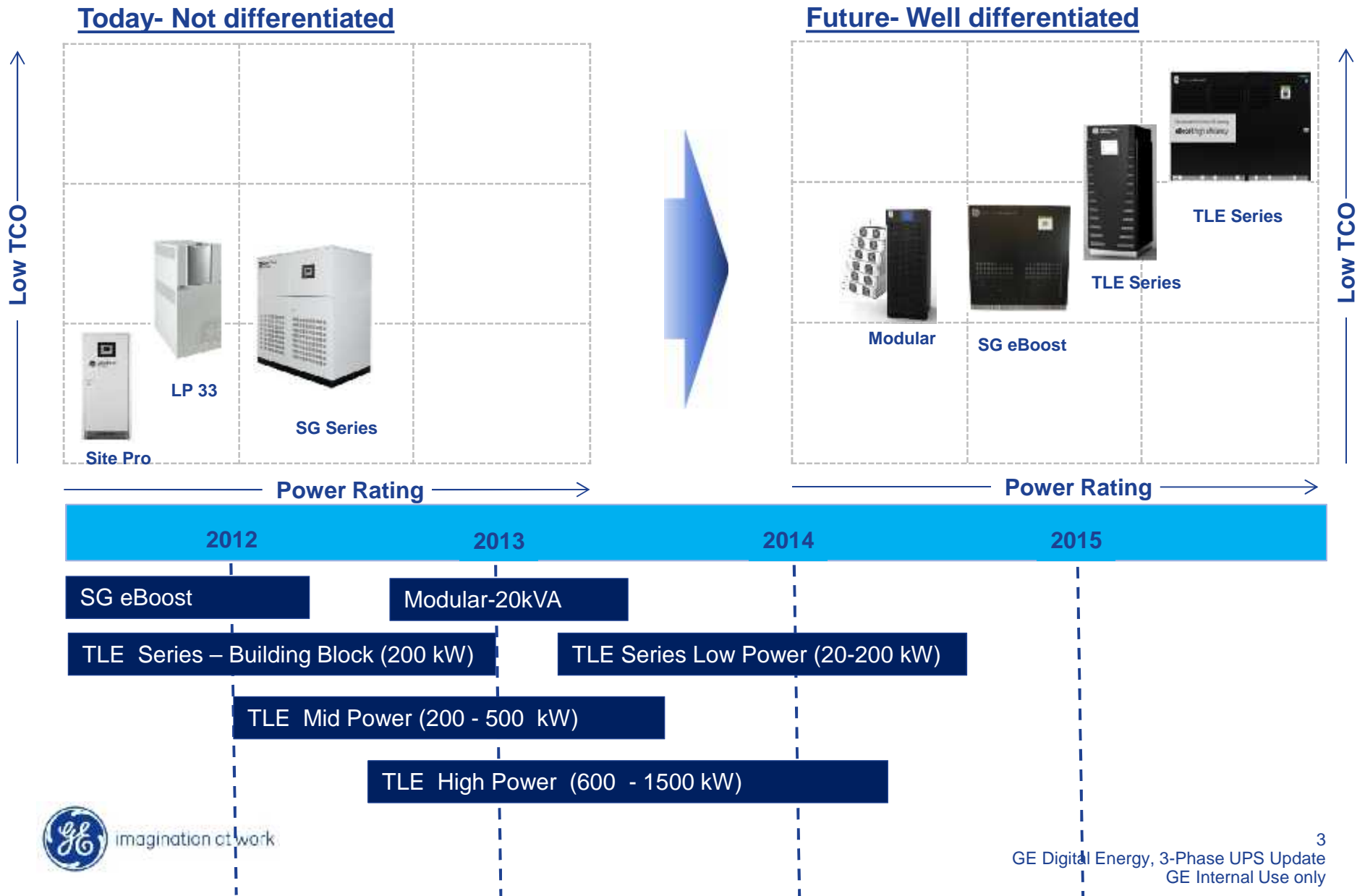
- UPS alerts via Email and SMS
- Connected to central server
- Multiple UPS monitored

