

# LOW VOLTAGE MEDICAL POWER SUPPLIES

THE POWER SOLUTIONS OF CHOICE FOR MISSION-CRITICAL APPLICATIONS



PRECISION | POWER | PERFORMANCE



# Low Voltage Medical Power Supplies

Power Solutions of Choice for Medical Applications

## Your Global Partner for Medical Power Supplies

Advanced Energy's low voltage power supplies can deliver 25% longer lifetimes than competitor products. Our fanless and fan-cooled products provide efficiencies of up to 94%. Our low voltage products carry full international safety certifications that meet IEC60601-1 (third edition) and IEC60601-1-2 (fourth edition EMC) requirements.

This ensures all our low voltage products meet current and future safety regulations, simplifying system approval. Our five-year warranty helps ensure quality, reliability, and reduces total cost of ownership. The CoolX range of power supplies brings user flexibility to a completely new level allowing system designers to monitor power supply performance using either analog or digital communications (PMBus<sup>™</sup>). With a wide range of single and multiple output power supplies, AE can deliver your exact volts and amps requirements.

#### Serving Your Markets, Delivering Your Medical Solutions

Whatever your application, our dedicated teams of Sales and Applications Engineers are ready to assist you in defining and implementing the optimal power solution to meet your requirements. Our power supplies are user and field-configurable.

#### Applications

- Medical lasers
- X-ray machines
- CT-scanners
- MRI scanners
- Dialysis equipment
- Ablation

- Skin treatment and regeneration
- Cryotherapy equipment
- Cancer treatment equipment
- Clinical diagnostic equipment
- Radiological equipment
- RND/DNA analyzers & sequencers

#### LOW VOLTAGE PRODUCTS

## Precision. Power. Performance.

Advanced Energy (AE) brings over 30 years of experience of leading edge power supply development and applications support to market with our revolutionary CoolX, UltiMod, Xsolo, and Xgen series of products. Our products deliver unrivaled levels of efficiency, flexibility, performance, and reliability, all backed by a market-leading five-year warranty. Together with our network of qualified and experienced manufacturer representatives and distributors, we have established Advanced Energy as the brand of choice for customers seeking the highest performing, most reliable, and most cost-efficient power solutions.

#### Expertise Enhanced System Innovation

Through close customer collaboration, application insight, and superior power quality, AE enables you to push the boundaries of innovation and stay ahead of evolving market needs.

#### **Compelling Value**

AE low voltage product flexibility, ease of integration, and world-class support provide significant value, improving system manufacturing and performance.

#### **Optimized System Performance**

Reliable, accurate low voltage power delivery elevates the performance of your entire system. AE pairs industry-leading technology with unmatched application expertise to implement solutions optimized for the exacting requirements of a variety of industries, including medical, industrial, MIL-COTS, communications, harsh industrial, and acoustic sensitive.

#### **Medical Standards**

Medical power supply design and manufacturing demands the highest safety and quality standards including UL/EN60601-1 3rd edition, 2 MOPP and 4kVAC Isolation. The medically certified solutions in the CoolX, UltiMod, Xsolo, and Xgen Platforms are the solutions of choice for a variety of applications.

# Table of Contents

6	CoolX	1800

- 8 CoolX1000
- 10 CoolX600
- 12 UltiMod
- 14 Xsolo
- 16 Xgen XM
- 18 Xgen XV



#### COOLX1800 AT A GLANCE

#### Power

1800 W

#### Slots

6

#### Cooling

Variable fan speed control

#### **Parameters**

267 mm x 127 mm x 41 mm (10.5 in x 5 in x 1U)

#### Certifications

Medical (CX18M)

- IEC60601-1 3rd edition,
  IEC60601-1-2 4th edition (EMC)
- 2 MOPP
- Dual fused
- Suitable for type B-applications

# CoolX1800

#### Efficient and Reliable 1800 W Modular Power Supplies

Advanced Energy's CoolX®1800 series is an intelligent modular power supply. The CoolX1800 delivers an incredible 1800 W in a compact package with PMBus™ digital communications and control and reliability in addition to the most comprehensive feature set and specifications available.

