

Delivering leading edge, innovative power solutions for more than 30 years....

Model:GTM96900P90VV.V-T2

June 2, 2020

**90W Desktop Power Supply Adapter offering IEC60950, 60601, 62368, UL1310, IEC60335 Certifications and DOE EPS 2.0 Level VI compliant, Class II**

**Information**

Model Number GTM96900P90VV.V-T2

Description The 90W Desktop Power Supply family also serves as an LED Driver which meets 61000-3-2 Class C Harmonics and has IEC61347, LPS, and UL1310 (Class 2 Transformer) certification, Class II.



Agency Documents <http://www.globtek.info/certs/GTM96900P90VV.V/>

CE EC-Declaration [https://www.globtek.com/pdf/ec\\_declaration/a0Oa000000MigSZEAZ](https://www.globtek.com/pdf/ec_declaration/a0Oa000000MigSZEAZ)

RoHS/RoHS2 Declaration [https://www.globtek.com/pdf/rohs\\_cert/a0Oa000000MigSZEAZ](https://www.globtek.com/pdf/rohs_cert/a0Oa000000MigSZEAZ)

REACH Declaration [https://www.globtek.com/pdf/iso\\_certificates/REACH.pdf](https://www.globtek.com/pdf/iso_certificates/REACH.pdf)

Conflict Minerals Declaration <https://www.globtek.com/pdf/conflict-minerals.pdf>

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**MODEL PARAMETERS**

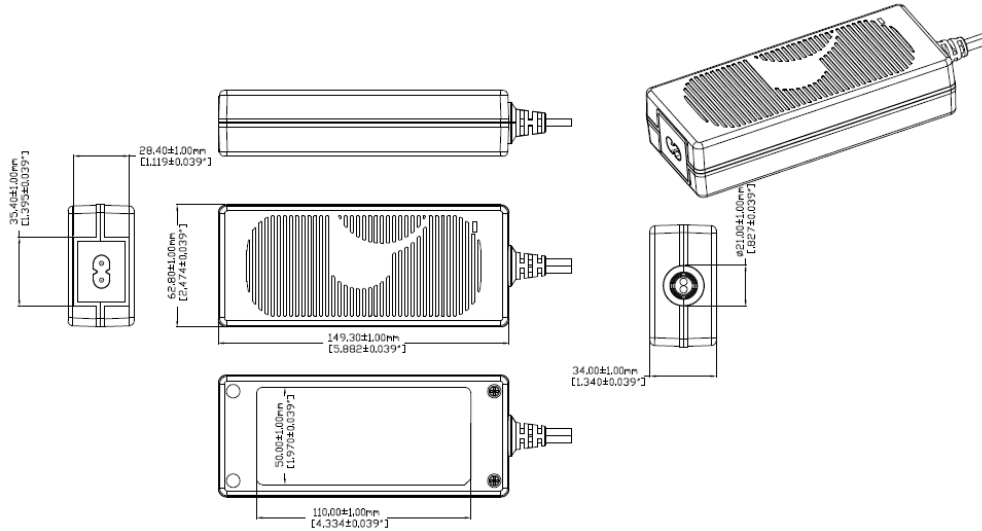
Type	Desktop/External
Technology	Regulated Switchmode AC-DC Power Supply AC Adaptor
Category	ITE / Medical Power Supply/Class 2/Household Power Supply
Input Voltage	100-240V~, 50-60 Hz
I/P Amps (A)	1.5A
Wattage (W)	90.0
Vout Range (V)	12-54
Efficiency Level	USA DOE Level VI / Eco-design Directive 2009/125/EC, (EU) 2019/1782
Ingress Protection	IP41
Size (mm)	149.38 x 62.6 x 33.5 +/-1.0