Battery Monitoring



- Voltage & Impedance based
- Alarm and activity log
- Report generation
- Preventive monitoring

UPS Product Roadmap – Key



UPS NPI – 2012

Program Description	Launch Date
SG Series 160-500 kVA S3 + eBoost	Q2 2012
New Remote monitoring	Q2 2012
New SNMP card	Q4 2012
TLE series 160-400 kW	Q4 2012
LP 33 10-20 kW S6 CE	Q4 2012



SG Series S3



TLE Series



iUPSGuard



New SNMP Card

SG Series eBoost

SG Series with eBoost™



SG Series UPS 160-500 kVA
High efficiency UPS

e = high efficiency up to 99%
Boost = fast transfer to inverter < 2ms

CE Marked, 3x380/400/415V In & Out, 50/60Hz

SG Series eBoost

Leading the industry through innovation

Our ecomagination certified SG Series UPS with eBoost™ technology delivers best in class efficiency up to 99%.

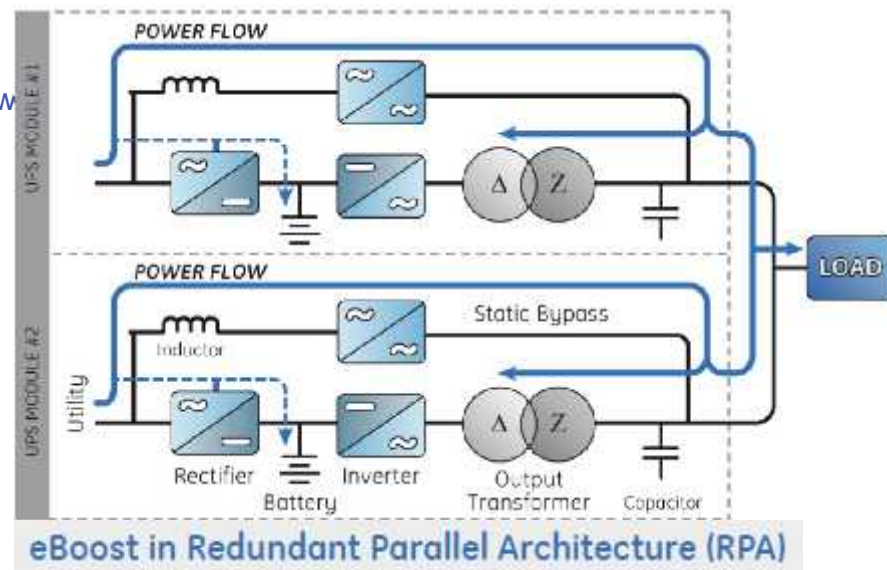
eBoost™

Energy consumption is a critical issue for IT organizations as their energy demands continue to grow. Their goal is to reduce costs and keep the datacenter running. This is now possible—without sacrificing the UPS reliability—with GE's eBoost technology.

Features & benefit

- Up to 99% UPS efficiency
- System energy cost saving
- Compliant to ITI(CBEMA) curve during endervoltage events
- Magnetizing the output transformer ensures a <2ms transfer time
- User-programmable scheduling

- > e = high efficiency (up to 99%)
- > Boost = fast transfer to inverter < 2ms



ecomagination™

UPS Efficiency Improvement

Improved Double conversion Efficiency

1.5 – 2.0% Improvement in VFI efficiency (Series 3)

EFFICIENCY at 50% load		
Power	SG S2	SG S3
160KVA	92.1%	94.0%
200KVA	92.9%	94.5%
250KVA	92.7%	94.0%
300KVA	93.2%	94.1%
400 kVA	93.6%	94.2%
500 kVA	93.5%	94.2%

EFFICIENCY at 75% load		
Power	SG S2	SG S3
160KVA	92.1%	93.8%
200KVA	92.8%	94.2%
250KVA	92.4%	93.7%
300KVA	92.9%	93.9%
400 kVA	93.4%	93.8%
500 kVA	93.3%	93.7%