#### **PRODUCT HIGHLIGHTS**

Modular Power Supply

- Up to 1800 W
- Up to 12 outputs
- All outputs isolated (1850 VAC)
- Variable fan speed control

#### Reliability

- MTBF > 200,000 hours
- Level 4 input surge protection
- 23.5 W always ON auxiliary power output
- Safety approved to 5000 m altitude
- 93% efficiency
- Five-year warranty

#### **TYPICAL APPLICATIONS**

#### Medical

 Clinical diagnostic equipment, medical lasers, dialysis equipment, radiological imaging, clinical chemistry

#### Flexibility

- Analog and digital management
   PMBus<sup>™</sup> monitoring and control capability
- Field-configurable plug and play power
- Series and parallel outputs higher voltages/currents
- Mounting options base/side and DIN-Rail mounting



#### **COOLX1800**

CoolX CoolMods							
CoolMod	Vnom (V)	Set Point Adjust Range (V)	lmax(A)	Power (W)			
CmA	5	2.5-6.0	30.0	150			
CmB <sup>4</sup>	12	6.0-15.0	23.3	280			
CmC	24	15.0-28.0	12.5	300			
CmD	48	28.0-58.0	6.25	300			
High Power Modules (3 Slot)							
CmE	24	22.8-25.2	37.5	900			
CmF	48	45.6-50.4	18.75	900			
Dual Output Modules (1 Slot)							
CmG <sup>2</sup> V1	24	3.0-30.0	4.0	120			
V2	24	3.0-30.0	4.0	120			
CmH <sup>3</sup> V1	5	3.0-6.0	10.0	60			
V2	24	3.0-30.0	4.0	120			
Wide Trim Modules (1 Slot) <sup>4</sup>							
CmM	5	1.0-6.0	30	150			
CmN	12	1.0-15.0	23.3	280			
CmP	24	1.0-28.0	12.5	300			
CmQ	48	3.0-58.0	6.25	300			

 $^{1}$  Full dynamic specifications may not be met at full load when output voltage is trimmed above 13 V.

 $^2$  For the CmG module the max combined power of both outputs is 200 W.

<sup>3</sup> For the CmH module the max combined power of both outputs is 180 W.

<sup>4</sup> Pending safety approvals on wide-trim modules only.

#### CONFIGURATION



\*Contact Advanced Energy for conformal coating and ruggedized options.





#### COOLX1000 AT A GLANCE

#### **Power**

1000 W

#### Slots

6

#### Cooling

No fan featured, convention cooled

#### **Parameters**

254 mm x 165.1 mm x 39.1 (10 in x 6.5 in x 1U)

#### Certifications

Medical (CX10M)

- IEC60601-1 3rd edition,
  IEC60601-1-2 4th edition (EMC)
- 2 MOPP
- Dual fused
- Suitable for type B-applications

# CoolX1000

#### Fanless, Intelligent 1000 W Modular Power Supplies

Advanced Energy's CoolX®1000 series is the world's only fanless 1000 W modular power supply. Packaged in a compact 254 mm x 165.1 mm x 39.1 (10 in x 6.5 in x 1U) U-channel design, the CoolX1000 provides up to 1000 W without any requirement for fan or base plate cooling, eliminating acoustic noise detrimental to scientific and medical applications, as well as applications sensitive to vibration or where fan cooling is not available. The CoolX1000 also offers increased flexibility by allowing system designers to monitor and control power supply performance — essential for staving off process disruption — using either analog or digital communications (PMBus<sup>™</sup>).

