

UL TEST REPORT AND PROCEDURE

Standard:	UL 60601-1, 1st Edition, 2006-04-26 (Medical Electrical Equipment, Part 1: General Requirements for Safety) CAN/CSA-C22.2 No. 601.1-M90, 2005 (Medical Electrical Equipment - Part 1: General Requirements for Safety)
Certification Type:	Component Recognition
CCN:	QQHM2, QQHM8 (Power Supplies, Medical and Dental)
Product:	Switching Power Adapter
Model:	GTM91120-WWVV-X.X-AB series, GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL. M can be "M" or "-" for market identification and not related to safety WW is the rated output wattage designation, with a maximum value of "30"; VV is the standard rated output voltage designation, with a maximum value of "48"; -X.X denotes the optional deviation, subtracted or added from standard output voltage in 0.1 volt increments or blank to indicate the no voltage different; A:T is External/Desktop model, F is Open Frame, P is Encapsulated; when A=T, B can be 2 or 3A, 2 presents Class II, 3A presents Class I; when A=F, B can be Blank or W, W means class II equipment, Blank means class I; when A=P, B can be 2 or 3, 2 means class II equipment, 3 means class I equipment.
Rating:	Input:100-240 Vac, 50-60 Hz, 1.5A Model GTM91120-WWVV-X.X-AB Output: Refer to ID 07-06 Model GTM91128LI1CEL Output: 4.2V, 1000mA; Model GTM91128LI2CEL Output: 8.4V, 1000mA; Model GTM91128LI3CEL Output: 12.6V, 1000mA;
Applicant Name and Address:	GLOBTEK (HONG KONG) LTD UNIT 1402, BENSON TOWER 74 HUNG TO RD KWUN TONG KOWLOON HONG KONG

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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2012-07-21

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Report Reference #

E341350-A3-UL

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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Prepared by: Steve Chiu

Reviewed by: Calvin Tang

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
 - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
 - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
 - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

For model GTM91120-WWVV-X.X-AB series, Electronic components mounted to PWB, and housed in plastic enclosure, with Class II appliance inlet or Class I Inlet, with alternate construction of Open Frame or Encapsulated which intended to provide electrical power to medical electrical equipment.

For models GTM91128LI1CEL, GTM91128LI2CEL, GTM91128LI3CEL, Electronic components mounted to PWB, and housed in plastic enclosure, with Class II appliance inlet, which intended to provide electrical power to battery pack used in medical electrical equipment. Models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL is External/Desktop model.

Model Differences

Model GTM91120-WWVV-X.X-T3A is identical to Model GTM91120-WWVV-X.X-T2 except the Class Type.

Model GTM91120-WWVV-X.X-PB is identical to Model GTM91120-WWVV-X.X-TB except the Enclosure Construction and with Encapsulation Construction.

Model GTM91120-WWVV-X.X-FB is identical to Model GTM91120-WWVV-X.X-TB except the Enclosure Construction and PWB Layout.

Models GTM91128LI1CEL, GTM91128LI2CEL, GTM91128LI3CEL are identical to Model GTM91120-WWVV-X.X-F2 except employ additional output battery charging circuit, output rating, PWB size and Plastic enclosure.

Technical Considerations

- Classification of installation and use : N/A - Recognized Power Supply
- Supply connection : Appliance coupler
- Accessories and detachable parts included in the evaluation : None
- Options included : None
- The product was investigated to the following additional standards:: IEC 60601-1:1988 + A1:1991 + A2:1995, CAN/CSA-C22.2 No. 601.1-M90 (R2005) (includes National Differences for Canada), UL 60601-1, 1st Edition, 2006-04-26 (includes National Differences for USA)
- The product was not investigated to the following standards or clauses:: Clause 36, Electromagnetic Compatibility (IEC 601-1-2), Clause 48, Biocompatibility (ISO 10993-1), Clause 52.1, Programmable Electronic Systems (IEC 601-1-4)
- The product is Classified only to the following hazards:: Casualty, Fire, Shock,
- The degree of protection against harmful ingress of water is:: Ordinary
- The mode of operation is:: Continuous

- Software is relied upon for meeting safety requirements related to mechanical, fire and shock:: No
- The product is suitable for use in the presence of a flammable anesthetics mixture with air or oxygen or with nitrous oxide:: No

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- This power supply has not been evaluated for non patient connected applications.
- The secondary output circuits of Transformer T1 output is SELV and not at hazardous energy levels.
- The power supply was evaluated as Basic Insulation between Primary and Earthing (Class I), Double Insulation between Primary and Secondary, Double Insulation between Primary and Enclosure. See insulation diagram for details.
- The Temperature Test was performed in an ambient of 40 Deg.C.
- The maximum working voltage present is 242 V rms; 795 V pk-pk. The electric strength tests in the end-product shall be based on this value.
- Consideration should be given to measuring the temperatures on power electronic components and transformer windings when the power supply is installed in the end-use equipment. The primary transformer (T1) incorporates a Class 130 (B) insulation system.
- The Clearances and Creepage Distances have additionally been assessed for suitability up to 3000 m elevation.
- This power supply was tested on a 20 A branch circuit. If used on a branch circuit greater than this, additional testing may be necessary.
- The AC inlet of this switching power supply is polarised type. The suitability need evaluated in the end product.
- The need for conduction Patient leakage current tests should be considered as part of the end product evaluation.
- This power supply has been evaluated as a Class I and Class II , continuous operation, ordinary Equipment and has not been evaluated for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide. An additional evaluation shall be made if the power supply is intended for use in other than Class I and Class II equipment.
- This power supply has not been provided with a power supply cord; these items must be considered

in the end use product.

- The Protective bonding wire should not be connected to other equipment as earthing protection.
- During testing, the testing battery is rated 3.7V 1000mAh, 1S-1P, (for model GTM91128LI1CEL) and 11.1V, 1000mAh, 3S-1P (for GTM91128LI1CEL). The suitability of the battery rating and configuration should be considered at end system.
- The filed connection of the output wire of models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL is not evaluated.

Additional Information

The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

SR8152030, no-test require for correction Critical Component Table, due to typographical error.

Project 10CA43386 (Revision)

- Add Model GTM91120-WWVV-X.X-T3A Series
- Add alternate source of AC Inet type SO-222 and SC-12S
- Revise model designation to GTM91120-WWVV-X.X-AB series

Project 10CA43385 (Revision)

- Add Model GTM91120-WWVV-X.X-P2 Series
- Add Model GTM91120-WWVV-X.X-FW Series

Project 10CA43677 (Revision)

- Add Model GTM91120-WWVV-X.X-P3 Series
- Add Model GTM91120-WWVV-X.X-F Series
- Add Insulation Tape, Type 1350F, 1350-1, 35660Y, LY-20 for HS2
- Correct the model designation of Label to Type FJ-03-1
- Correct the rating of CX1 to 0.47uF and CY1 to 3300pF
- Cancel the description of min 3 layers of insulation tape 1350T-1 (1350T-1 already with 3 layers construction)

Project 11CA59755 (Revision)




- Add Models GTM91128LI1CEL, GTM91128LI2CEL, GTM91128LI3CEL
- Add Alternate Transformer from Shandong Boam Electric Co Ltd

Additional Standards

The product fulfills the requirements of: The product fulfills the requirements of: CAN/CSA C22.2 No. 601.1-M90 (R1997), CAN/CSA C22.2 No. 601.1S1-94, and CAN/CSA C22.2 No. 601.1B-98 (National Differences for Canada)

Markings and instructions

Clause Title	Marking or Instruction Details
Company identification	Classified or Recognized company's name, Trade name, Trademark or File
Model	Model number

Supply Connection	Voltage range, ac/dc, phases if more than single phase
Alternating current	
Direct current	
Supply Frequency	Rated frequency range in hertz
Power Input	Amps, VA, or Watts
Class II equipment	
Output	Rated output voltage, power, frequency.
Special Instructions to UL Representative	
N/A	

Production-Line Testing Requirements			
Test Exemptions - The following models are exempt from the indicated test			
Model	Grounding Continuity	Dielectric Voltage Withstand	Patient Circuit Dielectric Voltage Withstand
N/A	--	--	--
Solid-State Component Test Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during either Dielectric Voltage Withstand Test:			
N/A			
Sample and Test Specifics for Follow-Up Tests at UL			
The following tests shall be conducted in accordance with the Generic Inspection Instructions			
Model	Samples	Test	Test Details
N/A	--	--	--