EFFICIENCY at 100% load		
Power	SG S2	SG S3
160KVA	91.8%	93.4%
200KVA	92.2%	93.7%
250KVA	92.0%	93.2%
300KVA	92.3%	93.4%
400 kVA	92.7%	93.3%
500 kVA	92.5%	93.2%

Compact design

Reduced footprint

- ✓ Compact design saving space in installation
 - Reduction in 160-300 kVA foot print
 - 400-500 kVA: 1800 x 950 x 1900 mm
 - Optional Cabinet: 570x 950 x 1900 mm
- ✓ Easier to handle

FOOTPRINT (WxDxH)		
Power	SG S2	SG S3
160KVA	1350 x 850 x1900	900 x 850 x1900
200KVA	1350 x 850 x1900	1300 x 850 x1900
250KVA	1500 x 850 x1900	1300 x 850 x1900
300KVA	1500 x 850 x1900	1300 x 850 x1900



Product update summary

	SG Series 160-500 kVA S3	Comments
VFI efficiency	Improved by 1.5-2 % double conversion efficiency	Comparable to Tx less
eBoost	eBoost technology to provide efficiency up to 99%	
Foot print	Improved for SG 160-300 kVA and same for 400-500 kVA	Better then Tx less
New flex board	New control board provides black box capability	
Look & feel	Improved look & feel	(Black color)
K3 (contactor)	Removed K3 from SG 160-300kVA	Competitors units & SG 400-500 do not have K3
Bypass overload	150% for 1 minute & 45 times In for 10 ms	Inline with competitors specification
ISM compatibility	Not supported in Series 3	

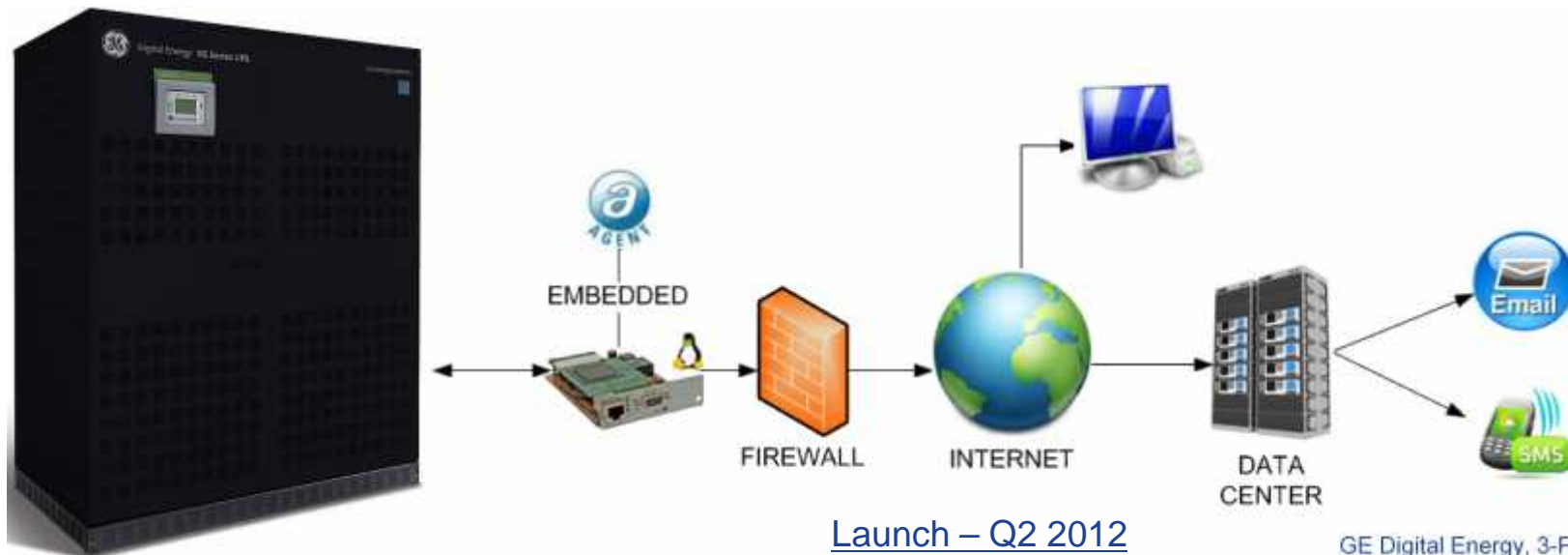
Remote monitoring solution

Improved & secure RM&D solution - iUPSGuard

- Cost effective solution for installed base monitoring
- Flexible & Scalable solution
 - Improving connectivity management
 - Installed base operating data base
- Reduced travel events
- Improve customer visibility
- Improved diagnostic capabilities
 - Parameter and status download