#### **PRODUCT HIGHLIGHTS**

No Fan Featured

- 1000 W with 100% natural convection cooling
- No base plate needed
- No acoustic noise or vibrations

Flexibility

- Analog and digital management
   PMBus<sup>™</sup> monitoring and control capability
- Field-configurable plug and play power
- Series and parallel outputs higher voltages/currents
- Mounting options base/side and DIN-Rail mounting
- 23.5 Watt always ON auxillary power output

#### **TYPICAL APPLICATIONS**

#### Medical

 Clinical diagnostic equipment, medical lasers, dialysis equipment, radiological imaging, clinical chemistry

#### Reliability

- MTBF > 400,000 hours, 25% better than today's leading solutions
- High-input surge protection
  4 KV line to PE for harsh environments
- Reverse energy protection no blocking diodes required
- 24 W standby power
- Safety approved to 5000 m altitude
- 94% efficiency
- Five-year warranty



#### **COOLX1000**

CoolX CoolMods						
CoolMod	Vnom (V)	Set Point Adjust Range (V)	lmax(A)	Power (W)		
CmA	5	2.5-6.0	21.0	105		
CmB <sup>4</sup>	12	6.0-15.0	15.0	180		
CmC	24	15.0-28.0	8.3	200		
CmD	48	28.0-58.0	4.17	200		
High Power Modules (3 Slot)						
CmE	24	22.8-25.2	25.0	600		
CmF	48	45.6-50.4	12.50	600		
Dual Output Modules (1 Slot)						
CmG <sup>2</sup> V1	24	3.0-30.0	3.0	90		
V2	24	3.0-30.0	3.0	90		
CmH <sup>3</sup> V1	5	3.0-6.0	6.0	36		
V2	24	3.0-30.0	3.0	90		
Wide Trim Modules (1 Slot)						
CmM	5	1.0-6.0	21	105		
CmN	12	1.0-15.0	15	180		
CmP	24	1.0-28.0	8.33	200		
CmQ	48	3.0-58.0	4.17	200		

 $^{1}$  Full dynamic specifications may not be met at full load when output voltage is trimmed by above 13 V

 $^2\,\mbox{For the CmG}$  module, the max combined power of both outputs is 120 W

 $^3$  For the CmH module, the max combined power of both outputs is 100 W

#### CONFIGURATION







#### COOLX600 AT A GLANCE

#### Power

600 W

#### Slots

4

#### Cooling

No fan featured, convection-cooled

#### Parameters

215.9 mm x 114.3 mm x 39.1 mm (8.5 in x 4.5 in x 1 U)

#### Certifications

#### Medical (CX06M)

- IEC60601-1 3rd edition,
  IEC60601-1-2 4th edition (EMC)
- 2 MOPP
- Dual fused
- Suitable for type B-applications

# CoolX600

#### Fanless, Natural Convection-Cooled Modular Power Supply

Advanced Energy's CoolX®600 series is the world's first fanless, natural convection-cooled modular power supply. The CoolX600 delivers an incredible 600 W without fan-assisted cooling from a very compact package. The CoolX600 offers system designers best-in-class efficiency and reliability in addition to the most comprehensive feature set and specifications available.

#### **PRODUCT HIGHLIGHTS**

No Fan Featured

- 600 W with 100% natural convection cooling
- No base plate needed
- No acoustic noise or vibrations

#### Flexibility

- Analog and digital management
   PMBus<sup>™</sup> monitoring and control capability
- Field-configurable plug and play power
- Series and parallel outputs higher voltages/currents
- Mounting options base/side and DIN-Rail mounting
- 23.5 Watt always ON auxillary power output

#### **TYPICAL APPLICATIONS**

#### Medical

 Clinical diagnostic equipment, medical lasers, dialysis equipment, radiological imaging, clinical chemistry

#### Reliability

- MTBF > 400,000 hours, 25% better than today's leading solutions
- High input surge protection 4 KV line to PE for harsh environments
- Reverse energy protection no blocking diodes required
- 24 W always ON auxiliary power output
- Safety approved to 5000 m altitude
- >94% efficiency
- Five-year warranty