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**ENCLOSURE**



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**RATING TABLE**

Model Number	Voltage	Amps(A)	Watts(W)	RFQ
GTM96900P8512-T2	12 V	7.1	85.20	<a href="#">RFQ</a>
GTM96900P8512-T2Z	12 V	7.1	85.20	<a href="#">RFQ</a>
GTM96900P9015-T2Z	15 V	6	90.00	<a href="#">RFQ</a>
GTM96900P9015-T2	15 V	6	90.00	<a href="#">RFQ</a>
GTM96900P9019-T2Z	19 V	4.73	89.87	<a href="#">RFQ</a>
GTM96900P9019-T2	19 V	4.73	89.87	<a href="#">RFQ</a>
GTM96900P9022-T2Z	22.0 V	4.09	89.98	<a href="#">RFQ</a>
GTM96900P9024-T2Z	24 V	3.75	90.00	<a href="#">RFQ</a>
GTM96900P9024-T2	24 V	3.75	90.00	<a href="#">RFQ</a>
GTM96900P9030-T2Z	30 V	3	90.00	<a href="#">RFQ</a>
GTM96900P9030-T2	30 V	3	90.00	<a href="#">RFQ</a>
GTM96900P9036-T2	36 V	2.5	90.00	<a href="#">RFQ</a>
GTM96900P9036-T2Z	36 V	2.5	90.00	<a href="#">RFQ</a>
GTM96900P9048-T2Z	48 V	1.875	90.00	<a href="#">RFQ</a>
GTM96900P9048-T2	48 V	1.875	90.00	<a href="#">RFQ</a>
GTM96900P9054-T2Z	54 V	1.66	89.64	<a href="#">RFQ</a>
GTM96900P9054-T2	54 V	1.66	89.64	<a href="#">RFQ</a>

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## SPECIFICATIONS

### A) ELECTRICAL SPECIFICATIONS:

01. Input Voltage: Specified 90-264 Vac, Nameplate rated: 100-240Vac
  - 90-264Vac range @ 100% of rated load current
  - 85-264 Vac range @ 90% of rated load current
  - 90-370 VDC range @ 100% of rated load current
02. Input Frequency: Specified 47-63 Hz, Nameplate rated 50/60Hz
03. Power Factor: 0.90 minimum @ 230Vac, 0.97 minimum @ 115Vac
04. Output Type: LPS (Limited Power Source), limited to less than 8A and 100W
04. Output Regulation: +/- 4% measured at the output connector
05. Line Voltage Regulation: +/- 0.5% typical measured at full load
06. Green Power On Indicator LED
07. Output Ripple (Vp-p): 1% or 200 mV whichever is greater, measured at 20 MHz bandwidth with 0.1 uf ceramic capacitor in parallel with a low impedance 47 uf electrolytic capacitor connected at the end of the output connector at nominal line
08. Turn-ON/OFF Overshoot: 5% maximum, 1 mS typical recovery time for 25% to 50% step load
09. Turn-ON Delay: 1 second typical
10. Hold-Up Time: 20 mS minimum
11. Inrush Current: 30A maximum at 115Vac input and 60A maximum at 230 Vac input
12. Switching Frequency: Varies from 25KHz to 125KHz
13. Efficiency: Compliant with Efficiency Level VI Standard and 230 CoC Tier 2 Limits
14. No Load Standby Power: <0.15 W @ 230Vac

### B) PROTECTION

01. Input Protection: Input line fusing and 300Vac rated MOV
02. Non-LPS version: Current Limited to 110% to 160% of rated output current
03. LPS version: Short Circuit/Overload limited to less than 8A and 100W (add Z suffix in model #)
04. Over-Temperature : Inherently protected against continuous overload at high temperature
05. Output Over-Voltage: 110% to 135% of nominal output voltage under full load condition, and less than 60V max. Latching protection, cycle AC OFF to reset.