- Improved response time
 - 24 x7 monitoring & alarm notification of UPS
- Improved pre dispatch diagnostic & first time fix
- Regular status reports
- Reduced communication cost
- Highly secure communication



TLE Series – Creating Value

High efficiency up to 96.5 % transformer less platform design



- Highest double conversion efficiency 96.5%
- eBoost technology provides efficiency up to 99%
- Substantial reducing total cost of Ownership
 - Reducing OPEX by 70% (eBoost)
- Unity power factor
- Reduced foot print (high kW/m²)
- New user interface
- High power extension
- Improved diagnostic capabilities
 - Black box capability



CE Product lines	GE	Eaton	Schneider	Emerson	Emerson	Socomec
Model	TLE Series	PW 9395	Galaxy 7000	Trinergy	80- NET	Greenpower
UPS Topology	Tx less	Tx less	Tx less	Tx less	Tx less	Tx less
Efficiency – Double conversion	● 96.5%	● 94%	● 94%	● 94.5-95%	● 94.5-95%	● 95.5-96%
Efficiency eBoost (multi) mode	● 99%	● 99%	● NA	● 99%	● NA	● NA
Foot print (kW/m ²)	●	●	●	●	●	●
Input performance	●	●	●	●	●	●
Output performance	●	●	●	●	●	●
Product range (kVA, kW)	● 1200	● 1100	● 500	● 1200	● 500	● 400



Connectivity Products

SNMP Card update

- Upgrade existing SNMP card for 1-phase and 3-phase product line
- Include ModBus over RS232 & RS 485 through SNMP card
- Use serial connection (front DB9) for Modbus RTU (RS-232)



Part.no	Description	Changes
1024747	1-ph SNMP/Web plug-in adapter	Replaces (part.no 1019070)
1024748	3-ph SNMP/Web plug-in adapter	Replaces (part.no 1018959)
1024921	3-ph SNMP/Web plug-in adapter W/MODBUS RS485	New product
1024746	SP SNMP/Web plug-in adapter	Replaces (part.no 23954)
24864	Modbus License TCP / RTU-232 / RTU485 (*)	Modified part.no description

LP 33 10-20 KW S6

High Performance

- ✓ Improved efficiency up to 92.5%
- ✓ Current THDi : <8%
- ✓ Power Factor : >0.98
- ✓ Unity power factor output
- ✓ Excellent output performance
- ✓ Compact design saving space in installation
-10-20 kVA:500 x 780 x 1320 mm
- ✓ Can be paralleled with S5 units
- ✓ THDv at non linear load :<3%
- ✓ THDv at linear load :<2%
- ✓ EMC Class A
- ✓ back feed protection K6 standard



Uninterruptible Power Supplies | 3

Clean, reliable and energy efficient power

SG Series

The high efficiency SG series provides fast step/transient load response while eliminating single points of failure.

Application

Enterprise class data networks, large data centers, healthcare equipment



Rating	Output	Cert.
10 - 750 kVA	480 Vac	UL
60 - 600 kVA	380/400/415 /Vac	CE

Sitepro

The SitePro model is a robust, double conversion UPS that provides true on-line operation and galvanic isolation.

Application

Manufacturing & process control healthcare equipment, data centers



Rating	Output	Cert.
10 - 40 kVA	380/400/415 Vac	CE

LP33 Series

The LP33 series is a transformer-less design reducing install footprint and installation time.