#### COOLX600

CoolX CoolMods	CoolX CoolMods						
CoolMod	Vnom (V)	Set Point Adjust Range (V)	lmax(A)	Power (W)			
CmA <sup>±</sup>	5	2.5-6.0	21.0	105			
CmB	12	6.0-15.0	15.0	180			
CmC⁺	24	15.0-28.0	8.3	200			
CmD <sup>4</sup>	48	28.0-58.0	4.2	200			
High Power Modules (3 Slot)							
CmE	24	22.8-25.2	25.0	600			
CmF	48	45.6-50.4	12.5	600			
Dual Output Modules (1 Slot)							
CmG <sup>2</sup> V1	24	3.0-30.0	3.0	90			
V2	24	3.0-30.0	3.0	90			
CmH <sup>3</sup> V1	5	3.0-6.0	6.0	36			
V2	24	3.0-30.0	3.0	90			
Wide Trim Modules (1 Slot)							
CmM	5	1.0-6.0	21	105			
CmN	12	1.0-15.0	15	180			
CmP	24	1.0-28.0	8.33	200			
CmQ	48	3.0-58.0	4.17	200			

 $^{1}$  Full dynamic specifications may not be met at full load when output voltage is trimmed above 13 V.

 $^2$  For the CmG module the max combined power of both outputs is 120 W.

<sup>3</sup> For the CmH module the max combined power of both outputs is 100 W.

#### CONFIGURATION









#### **ULTIMOD AT A GLANCE**

#### **Power**

UX4	600 W
UX6	1200 W
Slots	
UX4	4
UX6	6

#### Certifications

#### Medical

- UL/EN60601-1 3rd edition
- UL/EN60601-1-2 4th edition (EMC)

## UltiMod

#### Unique in Flexibility, Unrivalled in Performance, Ultra-Cost Competitive

Advanced Energy's UltiMod series brings modular power supplies to a new paradigm, combining technical excellence with logistics simplicity to exceed the most demanding requirements from any industry. The UltiMod range of power supplies offers unrivalled performance and demonstrates our global leadership in product reliability, efficiency and cost competitiveness. The UX4 delivers up to 600 W and can be populated with up to four powerMods, and the UX6 delivers up to 1200 W and can be populated with up to 6 powerMods.

#### **PRODUCT HIGHLIGHTS**

- Highest efficiency up to 91%
- User and field configurable
- Standard medical features
  - Leakage current < 300 μA (< 150 μA optional)</li>
  - 2 MOPP
  - 4 KV Isolation
- -40°C startup temperature
- Extra ruggedized optional
  Vibration: MIL-STD-810G
- No minimum load

#### **TYPICAL APPLICATIONS**

#### Medical

 Clinical diagnostic and dialysis equipment, medical lasers, radiological imaging, clinical chemistry

- Extra-low profile < 1U height</p>
- All outputs fully floating
- Series/parallel of multiple outputs
- 5 V isolated standby voltage
- Active PFC (Power Factor Correction)
- Product options: Conformal coating, low leakage current, connector, cabling and mounting options, and reverse fans additional ruggedization