### C) SAFETY

01. Dielectric Withstand Voltage: 4000Vac or 5656Vdc from input to output, On Class I models, 3000Vac or 4242Vdc from input to earth
02. Earth Leakage Current: Class I models < 300uA, N/A for Class II models
03. Touch Current: Class I models < 20uA, Class II models < 70uA
04. Output Isolation Options:
  - a) C8 or C18 Inlet, Class II
  - b) C6 or C14 Inlet, Class II FE, Output Isolated from Earth contact
  - c) C6 or C14 Inlet, Class I, Output negative directly attached to Earth contact
05. Earth Continuity Test: < 0.1 Ohm between Earth Pin at AC input and PCB termination point (Class I models only)
06. Means of Protection: 2 x MOPP
07. Primary to Secondary Bridging Capacitance: Two IEC60384-14 certified Y1 type capacitors in series
08. Compliant Standards: See listings at end of this drawing for specifics

### D) EMC

EN 60601-1-2, 4<sup>th</sup> edition

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Emissions, per EN 55032, EN 61000-6-3, EN 61000-6-4, CISPR11 and CISPR22

Conducted Emissions: Class B, FCC Part 15, Class B

Radiated Emissions: Class B, FCC Part 15, Class B

Line Frequency Harmonics EN61000-3-2, Class A

Voltage Fluctuations/Flicker EN61000-3-3

Immunity, per EN 55024, EN 61000-6-1, EN 61000-6-2

Static Discharge Immunity EN61000-4-2, 10kV Contact Discharge, 18kV air discharge

Radiated RF Immunity EN61000-4-3, 10V/m 80-1000MHz, 3V/m 1-2.7GHz, 80% 1KHz AM.

EFT/Burst Immunity EN61000-4-4, 4kV/100kHz.

Line Surge Immunity EN61000-4-5, 2kV differential, 4kV common-mode

Conducted RF Immunity EN61000-4-6, 3Vrms, 80% 1KHz AM

Power Frequency Magnetic Field Immunity EN61000-4-8, 3A/m

Voltage Dip Immunity EN61000-4-11, Criteria

## E) OTHER:

01. MTBF: 1,000,000 Hours @ 40°C ambient temperature, Full Load

02. Operating Temperature:

GTM96900P Family: 0°C to 50°C ambient temperature with full load

Regarding Operating Temperature,

a- See below derating table for output power capability at alternate temperature

b- Extended low end temperature range available as custom option

03. Humidity: 0% to 95% relative humidity, non-condensing

04. Storage Temperature: -30°C to 80°C

05. Cooling: Convection

06. ROHS: Compliant with latest regulations, see approvals section below

07. Operational Altitude: 5000M

## F) DESKTOP STYLE ENCLOSURE

01. Housing: High impact plastic, 94V0 polycarbonate, non-vented

02. Size: 149.4 x 62.6 x 33.5 +/-1.0 mm

03. Markings: Label or Laser printed

04. AC Input mechanical options: Desktop C6, C8, C14 or C18 IEC Inlet.

## G) SPECIAL OPTIONS

01. LPS or non-LPS versions (Z suffix for LPS model)

02. Custom Cordsets, various cordage types, and connector types

03. Custom Markings

04. Short term Output Surge Capability, as a non-LPS version

05. Reduced Leakage Current version, medical CF leakage current compliance

06. Tightened output voltage tolerance

07. Reduced Output Ripple Level

08. Reduced output power Marking/Rating

09. LED Lighting, Class C Line Harmonics per 61000-3-2

Three Power Ranges available: 27-51W, 40-65W and 57-90W

10. High Rel PCB laminate with Plated through Holes for IPC610 Class 2 Compliance

11. Low Temperature operation, down to -40°C

12. Special Housing Colors and Cordset Colors

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13. Epoxy Potted Version, "P2" or "P3" suffix, with flying wires
14. Back EMF applications, custom solutions. For unusual motor load aps and other high inductance reverse energy flow requirements
15. Improved Ingress Protection Rating

#### H) OUTPUT CONNECTORS

Several output connector options are available with various output current ratings.