TABLE: List of Critical Components

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
Enclosure (For Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Sabic Innovative Plastics B V	HF500R(f2)	Rated min V-0, 125 degC Overall 45.3 by 100.3 by 35.2 mm, min 2.0mm thickness.	QMFZ2 (E45329)	UL
Enclosure (For Encapsulation only)	Sabic Innovative Plastics B V	HF500R(f2)	Rated min V-0, 125 degC Overall 97 by 46 by 32 mm, min 2.0mm thickness.	QMFZ2 (E45329)	UL
Appliance –Inlet (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Zhejiang Leci Electronics Co Ltd	DB-8	Rated 5A, 250Vac, 105 degC	AXUT2/8 (E302229)	UL
Appliance –Inlet – Alternate (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Kunshan DLK Electronics Technology Co Ltd	CDJ-2	Rated 2.5A, 250Vac, 125 degC	AXUT2/8 (E317189)	UL
Appliance –Inlet – Alternate (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Shenzhen Delikang Electronics Technology Co Ltd	CDJ-2	Rated 2.5A, 250Vac, 125 degC	AXUT2/8 (E217394)	UL
Appliance –Inlet – Alternate (For Class II Desktop construction and models	Rich Bay Co Ltd	R-201SN90	Rated 2.5A, 250Vac, 105 degC	AXUT2/8 (E184638)	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)					
Appliance –Inlet – Alternate (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Sun Fair Electric Wire & Cable (HK) Co Ltd	S-01	Rated 2.5A, 250Vac.	AXUT2/8 (E226643)	UL
Appliance –Inlet – Alternate (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Inalways Corp	0721 series	Rated 2.5A, 250Vac, 105 degC	AXUT2/8 (E94191)	UL
Appliance –Inlet – Alternate (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Tecx-unions Technology Corp	SO-222 series	Rated 2.5A, 250Vac, 75 degC	AXUT2 (E220004)	UL
Appliance –Inlet – Alternate (For Class II Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Supercom Electronics Co Ltd	SC-12S series	Rated 2.5A, 250Vac, 75 degC	AXUT2/8 (E152973)	UL
Appliance –Inlet – (For	Supercom	SC-14	Rated 2.5A, 250Vac, 75 degC	AXUT2/8	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
Class I Desktop construction only)	Electronics Co Ltd			(E152973)	
Appliance –Inlet – Alternate (For Class I Desktop construction only)	Tecx-Unions Technology Corp	TU-333	Rated 2.5A, 250Vac, 105degC,	AXUT2/8 (E220004)	UL
Appliance –Inlet – Alternate (For Class I Desktop construction only)	Zhejiang Leci Electronics Co Ltd	DB-6	Rated 5A, 250Vac, 105DegC	AXUT2/8 (E302229)	UL
Appliance –Inlet – Alternate (For Class I Desktop construction only)	Rich Bay Co Ltd	R-30790	Rated 2.5A, 250Vac, 105 degC	AXUT2/8 (E184638)	UL
Appliance –Inlet – Alternate (For Class I Desktop construction)	Sun Fair Electric Wire & Cable (HK) Co Ltd	S-02	Rated 2.5A, 250Vac,	AXUT2/8 (E226643)	UL
Appliance –Inlet – Alternate (For Class I Desktop construction only)	Kunshan DLK Electronics Technology Co Ltd	CDJ-2	Rated 2.5A, 250Vac, 105 degC	AXUT2/8 (E317189)	UL
Appliance –Inlet – Alternate (For Class I Desktop construction only)	Inalways Corp.	0724	Rated 2.5A, 250Vac, 65 degC	AXUT2/8 (E94191)	UL
Input connector (For Open Frame Construction only)	Various	Various	Rated min 240Vac, 1.5A, 85 degC.	ECBT2/8	UL,cUL
Input Lead Wire (For Encapsulation construction only)	Various	Various	Rated min 300V, 105DegC, min 18AWG, VW-1.	AVLV2/8	UL, cUL
Earthing Conductor (For	Various	Various	Yellow and Green in Color, provided between inlet	AVLV2/8	UL, cUL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
class I model only and except for Open Frame construction)			and PWB secondary side. Rated min 300V, 105 degC, VW-1		
Fuse (F1) and (F2)	Walter Electronic Co Ltd.	ICP	Rated 3.15A, 250Vac, provided with tubing (YDPU2/8), marked with VW-1, min 300V, 105 degC.	JDYX/7 (E56092)	UL, cUL
Fuse (F1) and (F2) - Alternate	Zhong Shan Lanbao Electrical Co Ltd	RTI-10	Rated 3.15A, 250Vac, provided with tubing (YDPU2/8), marked with VW-1, min 300V, 105 degC.	JDYX/7 (E213695)	UL, cUL
Fuse (F1) and (F2) - Alternate	Various	Various	Rated 3.15A, 250Vac, provided with tubing (YDPU2/8), marked with VW-1, min 300V, 105 degC.	JDYX/7	UL, cUL
Varistor (MOV)	Thinking Electronic Industrial Co Ltd	TVR10471, TVR07471, TVR14471	Rated 300Vac.	VZCA2/8 (E314979)	UL, cUL
Varistor (MOV) - Alternate (Optional)	Joyin Co Ltd	7N471K, 10N471K, 14N471K	Rated 300Vac.	VZCA2/8 (E325508)	UL, cUL
Varistor (MOV) - Alternate (Optional)	Centra Science Corp	CNR07D471K, CNR10D471K, CNR14D471K	Rated 300Vac.	VZCA2/8 (E316325)	UL, cUL
Varistor (MOV) - Alternate (Optional)	Success Electronics Co Ltd	SVR07D471K, SVR10D471K, SVR14D471K	Rated 300Vac.	VZCA2/8 (E330256)	UL, cUL
Varistor (MOV) - Alternate (Optional)	Brightking (Shenzhen) Co Ltd	471KD07, 471KD10, 471KD14	Rated 300Vac.	VZCA2/8 (E327997)	UL, cUL
Varistor (MOV) - Alternate (Optional)	Walsin Technology Corp.	VZ07D471K, VZ10D471K, VZ14D471K	Rated 300Vac.	VZCA2/8 (E309297)	UL, cUL
Varistor (MOV) - Alternate (Optional)	Lien Shun Electronics Co Ltd	07D471K, 10D471K,	Rated 300Vac.	VZCA2/8 (E315524)	UL, cUL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
		14D471K			
Bleeder Resistors (R1A, R1B)	--	--	Min. 0.499M ohm , 1/4W	-	-
X-Capacitor (CX1) (Optional)	Cheng Tung Industrial Co., Ltd.	CTX	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E193049)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	Winday Electronic Industrial Co Ltd	MPX	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E302125)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	ULTRA TECH XIPHI ENTERPRISE CO LTD	HQX	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E183780)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	Okaya Electric Industries Co. LTD	RE series	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E47474)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	VISHAY Capacitors Belgium N V	F1772	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2 (E100682)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	Tenta Electric Industrial Co Ltd	MEX	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOKY2/8 (E186475)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	DAIN ELECTRONICS CO LTD	MEX, MPX, NPX	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E147776)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	Sinhua Electronics (Huzhou) Co. Ltd.	MPX	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E237560)	UL, cUL
X-Capacitor (CX1) - Alternate (Optional)	FOSHAN SHUNDE CHUANG GE ELECTRONIC INDUSTRIAL CO LTD	MKP-X2	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E308832)	UL, cUL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
X-Capacitor (CX1) - Alternate (Optional)	SHUN DE DAHUA ELECTRIC CO LTD	HD	Rated 0.47uF max. Min 250Vac, 100degC, marked X1 or X2 (meets IEC 60384-14)	FOWX2/8 (E227157)	UL, cUL
Y-Capacitors (CY1) – (Optional)	WELSON INDUSTRIAL CO LTD	WD	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2/8 (E104572)	UL
Y-Capacitors (CY1) – Alternate (Optional)	SUCCESS ELECTRONICS CO LTD	SE, SB	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2 (E114280)	--
Y-Capacitors (CY1) - Alternate (Optional)	TDK CORP	CD	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2 (E37861)	UL
Y-Capacitors (CY1) - Alternate (Optional)	WALSIN TECHNOLOGY CORP	AH	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2/8 (E146544)	UL
Y-Capacitors (CY1) - Alternate (Optional)	JYA-NAY CO LTD	JN	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2/8 (E201384)	UL
Y-Capacitors (CY1) - Alternate (Optional)	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2/8 (E249006)	UL
Y-Capacitors (CY1) - Alternate (Optional)	MURATA MFG CO LTD	KX	Rated 2200pF max. Min 250V, 105degC, marked with Y1 or Y2 (meets IEC 60384-14)	FOWX2 (E37921)	UL
Line Filter (LF1)	Various	Various	Open-type construction with ferrite core. Copper wire (OBMW2), rated min. 130degC. See illustration *ID4-12 for details.	-	-
Diode (D1, D2, D3, D4)	--	--	Rated min 2A, min 1000V	-	-
Transistor (Q1)	--	--	Rated min 7A, min600V	-	-
Electrolytic Capacitor (C2)	--	--	Rated 68uF, Min 400V, fully tubed by tubing (YDPU2) 120 degC, VW-1.	-	-

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
Transformer (T1)	Top Nation Electronic Ltd	GT-3005001 for 5-7.5V GT-3009001 for 7.6V to 10.5V GT-3012001 for 10.6V to 14.5V GT-3015001 for 14.6V to 19.5V GT-3024001 for 19.6V to 24V GT-3048001 for 24.1V to 48V	(OBJY2) Class B insulation system, (E212542), designated M7A90. Open type construction with ferrite core. See enclosed illustration ID 4-11 for construction.	-	-
Primary winding used in T1	Various	Various	Polyurethane with or without overcoat Polyamide, 130 degC min. MW -75 Type.	OBMW2	UL
Secondary winding used in T1	Furukawa Electric Co Ltd.	TEX-E	Rated 130 degC Triple insulated wire	OBJT2 (E206440)	UL
Bobbin used in T1	HITACHI CHEMICAL CO LTD	CP-J-8800	Phenolic, rated V-0, 150 degC, min 0.39 mm thick	QMFZ2 (E42956)	UL
Insulation Tape used in T1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F	Rated 130 degC	OANZ2 (E17385)	UL
Insulation Tape wrapping over transformer	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F	Rated 130 degC. Min. two layers, minimum 22 mm width.	OANZ2 (E17385)	UL
Varnish used in T1	KYOCERA CHEMICAL CORP	TVB2180T++	Rated 130 degC	OBOR2 (E83702)	UL
Varnish used in T1 - Alternate	HITACHI CHEMICAL CO LTD	WP-2952F-2G	Rated 130 degC	OBOR2 (E72979)	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
Tube	NIKKAN INDUSTRIES CO LTD	S-693-600	Rated 600V, 200 Degree C,	UZFT2 (E72406)	UL
Transformer (T1) - Alternate	XEPEX ELECTRONIC CO LTD	GT-3005001 for 5-7.5V GT-3009001 for 7.6V to 10.5V GT-3012001 for 10.6V to 14.5V GT-3015001 for 14.6V to 19.5V GT-3024001 for 19.6V to 24V GT-3048001 for 24.1V to 48V	(OBJY2) Class B insulation system, (E140166), designated SPB-6. Open type construction with ferrite core. See enclosed illustration ID 4-11 for construction.	-	-
Primary winding used in T1	Various	Various	Polyurethane with or without overcoat Polyamide, 130 degC min. MW -75 or MW28 Type.	OBMW2	UL
Secondary winding used in T1	Furukawa Electric Co Ltd.	TEX-E	Rated 130 degC Triple insulated wire	OBJT2 (E206440)	UL
Bobbin used in T1	HITACHI CHEMICAL CO LTD	CP-J-8800	Phenolic, rated V-0, 150 degC, min 0.39 mm thick	QMFZ2 (E42956)	UL
Insulation Tape used in T1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F(#), (#) is replaced with suffix B-1, B-2, W-1, W-2, Y-1 or Y-2	Rated 130 degC	OANZ2 (E17385)	UL
Insulation Tape wrapping over transformer	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F(#), (#) is replaced with suffix B-1, B-2, W-1, W-2, Y-1 or Y-2	Rated 130 degC. Min. two layers, minimum 22 mm width.	OANZ2 (E17385)	UL
Varnish used in T1	KYOCERA	TVB2180T++	Rated 130 degC	OBOR2 (E83702)	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
	CHEMICAL CORP				
Varnish used in T1 - Alternate	HITACHI CHEMICAL CO LTD	WP-2952F-2G	Rated 130 degC	OBOR2 (E72979)	UL
Tube	NIKKAN INDUSTRIES CO LTD	E651U-1	Rated 300V, 200 Degree C, VW-1	YDTU2 (E88468)	UL
Tube - Alternate	NIKKAN INDUSTRIES CO LTD	S-693-600	Rated 600V, 200 Degree C, VW-1	UZFT2 (E72406)	UL
Tube - Alternate	NIKKAN INDUSTRIES CO LTD	S-693F-1, S-693VF-1	Rated 300V, 200 Degree C, VW-1	UZIQ2 (E55258)	UL
Tube - Alternate	SUMITOMO ELECTRIC FINE POLYMER INC	Sumitube F2	Rated 600V, 125 degC, VW-1	YDPU2 (E48762)	UL
Tube - Alternate	ZEUS INDUSTRIAL PRODUCTS INC	TFE-TW-300	Rated 300V, 200degC, VW-1	YDPU2 (E64007)	UL
Tube - Alternate	FURUKAWA ELECTRIC CO LTD	PI-Tube	Rated 600V, 200degC, VW-1.	YDTU2 (E58401)	UL
Transformer (T1) - Alternate	Shan Dong Boam Electric Co Ltd	GT-3005001 for 5-7.5V GT-3009001 for 7.6V to 10.5V GT-3012001 for 10.6V to 14.5V GT-3015001 for 14.6V to 19.5V GT-3024001 for 19.6V to 24V GT-3048001 for 24.1V to 48V	(OBJY2) Class B insulation system, (E252329), designated BOAM. Open type construction with ferrite core. See enclosed illustration ID 4-12 for construction.	-	-
Primary winding used in	Various	Various	Polyurethane with or without overcoat Polyamide,	OBMW2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
T1			130 degC min. MW -75 or MW28 Type.		
Secondary winding used in T1	Furukawa Electric Co Ltd.	TEX-E	Rated 130 degC Triple insulated wire	OBJT2 (E206440)	UL
Bobbin used in T1	HITACHI CHEMICAL CO LTD	CP-J-8800	Phenolic, rated V-0, 150 degC, min 0.39 mm thick	QMFZ2 (E42956)	UL
Insulation Tape used in T1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F(#), (#) is replaced with suffix B-1, B-2, W-1, W-2, Y-1 or Y-2	Rated 130 degC	OANZ2 (E17385)	UL
Insulation Tape wrapping over transformer	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F(#), (#) is replaced with suffix B-1, B-2, W-1, W-2, Y-1 or Y-2	Rated 130 degC. Min. two layers, minimum 22 mm width.	OANZ2 (E17385)	UL93947
Varnish used in T1	Noroo Paint & Coatings Co Ltd	DVB-2085	Rated 130 degC	OBOR2 (E93947)	UL
Tube in T1	Great Holding Industrial Co Ltd	TFL	Rated 150V, 200 Degree C, VW-1	YDTU2 (E156256)	UL
Opto-couplers (U2)	Everlight Electronics Co Ltd	EL817	Rated min. 110degC Provide min 5000Vac isolation test voltage rating.	FPQU2/8 (E214129)	UL
Opto-couplers (U2) - Alternate	Cosmo Electroncis Corp	K1010, KP1010	Rated min. 115degC Provide min 5000Vac isolation test voltage rating.	FPQU2/8 (E169586)	UL
Opto-couplers (U2) - Alternate	Lite-On Technology Corp.	LTV-357T LTV357 LTV-817	Rated min. 115degC Provide min 3750Vac isolation test voltage rating.	FPQU2/8 (E113898)	UL
Opto-couplers (U2) - Alternate	Fairchild	H11A817B, F0D817B	Rated min. 110degC Provide min 5000Vac isolation test voltage rating.	FPQU2/8 (E90700)	UL
Heat Sink - HS1	--	--	Aluminium. Shaped as shown. Secured to PWB by soldering. See ID4-18 for	-	-