#### ULTIMOD

powerMods							
Model	Vnom (V)	Set Point Adjust Range	Dynamic Vtrim Range (v)	lmax (A)	Power (W)	Remote Sense	Power Good
XgA	12.0	10.8-15.6	—	12.5	150	_	—
XgB	24.0	19.2-26.4	—	8.3	200	—	—
XgC	36.0	28.8-39.6	—	5.6	200	_	—
XgD	48.0	38.5-50.4	—	4.2	200	—	—
XgE/Xg7	24.0	5.0-28.0	—	5.0	120	_	—
XgF/Xg8	24.0	5.0-28.0	—	3.0	72	—	Yes
	24.0	5.0-28.0	—	3.0	72	—	Yes
XgG	2.5	1.5-3.6	1.15-3.6	40.0	100	Yes	Yes
XgH	5.0	3.2-6.0	1.5-6.0	36.0	180	Yes	Yes
XgJ	12.0	6.0-15.0	4.0-15.0	18.3	220	Yes	Yes
XgK	24.0	12.0-30.0	8.0-30.0	9.2	220	Yes	Yes
XgL	48.0	28.0-58.0	8.0-58.0	5.0	240	Yes	Yes
Xg1	2.5	1.5-3.6	1.15-3.6	50.0	125	Yes	Yes
Xg2	5.0	3.2-6.0	1.5-6.0	40.0	200	Yes	Yes
Xg3	12.0	6.0-15.0	4.0-15.0	20.0	240	Yes	Yes
Xg4	24.0	12.0-30.0	8.0-30.0	10.0	240	Yes	Yes
Xg5	48.0	28.0-58.0	8.0-58.0	6.0	288	Yes	Yes
XgM	5.0	3.2-6.0	1.0-6.0	40.0	200	Yes	Yes
XgN	12.0	6.0-15.0	1.0-15.0	20.0	240	Yes	Yes
XgP	24.0	12.0-30.0	1.0-30.0°	10.0	240	Yes	Yes
XgQ	48.0	24.0-58.0	1.0-58.0°	6.0	288	Yes	Yes
XgR	24.0	12.0-30.0	8.0-30.0	10.0	240	_	Yes
XgT	48.0	28.0-58.0	8.0-58.0	6.0	288	_	Yes

 $^1\,\text{SEMI}$  F47 compliant at input voltages > 160 VAC. Consult Advanced Energy for details

 $^2\mbox{Visit}$  www.advanced energy.com for configuration, ordering and contact information.

<sup>3</sup> XgP & XgQ- output ripple and noise are load dependent. Contact Advanced Energy or sales.support@aei.com for details.

#### CONFIGURATION







#### **XSOLO AT A GLANCE**

#### **Power**

XS1000 1008 W

#### **Output Voltage**

24, 36, 48

#### Certifications

- IEC60601-1 2nd and 3rd edition
- IEC60601-1-2 4th edition (EMC)
- 2 MOPP
- SEMI F47
- MIL-STD-810G

# Xsolo

# Ultra-compact, high-efficiency 500 W and 1000 W single output power supplies

Advanced Energy's Xsolo series delivers an incredible convection-cooled 504 W in an open-frame U-channel form factor and up to 1008 W in an enclosed, fan-cooled chassis. This high-efficiency, high-reliability product is available in two compact package types.

#### **PRODUCT HIGHLIGHTS**

- Single output voltages are 24 V, 36 V, or 48 V with wide adjustment ranges and user-defined set-points
- Ultra high efficiency, > 92%
- Low profile: 1U height (40 mm)
- Convection-cooled 500 W
- Fan-cooled 1000 W (variable speed fan)
- 12 V/300 mA bias standby voltage provided
- Remote ON/OFF signal
- Power Good signal

#### **TYPICAL APPLICATIONS**

- Industrial
- Test and measurement
- Acoustically sensitive laboratory and medical environments

- Suitable for type B-rated applications
- Optional I<sup>2</sup>C PMBus™ communications
- Optional OR-ing function
- Five-year warranty
- Adjustable output voltage control
- 5000 m altitude for EN60950 applications
- All models feature active power factor correction as standard
- Product options: Conformal coating, low leakage current and ruggedized
- Hi-Rel MIL-COTS
- Communication



#### XSOLO

Model	Power (W)	Output Voltage	Output Current (A)	Medical Approval UL/EN60601-1, 3rd Edition	Industrial Approval UL/EN60950, 2rd Edition
XS500-24	504	24	21.0	Yes	Yes
XS1000-24	1008	24	42.0	Yes	Yes
XS500-36	504	36	14.0	Yes	Yes
XS1000-36	1008	36	28.0	Yes	Yes
XS500-48	504	48	10.5	Yes	Yes
XS1000-48	1008	48	21.0	Yes	Yes