Application

Large data networks, telecom equipment



Rating	Output	Cert.
10 - 100 kVA	208 Vac	UL
10 - 120 kVA	380/400/415 Vac	CE

TLE Series

TLE series is a transformer-less design with best in class efficiency reducing operating cost, install footprint and installation time.

Application

Data centers, telecom equipment



Rating	Output	Cert.
160 - 400 kW	380/400/415 Vac	CE

Transformer based UPS

Transformer less UPS



imagination at work

UPS Connectivity and Monitoring

Connectivity

SNMP Web Adapter



- SNMP Adapter
- Built in HTTP server
- MODBUS TCP
- UPS info on network

MODBUS RTU interface



- RS 232 or RS485 output
- 1-Ph and 3-Ph GE UPS
- UPS info on network

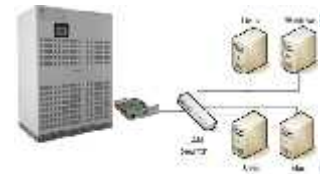
Data Protection

UPSMAN



- Data Protection Software
- Supports RS232, USB & SNMP
- Free license

RCCMD



- Data Protection Software
- Native solution for more than 35 OS
- Need license

Monitoring

iUPSGuard



- UPS alerts via Email and SMS
- Connected to central server
- Multiple UPS monitored

Battery Monitoring



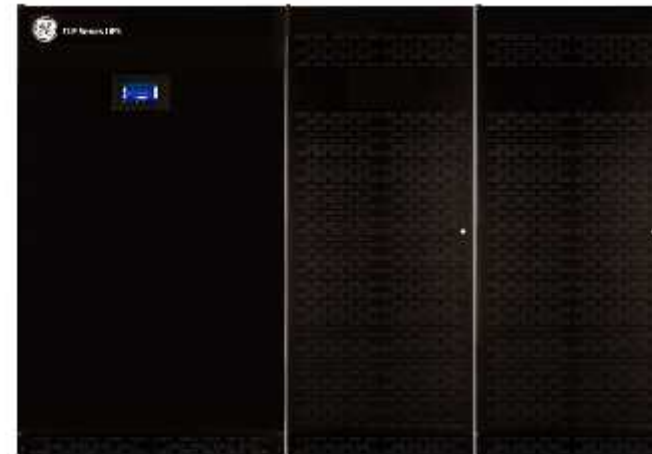
- Voltage & Impedance based
- Alarm and activity log
- Report generation
- Preventive monitoring

UPS NPI –2013

Program Description	Launch Date
Modular UPS (20-480kVA)	Q1 2013
TLE series 250-500 kW UL	Q3 2013
TLE series 600-800 kW CE	Q4 2013
TLE series 750-1000 kW UL	Q4 2013



Modular – 20kVA



TLE 600-800 KW CE

Modular UPS

Performance

- **High Efficiency UPS** - Double conversion efficiency up to 94%
- **Input performance** – Input THDi 3-5% and Input power factor 0.99
- **Output performance** – 0.9 power factor @ 25 C and 0.8 pf @ 40 C
- **Overload capability** - 125%: 10 minutes; 150%: 1 minute

Product Configuration (20 kVA module)

20 to 480 kVA (4 units x 120 kVA in parallel)

- **Compact Foot print**

Features & Accessories

- **Battery Configuration flexibility** – 38 – 42 blocks,
- **Accessories** – Provide matching accessories like battery cabinets



Launch – Q1 2013

TLE Series CE UPS

600-1200 kW UPS

Competitive Landscape

- **Modular design & construction**
 - Improved lead time
 - Reduced MTTR
- **Reducing total cost of Ownership**
 - High efficiency >96% VFI, 99% eBoost
 - Reduced OPEX by 35% (VFI) and 70% (eBoost)
 - Lower CAPEX with largest UPS module
 - Smallest foot print (high power density)
- **Improved diagnostic capabilities**
 - Black box capability