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
			dimension		
Heat Sink - HS2 (For Desktop Construction only)	--	--	Aluminium. Shaped as shown. Secured to PWB by soldering. See ID 4-19 for dimension	-	-
Heat Sink – HS2 (Alternate) (For Open Frame and Encapsulation construction and model GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	--	--	Aluminium. Shaped as shown. Secured to PWB by soldering. See ID 4-21 for dimension	-	-
Insulation tape provided on HS2 (For Desktop Construction only)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350T-1	Provided between primary component C2, C7, CX1, U2 and HS2. Overall measured 42 mm by 18 mm.	OANZ2 (E17385)	UL
Insulation tape provided on HS2 (For Open Frame and Encapsulation and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350T-1	Provided between primary component C2, C7, CX1, U2 and HS3. Overall measured 42 mm by 18 mm.	OANZ2 (E17385)	UL
Insulation tape provided on HS2 (For Open Frame and Encapsulation and models GTM91128LI1CEL,	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F, 1350-1	Provided between primary component C2, C7, CX1, U2 and HS3. Overall measured 42 mm by 18 mm. Min 3 layers or 3 wraps.	OANZ2 (E17385)	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
GTM91128LI2CEL and GTM91128LI3CEL only) - Alternate					
Insulation tape provided on HS2 (For Open Frame and Encapsulation and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only) - Alternate	Symbio Inc	35660Y	Provided between primary component C2, C7, CX1, U2 and HS3. Overall measured 42 mm by 18 mm. Min 3 layers or 3 wraps.	OANZ2 (E50292)	UL
Insulation tape provided on HS2 (For Open Frame and Encapsulation and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only) - Alternate	Shang Shu Liang Yi Tape Industry Co Ltd	LY-20	Provided between primary component C2, C7, CX1, U2 and HS3. Overall measured 42 mm by 18 mm. Min 3 layers or 3 wraps.	OANZ2 (E246820)	UL
DC output cord (For Desktop construction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)	Various	Various	Rated min 60V, 24AWG min, 80degC marked with VW-1	AVLV2/8	UL, cUL
Input connector (For Open Frame Construction only)	Various	Various	Constructed with thermoplastic (QMFZ2), rated min V-2.	--	--
Label (Provided if not using engraving or	Dongguan Xianquan Printing Co Ltd	Type XQ03	Rated min 80 deg C Suitable for use on the plastic enclosure	PGDQ2 (MH27594)	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
silkscreen)					
Label (Provided if not using engraving or Silkscreen) - Alternate	Fan JA Paper Printing Co Ltd	Type FJ-03-1	Rated min 80 deg C Suitable for use on the plastic enclosure	PGDQ2 (MH19546)	UL
Label (Provided if not using engraving or Silkscreen) - Alternate	Fan JA Paper Printing Co Ltd	Type FJ07	Rated min 80 deg C Suitable for use on the plastic enclosure	PGDQ2 (MH19546)	UL
Label (Provided if not using engraving or Silkscreen) - Alternate	Dongguan Xianquan Printing Co Ltd	Type XQ004-B	Rated min 80 deg C Suitable for use on the plastic enclosure	PGJ12 (MH47303)	UL
Label (Provided if not using engraving) - Alternate	E-Lin Adhesive Label Co Ltd	Type EL-15	Rated min 80 deg C Suitable for use on the plastic enclosure	PGDQ2 (MH45549)	UL
PWB	Various	Various	Min V-1, 130 degC.	ZPMV2/8	UL
Thermal Pad (For Desktop construction only)	Pioneer Material Precision Tech	PMP-P-300	Provided between Transformer and Heatsink. Rated V-0, 150 degC. Overall measured 50mm by 38 mm, 1.5 mm thick	QMFZ2 (E153203)	UL
Insulator (Optional) (For Desktop construction only)	SKC Co LTD	SH71S	Provided between PWB and Enclosure. Rated VTM-2, 105 degC. Overall measured 91.07mm by 39.72 mm, 0.43 mm thick	QMFZ2 (E74359)	UL
Encapsulation (For Encapsulation construction only)	Dong Guan Shi Pai Hua Chuang Material FTY	808A/B	Rated V-0, 90 degC.	QMFZ2	UL

Enclosures

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Collateral		
Particular		
Photographs	3-01	External View 1 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-02	External View 2 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-03	Bottom View of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-04	Internal View 1 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-06	Internal View 2 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-07	PWB Component Side 1 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-10	PWB Component Side 2 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-11	PWB Layout Side of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-12	External View of Model GTM91120-WWVV-X.X-T3A series
Photographs	3-13	Internal View 1 of Model GTM91120-WWVV-X.X-T1 series
Photographs	3-14	Internal View 2 of Model GTM91120-WWVV-X.X-T2 series
Photographs	3-15	Top View of GTM91120-WWVV-X.X-P2 series
Photographs	3-16	PWB component side of Model GTM91120-WWVV-X.X-P2 series
Photographs	3-17	PWB Layout side of Model GTM91120-WWVV-X.X-P2 and GTM91120-WWVV-X.X-P3 series
Photographs	3-18	PWB Component Side of Model GTM91120-WWVV-X.X-FW series
Photographs	3-19	PWB Layout side of Model GTM91120-WWVV-X.X-FW and GTM91120-WWVV-X.X-F series
Photographs	3-20	PWB component side of Model GTM91120-WWVV-X.X-P3 series
Photographs	3-21	PWB component side of Model GTM91120-WWVV-X.X-F series
Photographs	3-22	Overall review of Models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL.
Photographs	3-23	Internal View of models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL.
Photographs	3-24	PWB component side of GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL.
Photographs	3-25	PWB Layout side of GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL.
Diagrams	4-11	T1 specification
Diagrams	4-12	Choke LF1 specification
Diagrams	4-18	Heatsink 1 dimension drawing

Diagrams	4-19	Heatsink 2 (for Desktop Construction only) dimension drawing
Diagrams	4-21	Heatsink 2 (for Open frame and Encapsulation for struction and models GTM91128LI1CEL, GTM91128LI2CEL and GTM91128LI3CEL only)
Diagrams	4-22	T1 Specification from Shandong Boam Electric Co Ltd
Schematics + PWB	5-01	PWB Layout of Desktop and Encapsulation Construction
Schematics + PWB	5-05	PWB Layout of Open Frame Construction
Schematics + PWB	5-06	PWB Layout of model GTM91128LI1CEL, GTM91128LI2CELand GTM91128LI3CEL
Manuals		
Miscellaneous	7-06	Output List GTM91120-WVVV-X.X-AB series

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

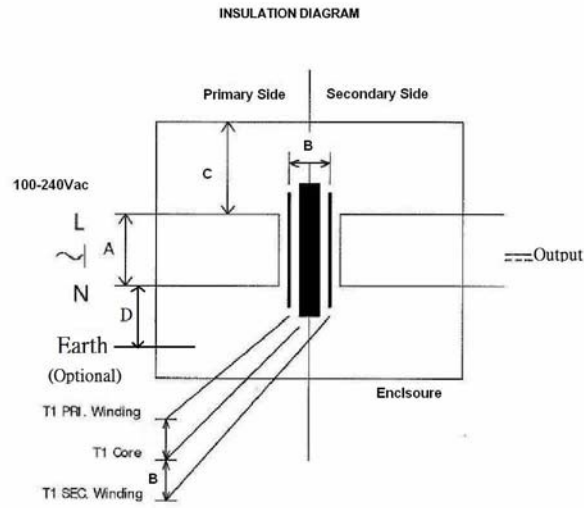
3	GENERAL REQUIREMENTS		Pass
3.1	Equipment when transported, stored, installed, operated in normal use and maintained according to the instructions of the manufacturer, causes no safety hazard which could reasonably be foreseen and which is not connected with its intended application in normal condition (N.C.) and in single fault condition (S.F.C.)		Pass
3.4	An alternative means of construction is used to that detailed in this standard and it can be demonstrated that an equivalent degree of safety is obtained		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