Model	Vnom (W)	Description	Set Point Adjust Range (V)	Dynamic Vtrim Range (V)	lmax (A)	Remote Sense	Power Good
XS500-24	24	Convection-cooled U-channel	19-28	14-28	21.0	Yes	Yes
XS1000-24	24	Enclosed fan-cooled	19-28	14-28	42.0	Yes	Yes
XS500-36	36	Convection-cooled U-channel	26-40	20-40	14.0	Yes	Yes
XS1000-36	36	Enclosed fan-cooled	26-40	20-40	28.0	Yes	Yes
XS500-48	48	Convection-cooled U-channel	36-58	39-58	10.5	Yes	Yes
XS1000-48	48	Enclosed fan-cooled	36-58	29-58	21.0	Yes	Yes



Example 1: XS1000-24N-000 = Xsolo 1000 W, 24 V, output with no options

Example 2: XS1000-24N-003 = Xsolo 1000 W, 24 V, output with PC/PMBus and OR-ing function





#### XGEN XM AT A GLANCE

#### **Power**

4		
Slots		
XMD	750 W	
ХМС	600 W	
ХМВ	400 W	
XMA	200 W	

#### 4

#### Certifications

- Medical
- UL/EN60601-1
- UL/EN60601-1 3rd edition

# Xgen XM

#### Medical Power Supply. User Configurable 1U Size Requirements.

The XM family of medically-approved power supplies provides up to 750 W in a slimline 1U package. The XM family carries the latest safety agency approvals to EN60601-1 and UL60601-1 3rd Edition, meeting the stringent creepage and clearance requirements in this compact package. Providing up to eight isolated outputs, the XM family is the most flexible power supply in its class and brings affordable configurable power to the 200 to 750 W medical market. The XM family consists of four powerPac models in 200 W, 400 W, 600 W, and 750 W power levels. Each powerPac model may be populated with up to four powerMods selected from the table of powerMods shown below.

#### **PRODUCT HIGHLIGHTS**

- EN60601-1 3rd edition approved
- Less than 300 µA leakage current
- 150 μA option available
- 4000 VAC isolation
- Ultra high efficiency, up to 89%
- Extra low profile: 1U height (40 mm)
- Plug & Play Power allows fast custom configuration
- Individual output control signals
- All outputs fully floating

#### **TYPICAL APPLICATIONS**

- Radiological imaging
- Clinical diagnostics

- Series / Parallel of multiple outputs
- Few electrolytic capacitors (all long life)
- 5 V bias standby voltage provided
- Standard Xgen product options include: conformal coating, low acoustic noise, low leakage current, extra ruggedisation, connector, cabling and mounting options, thermal signals and reverse fans.
- Medical lasers
- Clinical chemistry

#### **XGEN XM**

powerMods							
Model	Vnom(V)	Set Point Adjust Range	Dynamic Vtrim Range (v)	lmax (A)	Power (W)	Remote Sense	Power Good
XgA	12.5	10.8-15.6	—	12.5	150	—	—
XgB	24	19.2-26.4	—	8.3	200	—	—
XgC	36	28.8-39.6	—	5.6	200	—	—
XgD	48	38.4-50.4	—	4.2	200	—	—
XgE/ Xg7	24	5.0-28.0	—	5	120	—	Yes
XgF/Xg8 v1	24	5.0-28.0	—	3	72	—	Yes
XgF/Xg8 v2	24	5.0-28.0	—	3	72	—	Yes
XgG	2.5	1.5-3.6	1.15-3.6	40	100	Yes	Yes
XgH	5	3.2-6.0	1.5-6.0	36	180	Yes	Yes
XgJ	12	6.0-15.0	4.0-15.0	18.3	220	Yes	Yes
XgK	24	12.0-30.0	8.0-30.0	9.2	220	Yes	Yes
XgL	48	28.0-58.0	8.0-58.0	5	240	Yes	Yes
Xg1	2.5	1.5-3.6	1.15-3.6	50.0	125	Yes	Yes
Xg2	5.0	3.2-6.0	1.5-6.0	40.0	200	Yes	Yes
Xg3	12.0	6.0-15.0	4.0-15.0	20.0	240	Yes	Yes
Xg4	24.0	12.0-30.0	8.0-30.0	10.0	240	Yes	Yes
Xg5	48.0	28.0-58.0	8.0-58.0	6.0	288	Yes	Yes
XgM	5	3.2-6.0	1.0-6.0	40	200	Yes	Yes
XgN	12	6.0-15.0	1.0-15.0	20	240	Yes	Yes
XgP	24	12.0-30.0	1.0-0.0 <sup>3</sup>	10	240	Yes	Yes
XgQ	48	24.0-58.0	1.0-8.0 <sup>3</sup>	6	288	Yes	Yes
XgR	24	12.0-30.0	8.0-30.0	10	240	No	Yes
XgT	48	28.0-58.0	8.0-58.0	6	288	No	Yes