GlobTek can supply 10A rated 2.1mm and 2.5mm style DC Power Jacks, to complement our

10A output rated 2.1mm and 2.5mm DC power plugs used on our output cordsets.

Please visit <https://en.globtek.com/news/high-current-coaxial-barrel-plug-jacks-for-high-wattage-power-supplies> for a real time product offering of mating connectors.

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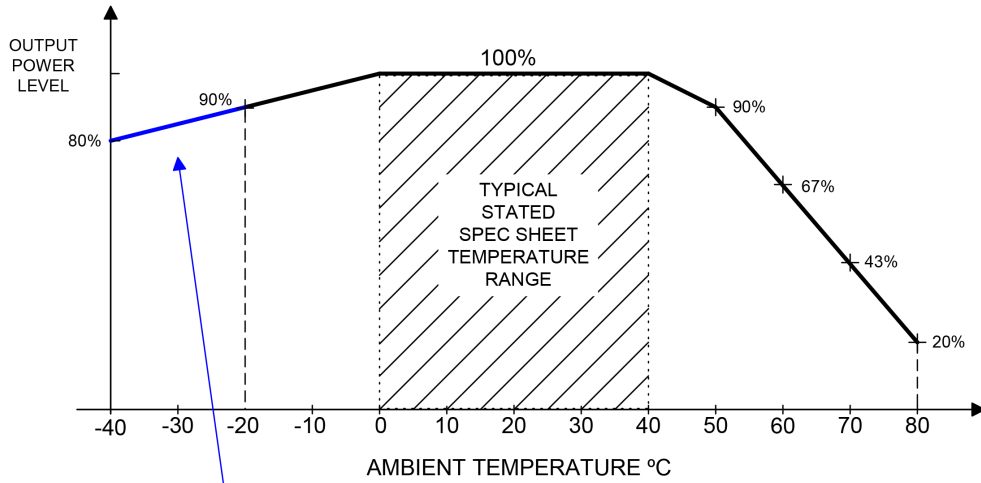
Model:GTM96900P90VV.V-T2

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# DERATING CURVE

## TYPICAL EXTERNAL POWER SUPPLY DERATING CURVE

(GTM96900 LPS PRODUCTS)



Blue Line represents special/optional Low Temperature, High Performance Construction



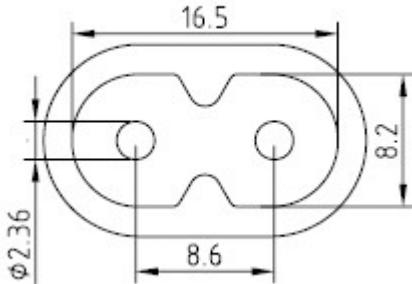
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**INPUT CONFIGURATION**

Description IEC 60320/C8 AC Inlet connector, Class II, Non-Earth Ground (aka "Figure-8")



Mates with IEC 60320/C7 Plug

Below are standard cordsets which are "not included" (unless stated above); these may be purchased separately or packaged with the power supply. Please contact your Sales Engineer if the style required is not shown below. Many more available in different lengths, colors or cable material.

Standard International IEC 320/C7 Cordsets

<a href="#">2094112M703(R)</a>	Argentina (Type I)	IRAM 2063	IEC 320/C7 <sup>20007</sup>
<a href="#">5014112M703A(R)</a>	Australian (Type I)	AS 3112	IEC 320/C7 <sup>20007</sup>
<a href="#">207B4111M8703(R)</a>	Brazil (Type N)	NBR14136	IEC 320/C7 <sup>18006</sup>
<a href="#">4533501M8703(R)</a>	China (Type A)	GB 2099.1	IEC 320/C7 <sup>18306</sup>
<a href="#">2074112M703A(R)</a>	European (Type C)	CEE 7/16	IEC 320/C7 <sup>20007</sup>
<a href="#">2084111M8703(R)</a>	India (Type M)	BS 546	IEC 320/C7 <sup>18006</sup>
<a href="#">451J3401M8703(R)</a>	Japan (Type A)	JIS 8303	IEC 320/C7 <sup>18306</sup>
<a href="#">2044112M703A(R)</a>	Korea (Type C)	KS C8305	IEC 320/C7 <sup>20007</sup>
<a href="#">4511116F703A(R)</a>	N. American (Type A)	NEMA 1-15P	IEC 320/C7 <sup>18306</sup>
<a href="#">4033401M8703A(R)</a>	Taiwan (Type A)	CNS690	IEC 320/C7 <sup>18306</sup>
<a href="#">6104112M703A(R)</a>	UK, Hong Kong, Singapore, Gulf States (Type G)	BS1363	IEC 320/C7 <sup>20007</sup>