5	CLASSIFICATION		Pass
5.1	Type of protection against electric shock		Pass
	Class I equipment		N/A
	Class II equipment		Pass
	Internally powered equipment		N/A
5.2	Degree of protection against electric shock		Pass
	Type B applied part		N/A
	Type BF applied part		N/A
	Type CF applied part		N/A
	Not classified - no applied parts	Adaptor is not an end product and is intended to supply medical electrical system by its output. No applied parts.	Pass
5.3	Classification according to the degree of protection against ingress of water as detailed in the current edition of IEC 529 (see 6.1.1)..... :	Ordinary equipment. No protection against ingress of water provided.	Pass
5.4	Methods of sterilization or disinfection	To be determined in the end product.	N/A
5.5	Equipment not suitable for use in the presence of flammable mixtures		Pass
	Category AP equipment	Not AP equipment	N/A
	Category APG equipment	Not APG equipment	N/A
5.6	Mode of operation:		Pass
	-continuous operation		Pass
	-short-time operation, specified operation; period. :		-
	-intermittent operation, specified operation; rest period..... :		-
	-continuous operation with short-time, stated permissible loading time :		-
	-continuous operation with intermittent, stated permissible loading/rest time :		-

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

INSULATION DIAGRAM



IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE: to insulation diagram							
Area	Insulation type: operational / basic / supplementary / double / reinforced	Referenc e voltage (V)	Required creepage (mm)	Required clearance (mm)	Measured creepage (mm)	Measured clearance (mm)	Remarks
(A)	BOP	240 V rms	3.0	1.6	4.3	4.3	A-f: L-N before fuse
(B)	DI/RI	240 V rms	8.0	5.0	21.3	14.5	A-a2: T1 Primary to Secondary
(B)	DI/RI	240 V rms	8.0	5.0	17	10.3	A-a2: T1 Pin 1(Primary) to R21 (Secondary)
(B)	DI/RI	240 V rms	8.0	5.0	8.0	8.0	A-a2: U2 Primary pin to Secondary pin
(B)	DI/RI	240 V rms	8.0	5.0	12	9.5	A-a2: CY1 Primary pin to Secondary pin
(C)	DI/RI	240 V rms	8.0	5.0	20.0	6.0	A-a2:Primary circuit - Enclosure (For desk top model)
(D)	BI	240Vrms	4.0	2.5	5.0	5.0	A-a1: Inlet Earth pin - L/N pin

INSULATION DIAGRAM CONVENTIONS

Insulation diagram is a graphical representation of equipment insulation barriers, protective impedance and protective earthing. If feasible, use the following conventions to generate the diagram:

1. All isolation barriers are identified by letters between separate parts of diagram, for example separate transformer windings, optocouplers, wire insulation, creepage and clearance distances.
2. Parts connected to earth with large dots are protectively earthed. Other connections to earth are functional.
3. Applied parts are extended beyond the equipment enclosure and terminated with an arrow.
4. Parts accessible to the operator only are extended outside of the enclosure, but are not terminated with an arrow.
5. Blocks containing the letter "Z" indicate protective impedance.
6. Operational Insulation (OP) - indicates insulation that may be required for function of the equipment, but is not required or relied on for compliance with the requirements of clauses 17, 20 and 57.

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

6	IDENTIFICATION, MARKING AND DOCUMENTS		Pass
6.1	Marking on the outside of equipment or equipment parts		Pass
6.1c	Markings of the specific power supply affixed		N/A
6.1d	If marking is not practicable due to size or nature of enclosure, information is included in accompanying documents		N/A
6.1e	Name and/or trademark of the manufacturer or supplier	"Globtek (Hong Kong) Ltd" or "E341350"	Pass
6.1f	Model or type reference.....	See Cover page	Pass
6.1g	Rated supply voltages or voltage range(s)	100-240Vac	Pass
	Number of phases	Single phases	Pass
	Type of current	AC	Pass
6.1h	Rated frequency or rated frequency range(s) (Hz) :	50-60Hz	Pass
6.1j	Rated power input (VA, W or A)	1.5A	Pass
6.1k	Power output of auxiliary mains socket - outlets		N/A
6.1l	Class II symbol	Provided on product label for class II construction only	Pass
	Symbol for degree of protection against ingress of water provided	IPX0 for desktop construction only	N/A
	Symbol for protection against electric shock.....	No applied parts	N/A
	If equipment has more than one applied part with different degrees of protection, the relevant symbols are clearly marked on such applied parts, or on or near relevant outlets		N/A
	Symbol for protection of defibrillation-proof applied parts		N/A
	Symbol 14 from Table DI for defibrillation-proof with protection partly in patient cable		N/A
6.1m	Mode of operation (if no marking, suitable for continuous operation)	Continuous.	N/A
6.1n	Types and rating of external accessible fuses	Fuse is not accessible from the outside of the equipment	N/A
6.1p	Ratings of external output:.....	See Cover page	Pass
6.1q	Symbol for physiological effect(s):		N/A
	- attention, consult accompanying documents	Not used	N/A
	- non-ionizing radiation, or symbols as adopted by ISO or IEC 417		N/A
6.1r	Anaesthetic-proof symbol: AP or APG	Not AP or APG type	N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
6.1s	Dangerous voltage symbol		N/A
6.1t	Special cooling requirements		N/A
6.1u	Limited mechanical stability		N/A
6.1v	Protective packing requirement(s)		N/A
	- Marking(s) for unpacking safety hazard(s)		N/A
	- Equipment or accessories supplied sterile, marked as sterile		N/A
6.1y	Potential equalization terminal	Not such terminal provided	N/A
	- Functional earth terminal	Not such terminal provided	N/A
6.1z	Removable protective means		N/A
	Durability of marking test	(see appended table 6.1)	Pass
6.2	Marking on the inside of equipment or equipment parts		Pass
6.2a	Nominal voltage of permanently installed equipment	Not permanently installed equipment	N/A
6.2b	Maximum power loading for heating elements or holders for heating lamps	No such device provided	N/A
6.2c	Dangerous voltage symbol	No such device provided	N/A
6.2d	Type of battery and mode of insertion	No such components provided	N/A
	- Marking referring to accompanying documents used for battery not intended to be changed by the operator		N/A
6.2e	Fuses accessible with a tool identified either by type and rating or by a reference to diagram		N/A
6.2f	Protective earth terminal	Appliance inlet provided.	Pass
6.2g	Functional earth terminal		N/A
6.2h	Supply neutral conductor in permanently installed equipment (N)		N/A
6.2j	Markings required in 6.2 f), h), k), and l) remain visible after connection and are not affixed to parts which have to be removed		N/A
	- Markings comply with IEC 445		N/A
6.2k	For permanently connected devices the supply connections are clearly marked adjacent to the terminals (or in accompanying documents for small equipment)		N/A
6.2l	Statement for suitable wiring materials at temperatures over 75°C	Not permanently connected equipment.	N/A
6.2n	Capacitors and/or circuit parts marked as required in Sub-clause 15c		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
6.3	Marking of controls and instruments		N/A
6.3a	Mains switch clearly identified		N/A
	- ON and OFF positions marked according to Symbols 15 and 16 of table D1 or indicated by an adjacent indicator light	No Mains switch provided.	N/A
6.3b	Indication of different positions of control devices and switches		N/A
6.3c	Indication of the direction in which the magnitude of the function changes, or an indicating device		N/A
6.3f	The functions of operator controls and indicators are identified		N/A
6.3g	Numeric indications of parameters are in SI units except for units listed in Am. 2		N/A
6.4	Symbols		Pass
	Used symbols comply with Appendix D or IEC 417 and/or IEC 878 or ISO publications (if applicable)	In accordance with Appendix D.	Pass
6.5	Colors of the insulation of conductors		Pass
6.5a	Protective earth conductor has green/yellow insulation		Pass
6.5b	All insulations of internal protective earth conductors are green/yellow at least at their terminations		Pass
6.5c	Only protective or functional earthing, or potential equalization conductors are green/yellow		Pass
6.5d	Color of neutral conductor	Intergrated in PWB	N/A
6.5e	Colors of phase conductor(s)	Intergrated in PWB	N/A
	- Compliance with IEC 227 and IEC 245		N/A
6.5f	Additional protective earthing in multi-conductor, cords are marked green/yellow at the ends of the additional conductors		N/A
6.6	Medical gas cylinders and connections		N/A
6.6a	In accordance with ISO ISO/R 32		N/A
6.6b	Identification of connection point		N/A
6.7	Indicator lights and push-buttons		N/A
6.7a	Red indicator lights used exclusively to indicate a warning of danger and/or a need for urgent action		N/A
	- Yellow used to indicate caution or attention required		N/A
	- Green used to indicate ready for action		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
6.7b	Color red used only for push-buttons by which a function is interrupted in case of emergency		N/A
6.8	ACCOMPANYING DOCUMENTS		N/A
6.8.1	Equipment accompanied by documents containing at least instructions for use, a technical description and an address to which the user can refer	To be determined in end application.	N/A
	Classifications specified in Clause 5 included in both the instructions for use and the technical description		N/A
	Markings specified in Sub-clause 6.1 included in the accompanying documents if they have not been permanently affixed to equipment		N/A
	Warning statements and the explanation of warning symbols provided in the accompanying documents		N/A
6.8.2	Instructions for use		N/A
6.8.2a	General information provided in instructions for use		N/A
	- state the function and intended application of the equipment		N/A
	- include an explanation of: the function of controls, displays and signals		N/A
	- the sequence of operation		N/A
	- the connection and disconnection of detachable parts and accessories		N/A
	- the replacement of material which is consumed during operation		N/A
	- information regarding potential electromagnetic or other interference and advice regarding avoidance		N/A
	- include: indications of recognized accessories, detachable parts and materials, if the use of other parts or materials can degrade minimum safety		N/A
	- instructions concerning cleaning, preventive inspection and maintenance to be performed including the frequency of such maintenance		N/A
	General information provided in instructions:		N/A
	- information for the safe performance of routine maintenance		N/A
	- parts on which preventive inspection and maintenance shall be performed by other persons including the periods to be applied		N/A
	- explanation of figures, symbols, warning statements and abbreviations on the equipment		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
6.8.2c	Signal output or signal input parts intended only for connection to specified equipment described		N/A
6.8.2d	Details about acceptable cleaning, disinfection or sterilization methods included		N/A
6.8.2e	Warning statement for mains operated equipment with additional power source		N/A
6.8.2f	A warning to remove primary batteries if equipment is not likely to be used for some time		N/A
6.8.2g	Instructions to ensure safe use and adequate maintenance of rechargeable batteries		N/A
6.8.2h	Identification of specified external power supplies or battery chargers necessary to ensure compliance with the requirements of IEC 601-1		N/A
6.8.2j	Identification of any risks associated with the disposal of waste products, residues, etc.		N/A
	- Advice in minimizing these risks		N/A
6.8.3	Technical description		N/A
6.8.3a	All characteristics essential for safe operation provided		N/A
6.8.3b	Required type and rating of fuses utilized in the mains supply circuit external to permanently installed equipment		N/A
	- Instructions for replacement of interchangeable and/or detachable parts which are subject to deterioration during normal use		N/A
6.8.3c	Instructions or reference information for repair of equipment parts designated by the manufacturer as repairable provided		N/A
6.8.3d	Environmental conditions for transport and storage specified in accompanying documents and marked on packaging		N/A