 $^1\,\text{SEMI}$  F47 compliant at input voltages > 160 VAC. Consult Advanced Energy for details

 $^2\mbox{Visit}$  www.advanced energy.com for configuration, ordering and contact information.

<sup>3</sup> XgP & XgQ- output ripple and noise are load dependent. Contact Advanced Energy or sales.support@aei.com for details.

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Liniversal lengt 47,440 Liz	85	_	264	VAC
	Oniversal input 47-440 Hz	120	—	380	VDC
Power Rating	XMA:200W, XMB:400W, XMC:600W, XMD:750W	—	600	_	W
Input Current XMA	85 VAC in 200 W out	—	6	_	А
XMB	85 VAC in 400 W out	—	7.5	_	А
XMC	85 VAC in 400 W out	—	7.5	—	А
XMD	85 VAC in 525 W out	—	11.5	—	А
Inrush Current	230 VAC @ 25°C	—	—	50	А
Undervoltage Lockout	Shutdown	65	_	74	VAC
Fusing XMA	250 V 5 x 20mm	—	F5A HRC	—	_
XMA	250 V 5 x 20mm	_	F6.3A HRC	_	_
XMC, XMD	250 V 5 x 20mm	_	F8A HRC		





#### XGEN XV AT A GLANCE

#### Power

XVA	400 W
XVB	700 W
XVC	1000 W
XVD	1200 W
XVE	1340 W
Slots	

#### 510

6

#### Certifications

#### Medical

- UL/EN60601-1 3rd edition
- UL/EN60601-1-2 4th edition (EMC)

# Xgen XV

#### Medical Power Supply. User Configurable 1U Size Requirements.

The XV family of medically approved power supplies provides up to an incredible 1340W in an extremely compact 1U package. The XV family consists of 5 powerPacs ranging in power levels from 400W to 1450W peak and 6 powerMod DC output modules. Simply select the appropriate powerPac and up to 6 powerMods from the tables below to complete your custom power supply.

#### **PRODUCT HIGHLIGHTS**

- UL/EN60950 2nd edition
- UL/EN60601-1 3rd edition
- UL/EN60601-1-2 4th edition EMC compliant
- Less than 300 µA leakage current
- 150 µA option available
- 4000 VAC isolation
- Ultra high efficiency, up to 90%
- Extra low profile: 1U height (40 mm)
- Plug & Play Power allows fast custom configuration
- Individual output control signals
- All outputs fully floating

#### **TYPICAL APPLICATIONS**

#### Medical

 Clinical diagnostic and dialysis equipment, medical lasers, radiological imaging, clinical chemistry

- Series / Parallel of multiple outputs
- Few electrolytic capacitors (all long life)
- 5 V bias standby voltage provided
- Active PFC (Power Factor Correction)
- Standard Xgen product options include: conformal coating, low acoustic noise, low leakage current, extra ruggedisation, connector, cabling and mounting options, thermal signals and reverse fans.