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**OUTPUT CONFIGURATION**

Common output connector options:



L Type (Coaxial 5.5x2.5mm plug)



C Type (Coaxial 5.5x2.1mm plug)



K Type (Coaxial 3.5x1.3mm plug)



LL Type (5.5x2.5mm Locking 760k type)



CL Type (5.5x2.1mm Locking S761k type)



ML2 Type (Molex housing 43025-0200)



YL3 Type (KPPX-3P)



YL4 Type (KPPX-4P)



EJ1/2/3/4/5 (EIAJ RC-5320A type connectors)



MSB Type (Micro USB)



USBC Type (USB Type C)



Inquire for custom design

For a comprehensive list of options, [click here](#)

Contact GlobTek for your specific requirements or custom solutions.

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## Approvals

Logo	Description
No Logo Applicable	CB for IEC 60601-1:2006/A1:2013+A12:2014 IEC 60601-1-11:2015
No Logo Applicable	CB for IEC 60335-1:2010 (Fifth Edition) incl. Corr. 1:2010 and Corr. 2:2011 + A1:2013
No Logo Applicable	CB for IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
No Logo Applicable	CB for IEC61347-1:2015 + A1:2017 IEC61347-2-13:2014, A1:2016
No Logo Applicable	CB for IEC 62368-1:2014 (Second Edition)
	CCC Altitude up to 5000 m GB17625.1-2012, GB4943.1-2011, GB/T9254-2008
	Test standard: EN 55032: 2012+AC: 2013 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 55024:2010 EN 60601-1-2:2015
	Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements [UL 62368-1:2014 Ed.2] Audio/Video, Information And Communication Technology Equipment - Part 1: Safety Requirements [CSA C22.2#62368-1:2014 Ed.2]
	CHINA SJ/T 11364-2014, China RoHS Chart: <a href="http://en.globtek.com/globtek-rohs.php">http://en.globtek.com/globtek-rohs.php</a>

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Conforms to AAMI STD.ES60601-1,IEC 60601-1-11 Certified to CAN/CSA STD.C22.2 NO.60601-1	Conforms to AAMI STD.ES60601-1,IEC 60601-1-11 Certified to CAN/CSA STD.C22.2 NO.60601-1
Conforms to UL STD. 1310 Certified to CSA STD. C22.2 NO.223	Conforms to UL STD. 1310 Certified to CSA STD. C22.2 NO.223
Conforms to UL STD. 60950-1 Certified to CSA STD C22.2 NO.60950-1	Conforms to UL STD. 60950-1 Certified to CSA STD C22.2 NO.60950-1
	Declaration ДС № EAЭС N RU Д-US.KA01.B.10453_19 Custom Union of Russia, Belarus and Kazakhstan <a href="http://www.globtek.com/redirect/?loc=gost-certificate-eac-declaration">http://www.globtek.com/redirect/?loc=gost-certificate-eac-declaration</a>
	Medical Electrical Equipment - Part 1: General Requirements For Basic Safety And Essential Performance (R2012) [AAMI ES60601-1:2005 +C1;A2] [CSA C22.2#60601-1:2014 Ed.3] [AAMI HA60601-1-11:2015 Ed.2]
	Information Technology Equipment Safety Part 1: General Requirements >Valid without technical revision: 01Jan2022< [UL 60950-1:2007 Ed.2 +R:14Oct2014]
 Class 2 Power Unit	Class 2 Power Units [UL 1310:2011 Ed.6 +R:12Dec2014] up to 5A Power Supplies With Extra-Low Voltage Class 2 Outputs [CSA C22.2 No.223:2015 Ed.3]
CAN ICES-3(B)/NMB-3(B)	Compliance of this PSU with Industry Canada, Class B demonstrated with a standard output load. The ICES law stipulates that system-level testing is required to demonstrate compliance with the ICES-3 emission limits with the actual system load.
	Indoor Use Only - Mark is on the label or Molded in the case
IP41	Ingress Protection: ?IP41 to IEC60529:2001 Protection against granular foreign bodies - Protected against vertically falling drops of water