7	POWER INPUT		Pass
	Power Input Measurements		Pass

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

10	ENVIRONMENTAL CONDITIONS		Pass
10.1	Equipment is capable while packed for transport or storage of being exposed to the conditions stated by the manufacturer	To be determined in end application.	N/A
10.2.2a	Rated voltage not exceeding 250 V for hand-held equipment	Not hand-held equipment	N/A
	Rated voltage not exceeding 250 V d.c. or single-phase a.c. or 500 V polyphase a.c. for equipment up to 4kVA	Single phase, 100-240 Vac.	Pass
	Rated voltage not exceeding 500 V for all other equipment		N/A
	Rated input frequency not more than 1kHz	50-60 Hz.	Pass
10.2.2b	Internal replaceable electrical power source specified		N/A

14	REQUIREMENTS RELATED TO CLASSIFICATION		Pass
14.4a	Class I and Class II equipment in addition to basic insulation provided with an additional protection		Pass
14.4b	Equipment supplied from external dc source of reverse polarity results in no safety hazard	AC power source	N/A
14.5a	Dual classification for internally powered equipment with a means of connection to supply mains	Not Internally powered equipment	N/A
14.5b	Internally powered equipment complies with requirements for Class I or Class II equipment while connected to supply mains, and with requirements for internally powered equipment when not connected	Not internally powered equipment.	N/A
14.6c	Applied parts intended for direct cardiac application are of type CF		N/A

15	LIMITATION OF VOLTAGE AND/OR ENERGY		Pass
15b	Voltage measured one sec after disconnection of the mains plug does not exceed 60V	(see appended table 15b)	Pass
15c	For live parts accessible after equipment has been de-energized the residual voltage does not exceed 60 V nor residual energy exceed 2 mJ		N/A
	Marking provided for manual discharging	Not manual discharging	N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

16	ENCLOSURES AND PROTECTIVE COVERS		Pass
16a	Equipment enclosed to protect against contact with live parts, and with parts which can become live (finger, pin, hook test)	Equipment is provided with plastic enclosure without any openings.	Pass
	Insertion or removal of lamps - protection against contact with live parts provided	No lamps	N/A
16b	Opening in a top cover positioned that accessibility of live parts by a test rod is prevented	No openings	N/A
16c	Conductive parts accessible after the removal of handles, knobs, levers		N/A
	- have a resistance of not more than 0.2 Ohm		N/A
	- separated from live parts by one of the means described in Sub-clause 17g		N/A
16d	Parts with voltage exceeding 25V a.c. or 60V d.c. which cannot be disconnected by external mains switch or plug protected against contact		N/A
16e	Removable enclosures protecting against contact with live parts		Pass
	- Removal possible only with the aid of a tool		Pass
	- Use of automatic device making parts not live when the enclosure is opened or removed		N/A
	- Exception 16e applied to the following parts..... :		N/A
16f	Openings for the adjustment of controls using a tool. The tool not able to touch basic insulation or any live parts		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
17	SEPARATION		Pass
17a	Separation method of the applied part from live parts:		N/A
	1) basic insulation: applied part earthed	No applied part.	N/A
	2) by protectively earthed conductive part (e.g. screen)		N/A
	3) by separate earthed intermediate circuit limiting leakage current to applied part in event of insulation failure		N/A
	4) by double or reinforced insulation		N/A
	5) by protective impedances limiting current to applied part		N/A
	- Additional leakage current test in single fault conditions		N/A
17c	There is no conductive connection between applied parts and accessible conductive parts which are not protectively earthed		N/A
17d	Supplementary insulation between hand-held flexible shafts and motor shafts (Class I)		N/A
17g	Separation method of accessible parts other than applied parts from live parts:		Pass
	1) basic insulation: accessible part earthed		N/A
	2) by protectively earthed conductive part (e.g. screen)		N/A
	3) by separate earthed intermediate circuit limiting leakage current to enclosure in event of insulation failure		N/A
	4) by double or reinforced insulation		Pass
	5) by protective impedances limiting current to accessible part		N/A
	- Additional leakage current test in single fault conditions		N/A
17h	Arrangements used to isolate defibrillation-proof applied parts so designed that:		N/A
	- no hazardous electrical energies appear during a discharge of a cardiac defibrillator		N/A
	- after exposure to the defibrillation voltage, the equipment continues to perform its intended function		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
18	PROTECTIVE EARTHING, FUNCTIONAL EARTHING AND POTENTIAL EQUALIZATION		N/A
18a	Accessible parts of Class I equipment separated from live parts by basic insulation connected to the protective earth terminal		N/A
18b	Protective earth terminals suitable for connection to the protective earth conductor	No accessible earthing conductor part.	N/A
18e	Potential equalization conductor		N/A
	- Readily accessible		N/A
	- Accidental disconnection prevented in normal use		N/A
	- Conductor detachable without the use of a tool		N/A
	- Power supply cord does not incorporate a potential equalization conductor		N/A
	- Connection means marked with Symbol 9, Table DI		N/A
18f	For equipment without power supply cord, impedance between protective earth terminal and accessible metal part ≤ 0.1 Ohm		N/A
	- For equipment with an appliance inlet, impedance between protective earth contact and any accessible metal part ≤ 0.1 Ohm		N/A
	- For equipment with a non-detachable power supply cord, impedance between protective earth pin in mains plug and accessible metal part ≤ 0.2 Ohm		N/A
18g	If the impedance of protective earth connections other than in Cl. 18 f) exceeds 0.1 Ohm, the allowable value of the enclosure leakage current is not exceeded in single fault condition		N/A
18k	Functional earth terminal not used to provide protective earthing		N/A
18l	Class II equipment with isolated internal screens		N/A
	- insulation of screens and all internal wiring connected to them is double insulation or reinforced insulation		N/A
	- functional earth terminal clearly marked		N/A
	- explanation of functional earth terminal provided in the accompanying documents		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

19	CONTINUOUS LEAKAGE CURRENTS AND PATIENT AUXILIARY CURRENTS		Pass
19.1b	Leakage currents	(see appended table 19)	Pass
	- earth leakage current		Pass
	- enclosure leakage current		Pass
	- patient leakage current		N/A
	- patient auxiliary current		N/A

20	DIELECTRIC STRENGTH		Pass
	Overall compliance with Clause 20	(see appended table 20)	Pass

21	MECHANICAL STRENGTH		Pass
21a	Sufficient rigidity of an enclosure tested by: force of 45 N		Pass
21b	Sufficient strength of an enclosure tested by: impact hammer	Test covered by Ball Impact, see Sub-clause 55, Ball Drop Test.	Pass
21c	On portable equipment carrying handles or grips withstand the requirements of the loading test		N/A
21.3	No damage to parts of patient support and/or immobilization system after the loading test		N/A
21.5	Hand held equipment or equipment parts are safe after drop test		N/A
21.6	Portable and mobile equipment is able to withstand rough handling		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

22	MOVING PARTS		N/A
22.2a	Moving parts of a transportable equipment are provided with guards which form an integral part of the equipment	No such parts.	N/A
22.2b	Moving parts of a stationary equipment are provided with similar guards as above, unless it is evident that equivalent protection is separately provided during installation		N/A
22.3	Cords (ropes), chains and bands are provided with guides to prevent them from running off or from jumping out of their guiding devices		N/A
	Guides or other safeguards are removable only with a tool		N/A
22.4	Dangerous movements of equipment parts, which may cause physical injury to the patient, are possible only by the continuous activation by the operator		N/A
22.6	Parts of equipment subject to mechanical wear are accessible for inspection		N/A
22.7	Means provided for emergency switching of an electrically produced mechanical movement which could cause a safety hazard		N/A
	The means for emergency switching is readily identifiable and accessible and does not introduce a further safety hazard		N/A
	Devices for emergency stopping able to break the full load current of the relevant circuit, taking into account possible stalled motor currents		N/A
	Means for stopping of movements operate as a result of one single action		N/A

23	SURFACES, CORNERS AND EDGES		Pass
	Rough surfaces, sharp corners and edges which may cause injury or damage avoided or covered	No rough surfaces, sharp corners or sharp edges.	Pass

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

24	STABILITY IN NORMAL USE (see appended table 24)		N/A
24.1	Equipment does not overbalance during normal use when tilted through an angle of 10°		N/A
24.3	Equipment overbalances when tilted through an angle of 10°		N/A
	- does not overbalance when tilted through an angle of 5° in any position excluding transport		N/A
	- carry a warning notice stating that transport should only be undertaken in a certain position		N/A
	- in the position specified for transport does not overbalance when tilted to an angle of 10°		N/A
24.6a	Equipment or its parts with a mass of more than 20 kg is provided with:		N/A
	- suitable handling devices (grips etc.), or		N/A
	- instructions for lifting and handling during assembly		N/A
24.6b	On portable equipment with a mass of more than 20 kg carrying handle(s) is (are) so situated that equipment may be carried by 2 or more persons		N/A

25	EXPELLED PARTS		N/A
25.1	Protective means are provided where expelled parts of the equipment could be a hazard		N/A
25.2	Display vacuum tubes with a face dimension exceeding 16 cm are provided with adequate protection against implosion		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

28	SUSPENDED MASSES		N/A
28.3	Suspension system with safety device		N/A
	Safety device provided where the integrity of a suspension depends on parts which may have hidden defects, or on parts having safety factors not complying with Sub-clause 28.4		N/A
	Safety device has safety factors complying with Sub-clause 28.4.2		N/A
	Clear indication to the operator that the safety device has been activated after failure of suspension means		N/A
28.4	Suspension systems of metal without safety devices		N/A
	1) Total load does not exceed the safe working load		N/A
	2) Safety factors not less than 4 where it is unlikely that supporting characteristics will be impaired		N/A
	3) Safety factors not less than 8 where impairment is expected		N/A
	4) Safety factors multiplied by 1.5 for metal having an elongation at break of less than 5%		N/A
	5) Sheaves, sprockets, band wheels and guides so constructed that the safety factors maintained till replacement		N/A