#### **XGEN XV**

powerMods										
Model	Vnom(V)	Set Point Adjust Range	Dynamic Vtrim Range (v)	lmax (A)	Power (W)	Remote Sense	Power Good			
XgA	12.5	10.8-15.6	_	12.5	150	—	_			
XgB	24	19.2-26.4	_	8.3	200	—	—			
XgC	36	28.8-39.6	—	5.6	200	—	—			
XgD	48	38.4-50.4	—	4.2	200	—	—			
XgE/ Xg7	24	5.0-28.0	—	5	120	—	Yes			
XgF/Xg8 v1	24	5.0-28.0	—	3	72	—	Yes			
XgF/Xg8 v2	24	5.0-28.0	_	3	72	—	Yes			
XgG	2.5	1.5-3.6	1.15-3.6	40	100	Yes	Yes			
XgH	5	3.2-6.0	1.5-6.0	36	180	Yes	Yes			
XgJ	12	6.0-15.0	4.0-15.0	18.3	220	Yes	Yes			
XgK	24	12.0-30.0	8.0-30.0	9.2	220	Yes	Yes			
XgL	48	28.0-58.0	8.0-58.0	5	240	Yes	Yes			
Xg1	2.5	1.5-3.6	1.15-3.6	50.0	125	Yes	Yes			
Xg2	5.0	3.2-6.0	1.5-6.0	40.0	200	Yes	Yes			
Xg3	12.0	6.0-15.0	4.0-15.0	20.0	240	Yes	Yes			
Xg4	24.0	12.0-30.0	8.0-30.0	10.0	240	Yes	Yes			
Xg5	48.0	28.0-58.0	8.0-58.0	6.0	288	Yes	Yes			
XgM	5	3.2-6.0	1.0-6.0	40	200	Yes	Yes			
XgN	12	6.0-15.0	1.0-15.0	20	240	Yes	Yes			
XgP	24	12.0-30.0	1.0-0.0°	10	240	Yes	Yes			
XgQ	48	24.0-58.0	1.0-8.0 <sup>°</sup>	6	288	Yes	Yes			
XgR	24	12.0-30.0	8.0-30.0	10	240	No	Yes			
XgT	48	28.0-58.0	8.0-58.0	6	288	No	Yes			

 $^1\,\text{SEMI}$  F47 compliant at input voltages > 160 VAC. Consult Advanced Energy for details

 $^2\mbox{Visit}$  www.advanced energy.com for configuration, ordering and contact information.

<sup>3</sup> XgP & XgQ- output ripple and noise are load dependent. Contact Advanced Energy or sales.support@aei.com for details.

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Linitered land 47,440 Lin	85	—	264	VAC
	Universal input 47-440 Hz	120	—	380	VDC
Power Rating	XVA:400W, XVB:700W, XVC:1000W, XVD:1200W, XVE:1340W	_	_	—	—
Input Current XVA	85 VAC in 400 W out	_	7.5	—	А
XVB	85 VAC in 700 W out	—	9.5	—	А
XVC, XVD	85 VAC in 850 W out	_	11.5	—	А
XVE	85 VAC in 1000 W out	—	14	—	А
Inrush Current	230 VAC @ 25°C	—	—	25	А
Undervoltage Lockout	Shutdown	65	—	74	VAC
Power Factor	110 VAC @ Full Load	0.98	0.99	—	—
Fusing XVA	250 V	—	F8A HRC	—	_
XVB	250 V	_	F10A HRC	—	—
XVC, XVD	250 V	—	F12A HRC	—	—
XVE	250 V	-	F15A HRC	_	_





#### ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

### Advanced Energy

For international contact information, visit advancedenergy.com

sales.support@aei.com +1 970 221 0108

#### PRECISION | POWER | PERFORMANCE

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2019 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy®, AE® are U.S. trademarks of Advanced Energy Industries, Inc.