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 GlobTek, Inc.	JAPAN TUV R-PSE, Cert. No. JD 50313287, to J60950-1(H26) , J55022(H22),J3000(H25)[15V or less]. Please reference the following website for guidelines on PSE regulations: <a href="http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/">http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/</a>
 GlobTek, Inc.	JAPAN TUV R-PSE, Cert. No. JD 50313287, to J60950-1(H26) , J55022(H22),J3000(H25)[DC15?30V]. Please reference the following website for guidelines on PSE regulations: <a href="http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/">http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/</a>
 GlobTek, Inc.	JAPAN TUV R-PSE, Cert. No. JD 50313287, to J60950-1(H26) , J55022(H22),J3000(H25)[DC30?60V]. Please reference the following website for guidelines on PSE regulations: <a href="http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/">http://en.globtek.com/importing-ite-and-medical-power-supplies-ac-adaptors-to-japan/</a>
<b>EFFICIENCY LEVEL VI</b>	Efficiency: complies to section 301 of Energy Independence and Security Act (EISA) complies with Energy Star tier 2 (North America), ECP tier 2 (China), MEPS tier 2 (Australia), Code of Conduct (Europe)
LPS	Limited Power Source if Z suffix on model number
LPS	Limited Power Source if Z suffix on model number 62368
	Morocco SDoC declaration <a href="http://www.globtek.info/certs/Morocco%20SDoC%20Declaration/">http://www.globtek.info/certs/Morocco%20SDoC%20Declaration/</a>
Patent pending	Patent pending
	RCM certificate SAA-170646-EA; Australia and New Zealand Regulatory Compliance, Mark ( <a href="http://rcm.standards.org.au/rcmfaq/rcmfaq.htm">http://rcm.standards.org.au/rcmfaq/rcmfaq.htm</a> )
RoHS	Specifications of directive 2011/65/EU Annex VI (ROHS-2) with amendment 2015/863-EU (ROHS-3) <a href="http://www.ce-mark.com/Rohs%20final.pdf">http://www.ce-mark.com/Rohs%20final.pdf</a>
	S-Mark Certificate EN 60601-1:2006 + A1:2013 + A12:2014 EN 60601-1-11:2015 <a href="http://www.intertek.com/marks/s/">http://www.intertek.com/marks/s/</a>
	S-Mark Certificate EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+A2:2013 ( <a href="http://www.intertek.com/marks/s/">http://www.intertek.com/marks/s/</a> )

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 10276	Ukraine UKRSeprO (Document: <a href="http://www.globtek.com/html/iso_certificates/GT_Ukraine.pdf">www.globtek.com/html/iso_certificates/GT_Ukraine.pdf</a> )
	Japan: Voluntary Control Council for Interference (VCCI)
	WEEE: Complies with EU 2012/19/EU ( <a href="http://ec.europa.eu/environment/waste/weee/index_en.htm">http://ec.europa.eu/environment/waste/weee/index_en.htm</a> ) Mark is on the label or Molded in the case