29	X-RADIATION		N/A
29.2	EQUIPMENT not intended to produce X-radiation produces an exposure ≤ 130 nC/kg (0.5 mR)		N/A

36	ELECTROMAGNETIC COMPATIBILITY		N/A
	Equipment complies with IEC 601-1-2	Not evaluated by Underwriters Laboratories Inc.	N/A

37	COMMON REQUIREMENTS FOR CATEGORY AP AND CATEGORY APG EQUIPMENT		N/A
	Requirements for category AP and APG equipment (Cl. 37 - 41)		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

42	EXCESSIVE TEMPERATURES		Pass
42.1	Equipment does not attain temperatures exceeding the values given in Table Xa over the range of ambient temperatures per Clause 10.2.1	(see appended table 42)	Pass
42.2	Equipment does not attain temperatures exceeding the values given in Table Xb at 25°C ambient	(see appended table 42)	Pass
42.3	Applied parts not intended to supply heat have surface temperatures not exceeding 41°C		N/A
42.5	Guards to prevent contact with hot surfaces removable only with a tool	No such parts.	N/A

43	FIRE PREVENTION		Pass
	Strength and rigidity necessary to avoid a fire hazard	Strength and rigidity of the enclosure was tested according to clause 21. For material sources refer to appended to table 56.	Pass

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
44	OVERFLOW, SPILLAGE, LEAKAGE, HUMIDITY, INGRESS OF LIQUIDS, CLEANING, STERILIZATION AND DISINFECTION		Pass
44.2	Equipment contain a liquid reservoir:		N/A
	- the equipment is electrically safe after 15% overfill steadily over a period of 1 min		N/A
	- transportable equipment is electrically safe after additionally having been tilted through an angle of 15° in the least favorable direction(s) (if necessary with refilling)		N/A
44.3	Electrical properties of the equipment do not change in connection of spillage test (200 ml of water)		N/A
44.4	Liquid which might escape in a single fault condition does not wet parts which may cause a safety hazard		N/A
44.5	Equipment sufficiently protected against the effects of humidity	(see appended table 44)	Pass
44.6	Enclosures designed to give a protection against harmful ingress of water classified according to IEC Publication 529	Ordinary protection (IPX0) only considered. Other IP must be considered in end use.	N/A
44.7	Equipment capable of withstanding cleaning, sterilization or disinfection without deterioration of safety provisions		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

45	PRESSURE VESSELS AND PARTS SUBJECT TO PRESSURE		N/A
45.2	Pressure vessel with pressure volume greater than 200 kPa x l and pressure greater than 50 kPa withstand the hydraulic test pressure		N/A
45.3	Maximum pressure does not exceed the maximum permissible working pressure for individual parts		N/A
45.7	Unless excessive pressure can not occur, pressure-relief device provided		N/A
45.7a	a) Pressure-relief device connected as close as possible to the pressure vessel		N/A
45.7b	b) Readily accessible for inspection		N/A
45.7c	c) Not capable of being adjusted or rendered inoperative without a tool		N/A
45.7d	d) Discharge opening located that the released material is not directed towards person		N/A
45.7e	e) Discharge opening located that operation will not deposit material which may cause a safety hazard		N/A
45.7f	f) Adequate discharge capacity to ensure pressure does not exceed the maximum permissible working pressure		N/A
45.7g	g) No shut-off valve between a pressure-relief device and the parts intended to be protected		N/A
45.7h	h) Minimum number of cycles of operation: 100.000		N/A

48	BIOCOMPATIBILITY		N/A
	Parts of equipment and accessories intended to come into contact with biological tissues, cells or body fluids are evaluated in accordance with ISO 10993-1	Not evaluated by Underwriters Laboratories Inc.	N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

49	INTERRUPTION OF THE POWER SUPPLY		N/A
49.1	Thermal cut-outs and over-current releases with automatic resetting not used if they may cause a safety hazard	No automatic resetting devices.	N/A
49.2	Interruption and restoration of power supply does not result in a safety hazard other than interruption of intended function		N/A
49.3	Means are provided for removal of mechanical constraints on patient in case of a supply mains failure		N/A

51	PROTECTION AGAINST HAZARDOUS OUTPUT		N/A
51.4	Equipment furnishing both low-intensity and high-intensity outputs provided with means minimizing possibility of a high intensity output being selected accidentally		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

52	ABNORMAL OPERATION AND FAULT CONDITIONS		Pass
52.1	Equipment is so designed and manufactured that even in single fault condition no safety hazard as described under 52.4 exists (see 3.1 and Cl. 13)	(see appended table 52)	Pass
	The safety of equipment incorporating programmable electronic systems is checked by applying IEC 601-1-4		N/A
52.5.2	Failure of thermostats presents no safety hazards	No thermostats presents	N/A
52.5.3	Short-circuiting of either part of double insulation presents no safety hazard	(see appended table 19)	Pass
52.5.5	Impairment of cooling: temperatures not exceeding 1.7 times the values of Clause 42 minus 17.5°C	No opening	N/A
52.5.6	Locking of moving parts presents no safety hazard	No moving parts	N/A
52.5.7	Interruption and short-circuiting of motor capacitors presents no safety hazard	No such components used	N/A
52.5.8	Duration of motors locked rotor test in compliance with Cl. 52.5.8		N/A
52.5.9	Failure of one component at a time presents no safety hazard	(see appended table 52)	Pass
52.5.10	Overload of heating elements presents no safety hazard	No such components used	N/A
52.5.10f	Motors intended to be remotely controlled, automatically controlled, or liable to be operated continuously provided with running overload protection	No such components used	N/A
52.5.10h	Equipment with three-phase motors can safely operate with one phase disconnected		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
56	COMPONENTS AND GENERAL ASSEMBLY		Pass
	List of critical components		Pass
56.1b	Ratings of components not in conflict with the conditions of use in equipment	The components are used according to their ratings.	Pass
	Ratings of mains components are identified		Pass
56.1d	Components, movements of which could result in a safety hazard mounted securely		Pass
56.1f	Conductors and connectors secured and/or insulated to prevent accidental detachment resulting in a safety hazard	Internal wire is secured and/or Insulated to prevent accidental detachment resulting in a safety hazards.	Pass
56.3a	Connectors provide separation required by Sub-clause 17g		N/A
	Plugs for connection of patient circuit leads can not be connected to other outlets on the same equipment		N/A
	Medical gas connections not interchangeable		N/A
56.3b	Accessible metal parts can not become live when detachable interconnection cord between different parts of equipment is loosened or broken		N/A
56.3c	Leads with conductive connection to a patient are constructed such that no conductive connection remote from the patient can contact earth or hazardous voltages.		N/A
56.4	Connections of capacitors		Pass
	Not connected between live parts and non-protectively earthed accessible parts		Pass
	If connected between mains part and protectively earthed metal parts comply with: IEC Publication 384-14		Pass
	Enclosure of capacitors connected to mains part and providing only basic insulation, is not secured to non-protectively earthed metal parts		Pass
	Capacitors or other spark-suppression devices are not connected between contacts of thermal cut-outs		N/A
56.5	Protective devices which cause disconnection from the supply mains by producing a short-circuit not provided in equipment		Pass
56.6	Temperature and overload control devices		N/A
56.6a	Thermal cut-outs which have to be reset by a		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	soldering not fitted in equipment		
	Thermal safety devices provided where necessary to prevent operating temperatures exceeding the limits		N/A
	Audible warning provided where the loss of function caused by operation of a thermal cut-out presents a safety hazard		N/A
	Self-resetting thermal cut-outs and self-resetting over-current releases operated 200 times		N/A
	Non-self resetting over-current releases operated 10 times		N/A
	Independent non-self-resetting thermal cut-out provided where a failure of a thermostat could constitute a safety hazard		N/A
56.6b	Thermostats with varying temperature settings clearly indicated		N/A
	Operating temperature of thermal cut-outs indicated		N/A
56.7	Batteries		N/A
56.7a	Battery compartments:		N/A
	- adequately ventilated		N/A
	- accidental short-circuiting is prevented		N/A
56.7b	Incorrect polarity of connection prevented		N/A
56.8	Indicators - unless indication provided by other means (from the normal operation position), indicator lights are used (color see 6.7):		N/A
	- to indicate that equipment is energized		N/A
	- to indicate the operation of non-luminous heaters if a safety hazard could result		N/A
	- to indicate when output exists if a safety hazard could result		N/A
	- charging mode indicator provided		N/A
56.10	Actuating parts of controls		N/A
56.10b	Actuating parts are adequately secured to prevent them from working loose during normal use		N/A
	Controls are secured to prevent the movement relative to scale marking (safety related only)		N/A
	Detachable indicating devices are prevented from incorrect connection without the use of tool		N/A
56.10c	Stops are provided on rotating controls:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- to prevent an unexpected change from maximum to minimum or vice versa where this could produce a safety hazard		N/A
	- to prevent damage to wiring		N/A
56.11	Cord-connected hand-held and foot-operated control devices		N/A
56.11a	Contain voltages not exceeding 25 V a.c. or 60 V d.c. and isolated from the mains part by Cl. 17g		N/A
56.11b	Hand-held control devices comply with the requirement and test of Sub-clause 21.5		N/A
	- Foot-operated control devices designed to support the weight of an adult human being		N/A
56.11c	Devices not change their setting when inadvertently placed		N/A
56.11d	Foot-operated control devices are at least IPX 1		N/A
	- For surgical use, electrical switching parts are IPX 8		N/A
56.11e	Adequate strain relief at the cord entry provided		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
57	MAINS PARTS, COMPONENTS AND LAYOUT		Pass
57.1	Isolation from supply mains		Pass
57.1a	Equipment provides means to isolate its circuits electrically from the supply mains on all poles simultaneously	Appliance inlet provided as disconnecting device.	Pass
	Means for isolation incorporated in equipment or, if external, specified in the accompanying documents		N/A
57.1d	Switches used to comply with Sub-clause 57.1a comply with the creepage distances and air clearances as specified in IEC Publication 328	No switches.	N/A
57.1f	Mains switches not incorporated in a power supply cord	No switches.	N/A
57.1h	Appliance couplers and flexible cords with mains plugs provide compliance with Sub-clause 57.1a		Pass
57.1m	Fuses and semiconductor devices not used as isolating devices		Pass
57.2	Mains connectors and appliance inlets		Pass
57.2e	Auxiliary mains socket-outlets on non-permanently installed equipment of a type that cannot accept a mains plug		N/A
57.2g	Unless functional earth needs to be provided, Class I appliance inlet is not used in Class II equipment		Pass
57.3	Power supply cords		N/A
57.3a	Not more than one connection to a particular supply mains	Investigated in the end product	N/A
	If alternative supply allowed, no safety hazards when more than one connection is made simultaneously		N/A
	The mains plug has only one power supply cord		N/A
	Non-permanently connected equipment provided with power supply cord or appliance inlet		N/A
57.3b	Power supply cords sufficiently robust to comply with the requirements of IEC 227, designation 53 and IEC 245, designation 53		N/A
	Polyvinyl chloride insulated power supply cords not used for equipment having external metal parts with a temperature exceeding 75°C		N/A
57.3c	Nominal cross-sectional area of conductors of power supply cords not less than in Table XV		N/A
57.3d	Stranded conductors not soldered if fixed by any		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	clamping means		
57.4	Connection of power supply cords		N/A
57.4a	Cord anchorages		N/A
	Equipment provided with power supply cords has cord anchorages such that the conductors are relieved from strain, including twisting		N/A
	Tying the cord into a knot or tying the ends with string not used		N/A
	Cord anchorages made of insulating material or metal insulated from unearthed accessible metal parts by supplementary insulation		N/A
	Cord anchorages made of metal provided with an insulating lining		N/A
	Clamping screws do not bear directly on the cord insulation		N/A
	Screws associated with cable replacement are not used to secure other components		N/A
	Conductors of the power supply cord arranged that the protective earth conductor is not subject to strain as long as the phase conductors are in contact with their terminals		N/A
57.4b	Power supply cord protected against excessive bending		N/A
57.4c	Adequate space inside equipment to allow the supply cable conductors to be introduced and connected		N/A
57.5	Mains terminal devices and wiring of mains part		N/A
	Mains connected equipment other than those with a detachable supply cord provided with mains terminals, where connections are made with screws, nuts or equally effective methods		N/A
	If a conductor breaks away, barriers are provided such that creepage distances and air clearances cannot be reduced		N/A
	Screws and nuts which clamp external conductors not serve to fix any other component		N/A
57.5b	Terminals closely grouped with any protective earth terminal		N/A
	Mains terminal devices accessible only with use of a tool		N/A
	Mains terminal devices located or shielded that,		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	should a wire of a stranded conductor escape when the conductors are fitted, there is no risk of accidental contact		
57.5c	Internal wiring not subjected to stress when the means for clamping the conductors are tightened or loosened		N/A
57.5d	Cord terminals not require special preparation of the conductor		N/A
57.6	Mains fuses and overcurrent releases		Pass
	Fuses or over-current releases provided accordingly for Class I and Class II	F1, F2 are provided for each conductor.	Pass
	Current rating of mains fuses and over-current releases such that they reliably carry the normal operating current		Pass
	Protective earth conductor not fused		N/A
	Neutral conductor not fused for permanently installed equipment		N/A
57.8	Wiring of the mains part		Pass
57.8a	Individual conductor in the mains part with insulation not at least electrically equivalent to that of the individual conductors of flexible supply cords complying with IEC Publications 227 or 245, treated as bare conductor		Pass
57.8b	Cross-sectional area of conductors up to protective device not less than the minimum required for the power supply cord		Pass
	Cross-sectional area of other wiring and the sizes of tracks on printed wiring circuits sufficient to prevent any fire hazard		Pass
57.9	Mains supply transformers		Pass
57.9.1	Overheating		Pass
	External to the transformer protective devices connected in such a way that failure of any component cannot render the protective devices inoperative		Pass
57.9.1a	Short-circuit of secondary windings not caused excessive temperature	(see appended table 57.9.1a)	Pass
57.9.1b	Overload of secondary windings not caused excessive temperature	(see appended table 57.9.1b)	Pass
57.9.2	The dielectric strength of the electrical insulation of a mains supply transformer such that it passes tests		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
57.9.4	Construction		Pass
57.9.4a	Separation of primary and secondary windings	Double Insulation provided.	Pass
	- separate bobbins or formers		N/A
	- one bobbin with insulating partition		N/A
	- one bobbin with concentric windings and having copper screen with a thickness of not less than 0.13 mm		N/A
	- concentrically wound on one bobbin with windings separated by double insulation		Pass
57.9.4c	Means provided to prevent displacement of end turns		Pass
57.9.4d	Insulated overlap of not less than 3 mm if a protective earthed screen has only one turn		N/A
57.9.4e	Insulation between the primary and secondary in transformers with double insulation		Pass
	- 1 insulation layer having a thickness of at least 1 mm		N/A
	- at least 2 insulation layers with a total thickness of at least 0.3 mm		N/A
	- three layers provided that each combination of two layers can withstand the dielectric strength test for reinforced insulation		Pass
57.9.4g	Exit of the wires of toroidal transformers provided with double sleeving complying with requirements for double insulation and having total thickness at least 0.3 mm extending at least 20 mm outside the winding		N/A
57.10	Creepage distances and air clearances		Pass
57.10a	Values: compliance with at least the values of Table XVI	(refer to insulation diagram)	Pass
	Creepage distances for slot insulation of motors at least 50% of the specified values		N/A
57.10b	Minimum creepage distances and air clearances in the mains part between parts of opposite polarity not required if short-circuiting does not produce a safety hazard	(see appended table insulation diagram)	Pass
57.10c	Creepage distances or clearances of at least 4 mm are maintained between defibrillation-proof applied parts and other parts		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