Typical Savings for Data Center

3 MW load (System + System Configuration)
 \$.10/kW-hr power cost and 10 year life cycle
 \$105k annual energy savings

\$1MM energy savings over life cycle NPV

11% more power (kW) from 3000 amp bus

CE Product lines	GE	Eaton	Schneider	Emerson	Emerson	Socomec
Model	TL Series	PW 9395	Galaxy 7000	Trinergy	80- NET	Greenpower
UPS Topology	Tx less – 3L	Tx less – 2L	Tx less – 2L	Tx less – 2L	Tx less – 2L	Tx less – 3L
Efficiency – Double conversion	● 96.5%	● 94.5%	● 94%	● 94.5%	● 94.5%	● 95.5%
Efficiency eBoost (multi) mode	● 99%	● 99%	● NA	● 99%	● NA	● NA
Foot print (kW/m ²)	●	●	●	●	●	●
Input performance	●	●	●	●	●	●
Output performance	●	●	●	●	●	●
Product range (kVA, kW)	● 1200	● 1100	● 500	● 1200	● 500	● 400



TLE Series CE UPS

600-1200 kW UPS

I/O Section

Power Section
400 kW

Power Section
400 kW



TLE Series UL UPS

High efficiency 96.5 % transformer less platform design

Creating Value & Differentiation

- Reducing total cost of Ownership
 - Reducing OPEX by 35% (VFI)
 - Reducing OPEX by 70% (eBoost)
- Reduced foot print (high kW/m²)
- Delivering more power (unity pf)
- Improved diagnostic capabilities & serviceability



Typical Savings for Data Center

3 MW load (System + System Configuration)
 \$.10/kW-hr power cost and 10 year life cycle
 \$105k annual energy savings

\$1MM energy savings over life cycle NPV

11% more power (kW) from 3000 amp bus

UL Product lines	GE	Eaton	Schneider	Emerson	Mitsubishi	GE
Model	TLE Series	PW 9395	EPS 8000	NxL	9900	SG Series
UPS Topology	Tx less	Tx less	Tx based	Tx based	Tx less	Tx based
Efficiency – Double conversion	96.5%	94%	92-94%*	92-93%	96%	94%
Efficiency eBoost (multi) mode	99%	99%	NA	NA	NA	99%
Foot print (kW/m ²)						
Input performance (THDi, PF)						
Output performance (THDv, PF)						
Product range (kVA, kW)	1500	1100	1100	1100	750	750



imagination at work

Uninterruptible Power Supplies | 3

Clean, reliable and energy efficient power

SG Series

The high efficiency SG series provides fast step/transient load response while eliminating single points of failure.

Application
Enterprise class data networks, large data centers, healthcare equipment



Rating	Output	Cert.
10 - 750 kVA	480 Vac	UL
60 - 600 kVA	380/400/415 /Vac	CE

Sitepro

The SitePro model is a robust, double conversion UPS that provides true on-line operation and galvanic isolation.

Application
Manufacturing & process control
healthcare equipment, data centers

Rating	Output	Cert.
10 - 40 kVA	380/400/415 Vac	CE



imagination at work

LP33 Series

The LP33 series is a transformer-less design reducing install footprint and installation time.

Application
Large data networks, telecom equipment

Rating	Output	Cert.
10 - 100 kVA	208 Vac	UL
10 - 120 kVA	380/400/415 Vac	CE



TLE Series

TLE series is a transformer-less design with best in class efficiency reducing operating cost, install footprint and installation time.

Application
Data centers, telecom equipment

Rating	Output	Cert.
160 - 1200 kW	380/400/415 Vac	CE
250 -1000 kW	480 Vac	UL



Modular Series

Is modular UPS design with high efficiency reducing operating cost, install footprint and installation time.

Rating	Output	Cert.
20 - 480 kVA	380/400/415 Vac	CE



21
ate
CE internal use only

Transformer based
UPS

Transformer less UPS

Containerized solutions

ISO40, 2x100kVA

Includes:
Fire fighting system
Biometric access
Video surveillance
Redundant cooling
Self supporting structure
Plug and play



Containerized solutions

Shelter, 1x100kVA+1x200kVA



Features:

Smoke and hydrogen detection

Redundant cooling

Self supporting structure

Plug and play