58	PROTECTIVE EARTHING - TERMINALS AND CONNECTIONS		N/A
58.1	Clamping means of the protective earth terminal		N/A
	Not be able to loosen without the aid of a tool		N/A
	Screws for internal earth connections are covered or protected against loosening from outside		N/A
58.7	Earth pin of the appliance inlet regarded as the protective earth terminal		N/A
58.8	The protective earth terminal not used for the mechanical connection or the fixing of any component not related to earthing		N/A
58.9	Where the protective earth connections are made via a plug or socket device the protective earth connection is made before and interrupted after the supply connections during connection and interrupting		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
59	CONSTRUCTION AND LAYOUT		Pass
59.1	Internal wiring		Pass
59.1a	Cables and wiring protected against contact with a moving part		N/A
	Wiring having basic insulation only protected by additional fixed sleeving		Pass
	Components are not likely to be damaged in the normal assembly or replacement of covers		Pass
59.1b	Movable leads are not bent around a radius of less than five times the outer diameter of the lead		N/A
59.1c	Insulating sleeving adequately secured		Pass
	If the sheath of a flexible cable or cord is used as supplementary insulation it complies with requirements of IEC 227 and IEC 245 and dielectric test		N/A
	Conductors subjected to temperatures exceeding 70°C have an insulation of heat-resistant material		N/A
59.1d	Aluminum wires of less than 16 mm ² cross-section not used		N/A
59.1f	Connecting cords between equipment parts considered as belonging to the equipment		N/A
59.2	Insulation		Pass
59.2b	Mechanical strength and resistance to heat and fires retained by all types of insulation		Pass
59.2c	Insulation not likely to be impaired by deposition of dirt or by dust resulting from wear of parts		N/A
	Parts of rubber resistant to ageing		N/A
59.3	Excessive current and voltage protection		N/A
	Internal electrical power source provided with device for protection against fire hazard		N/A
	Fuse elements replaceable without opening the enclosure fully enclosed in a fuseholder		N/A
	Protective devices between an isolated applied part and the body of the equipment do not operate below 500 V r.m.s.		N/A
59.4	Oil containers		N/A
	Oil containers adequately sealed		N/A
	Container allow for the expansion of the oil		N/A
	Oil containers in mobile equipment sealed to		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict
	prevent the loss of oil during transport		
	Partially sealed oil-filled equipment or equipment parts provided with means for checking the oil level		N/A

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E341350-A3-UL

Enclosure

National Differences

Canada
USA

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict

Canada - Differences to IEC 60601-1:1988 + A1:1991 + A2:1995			
6	Canadian difference to this clause no longer applicable		N/A
6.61	Point of connection of gas cylinders:		N/A
6.61	- is gas specific		N/A
6.61	- is non-interchangeable		N/A
6.61	- is identified		N/A
56.3a	Medical gas inlet connectors:		N/A
56.3a	- are gas specific		N/A
56.3a	- are non-interchangeable		N/A
56.3a	- are DISS type complying with CGA V-5		N/A
56.3a	- are configured to permit the supply from assemblies complying with CAN/CSA - Z5359-04 (replaces Z305.2)		N/A
56.6a	Where consequential loss of function caused by operation of a thermal cut-out presents a safety hazard, both visible and audible warnings provided		N/A
57.2g	Mains plug of non-permanent installed equipment:		N/A
57.2g	- if molded on type - hospital grade complying with CSA C22.2, No. 21		N/A
57.2g	- hospital grade disassembly type complying with CSA C22.2, No. 42		N/A
57.2g	- if Class II equipment - polarized hospital grade CSA configuration 1-15P	Investigated in the end product	N/A
57.3b	Detachable power supply cords:		N/A
57.3b	- unlikely to be detached accidentally		N/A
57.3b	- impedance of earth contacts presents no safety hazard		N/A
57.3b	- possibility of replacement by a cord which could make equipment hazards minimized		N/A
57.3b	- complies with CSA C22.2 NO. 21		N/A
57.3b	- not smaller than No. 18 AWG		N/A
57.3b	- minimum serviceability of Type SJ for mobile equipment or Type SV for other		N/A
57.9	Canadian difference to this clause no longer applicable		Pass
58.2	Protective earth connections comply with CSA		N/A

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict
	C22.2 No. 04		
59.1	Connecting cables comply with Canadian Electrical Code, Part I		N/A
60	Canadian difference to this clause no longer applicable		N/A

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict

USA - Differences to IEC 60601-1:1988 + A1:1991 + A2:1995			
1.1	Section 5 Safety hazards resulting from intended physiological function of and ionizing radiation resulting from equipment covered by this standard are not considered. Such equipment is subject to US FDA requirements and US Federal Radiation Standards (21CFR Part 1020) promulgated under the Radiation Control for Health and Safety Act of 1968.		N/A
2.4.1	High voltage X-Ray installations Long Time and Momentary ratings definitions Clause 6, 6.2 and product markings shall agree with the NEC.		N/A
2.10.100	X-Ray INSTALLATIONS (MOMENTARY RATING): A rating based on an operating interval that does not exceed 5 secs. (See also 2.10DV.13 in UL 60601-1)		N/A
2.10.101	X-Ray INSTALLATIONS (LONG-TIME RATING): A rating based on an operating interval of 5 minutes or longer. (See also 2.10DV.12 in UL 60601-1)		N/A
2.10.102	Equipment shall comply with ANSI/AAMI Safety Current Limits (SCL) and ANSI/NFPA 99 Health Care Facilities Standards. X-ray equipment need only comply with the Clause 19 requirements in UL 2601-1. (See also 19.5DV.1 in UL 60601-1)		N/A
3.100.1a	Printed wiring boards comply with U.S. National or internationally harmonized component standards unless they are connected totally in a SELV circuit limited to 15 W, or less, maximum available power and whose failure will not result in a Safety Hazard. (See also 3.10DV.1.1 a) in UL 60601-1)	See Table Critical Components.	Pass
3.100.1b	Lithium batteries comply with U.S. National or internationally harmonized component standards (See also 3.10DV.1.1 b) in UL 60601-1)	Lithium battery does not provided.	N/A
3.100.1c	Optical isolators comply with U.S. National or internationally harmonized component standards unless they are connected totally in a SELV circuit limited to 15 W, or less, maximum available power and whose failure will not result in a Safety Hazard.(See also 3.10DV.1.1 c) in UL 60601-1)	See Table Critical Components.	Pass
3.100.1d	Wiring and tubing comply with U.S. National or internationally harmonized component standards unless they are connected totally in a SELV circuit limited to 15 W, or less, maximum available power and whose failure will not result in a Safety	See Table Critical Components.	Pass

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict
	Hazard.(See also 3.10DV.1.1 d) in UL 60601-1)		
3.100.1e	CRT's > 5 inches comply with U.S. National or internationally harmonized component standards (See also 3.10DV.1.1 e) in UL 60601-1)	Not provided.	N/A
3.101.1	Primary connected components up to isolation transformer meet U.S. national or international harmonized component standards(See also 3.10DV.2 in UL 60601-1)		N/A
6	a) All words except the signal words in "CAUTION", "WARNING", and "DANGER" markings at least 1.6 mm (1/16 inch) high (See also 6DV.1 a) in UL 60601-1)		N/A
6	b) Signal words "CAUTION", "WARNING", and "DANGER" at least 2.8 mm (7/64 inch) (See also 6DV.1 b) in UL 60601-1)		N/A
6	c) Letters in contrast color to the background (See also 6DV.1 c) in UL 60601-1)		N/A
6	Equipment capable of emitting ionizing radiation provided with warning statement (See also 6DV.2 in UL 60601-1)		N/A
6	If equipment produced in more than one factory, factory identification marked on the equipment (See also 6DV.3) in UL 60601-1)		N/A
6	Multiple-voltage equipment intended for permanent connection marked with voltage for which it is connected when shipped (See also 6DV.4 in UL 60601-1)		N/A
6.2l	Statement for suitable wiring materials at temperatures over 60 °C (See also 6.2DV in UL 60601-1)		N/A
6.6a	Identification of the content of gas cylinders in accordance with the color coding requirement of ANSI/NFPA99.(See also 6.5DV in UL 60601-1)		N/A
6.8	Cord-connected equipment provided with instructions to indicate type of attachment plug for alternate voltage(See also 6.8DV in UL 60601-1)	To be determined in end application.	N/A
10.2.2a	Replace "500V" with "600V" associated with the first dash (2nd bullet). (see also 2.2.2DV in UL60601-1.)	Single phase, 100-240 Vac.	Pass
10.2.2a	Replace "500V" with "600V" associated with the first dash (3rd bullet).(see also 2.2.2DV in UL60601-1.)		N/A
14	Fixed equipment and permanent equipment is Class I (see also 14DV in UL60601-1)	Not fixed and permanent equipment	N/A

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict
18m	Earthing of X-ray equipment: All parts operating at over 600 V ac, 850 V dc, or 850 V peak are enclosed in protectively earthed enclosures (see also 18DV in UL60601-1)		N/A
18m	Earthing of X-ray equipment: Connections from high-voltage equipment to other high voltage components made with high voltage shielded cables (see also 18DVm in UL 60601-1)		N/A
18n	Accessible non-current carrying conductive parts are protectively earthed (see also 18DVn in UL60601-1)		N/A
19	Enclosure and earth leakage currents comply with U.S. limits (see also 19.5DV in UL 60601-1)		Pass
22	When risk of injury can occur, end stops are provided (see also 22DV.1 in UL60601-1)		N/A
22	End stops have mechanical strength as determined by the test (see 22DV.2-4 in UL60601-1)		N/A
22.4	Dangerous movements of equipment parts which may cause physical injury to the patient or operator are possible only by the continuous activation by the operator (see also 22.4DV in UL60601-1)		N/A
22.7a	Emergency off switch has red actuator (see also 22.7DV a1) in UL60601-1)		N/A
22.7a	Emergency off switch: once actuated, maintains the equipment in "off" condition until action, different from that used to actuate, is performed (see also 22.7DV a2) in UL60601-1)		N/A
22.7a	Emergency off switch is readily accessible to operator (see also 22.7DV a3) in UL60601-1)		N/A
22.7b	Emergency off switch is marked with word "STOP" or symbol 5110 of IEC 878 in compliance with U.S. Clause 6		N/A
22.7b	Emergency off switch: separate and independent of the intended movement control (see also 22.7DV in UL60601-1)		N/A
28.3	No evidence of damage to a safety catch after test (see also 28.3DV in UL60601-1)		N/A
28.3	Safety catch marking provided (see also 28.3DV in UL60601-1)		N/A
28.4	No damage to structural parts as a result of loading test (see also 28.4DV.1&2 in UL60601-1)		N/A

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict
42	Insulation systems with measured temperatures exceeding Class A 105°C (based on 40°C ambient) during normal use and normal conditions shall comply with UL1446		Pass
55	Polymeric enclosures and external combustible surfaces (see also 55DV.1 in UL60601-1)		Pass
55	Polymeric enclosures comply with: Conductive coatings applied to nonmetallic surfaces comply with UL 746C (see also 55DV.2 in UL60601-1)		N/A
55	External combustible surface of more than 9.47 m2 or single dimension of 3.7 m have flame spread rating not exceeding 75 (Steiner Tunnel Test)(see also 55DV.3.1 in UL60601-1)		N/A
55	External combustible surface of more than 4.74 m2 but not exceeding 9.47 m2 have flame spread rating not exceeding 75 (Radiant Panel or Steiner Tunnel Test)(see also 55DV.3.2 in UL60601-1)		N/A
55	Polymeric enclosures for transportable equipment rated 94V-2 or better (see also 55DV.4.1 in UL60601-1)		Pass
55	Polymeric enclosures for fixed or stationary equipment rated 94V-0 or better (see also 55DV.4.1 in UL60601-1)		N/A
55	Polymeric enclosures withstand 6.78 Nm impact test (see also 55DV.4.3 in UL60601-1)		Pass
55	Polymeric enclosures: no deformation after mold stress test (see also 55DV.4.1 in UL60601-1)		Pass
55	Polymeric enclosures of hand-held equipment withstands 1.22 m drop test (see also 55DV.4.4 in UL 60601-1)	Not a hand-held unit.	N/A
56.3a	The likelihood of a patient connected lead or part being misused so as to introduce a safety hazard shall be investigated. Connector, pin, plug attached to patient connected lead or contact cannot engage any part on the equipment, including separable cord set (see also 56.3DV.1 in UL60601-1)		N/A
56.3a	Connector, pin, plug attached to patient connected lead or contact cannot make contact with live parts of power receptacle outlet (if product can be used without professional supervision) (see also 56.3DV.2 in UL60601-1)		N/A

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict
57	All equipment installations are required to be permanently connected equipment provided with field wiring provision in accordance with NEC, ANSI/NFPA 70 (see also 57DV.1 in UL60601-1)		N/A
57.2	Power cord mains plug is "Hospital Grade" type (see also 57.2DV.1 in UL60601-1)	Appliance inlet provided only.	N/A
57.2	Grounding reliability marking provided (see also 57.2DV.2 in UL60601-1)		N/A
57.2	Radiographic control disconnect mains plugs shall be acceptable for a current not less than 50 percent of the maximum input current measured. (see also 57.2DV.3 in uL60601-1)		N/A
57.2	Except for X-Ray equipment mains plugs shall be rated not less than 125% of rated current of the equipment (see also 57.2DV.4 in UL 60601-1)		N/A
57.2	Plug acceptable for voltage for which the equipment is configured when shipped (see also 57.2DV.4 in UL60601-1)		N/A
57.2	Where a polarized mains plug is used with edison-base lampholders or any single-pole protective device, it shall be connected in the ungrounded side of the line, except if it is in addition to the one in the ungrounded side. (see also 57.2DV.5&6 in UL60601-1)		N/A
57.3b	A detachable power cord for non-permanently installed equipment shall be unlikely to become detached accidentally, unless it can be shown that detachment will not constitute a safty hazard. (see also 57.3DVb) in UL60601-1)		N/A
57.3b	Flexible cord is of type acceptable for application (see also 57.3DVb) 1) in UL60601-1)		N/A
57.3b	Flexible cord not smaller than 18 AWG (57.3DVb) 2) in UL60601-1)		N/A
57.3b	Flexible cord complies with serviceability requirements (57.3DVb) 2) in UL60601-1)		N/A
57.5b	If leads are provided for connection to branch circuit, the free end is in separate compartment (see also 57.5DV in UL60601-1)		N/A
57.5b	If leads are provided for connection to branch circuit, the free length of leads inside field-wiring compartment is at least 152 mm long (see also 57.5DV in UL60601-1)		N/A

IEC 60601			
SubClause	Difference + Test	Result - Remark	Verdict
58.2	Connections shall be made mechanically secure as well as being soldered. (see also 58.2DV in UL60601-1)		N/A
59.1	Power supply cords and internal wiring including interconnection cords between equipment shall meet the requirements of NEC.		N/A
59.1	Cable type acceptable for external interconnection		N/A
400	For equipment which uses oxygen or recommends use with oxygen, special safety hazards associated with use of oxygen addressed in accordance with Clause 400. These requirements are based on oxygen-related requirements from IEC60601-2-19, particular requirements for the safety of baby incubators. (see also 43.2DV in UL60601-1)		N/A
600.1	Separate power units packed with equipment or provided with correlation marking (see also 60DV.1.1.1 in UL60601-1)		N/A
600.2.1	Direct plug-in unit construction and performance comply with required sections of UL1310 (see also 60DV.1.2.2 in UL60601-1)		N/A
600.2.2	Direct plug-in unit external temperature rise during overheating test does not exceed 65°C (60DV.1.2.3.2 in UL60601-1)		N/A
600.2.3	If direct plug-in unit provided with a mounting tab - unit marked as required by UL1310 (see also 60DV.1.2.4 in UL60601-1)		N/A

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

6.1	TABLE: marking durability		Pass
Marking tested	Remarks		
Label, Type XQ03, by Dongguan Xianquan Printing Co Ltd	Test with distilled water, Duration 15s; Test with methylated spirit, Duration 15s; Test with isopropyl alcohol, Duration 15s;		
Test with distilled water, Duration 15s; Test with methylated spirit, Duration 15s; Test with isopropyl alcohol, Duration 15s;	Test with distilled water, Duration 15s; Test with methylated spirit, Duration 15s; Test with isopropyl alcohol, Duration 15s;		
Label, Type FJ07, by Fan JA Paper Printing Co Ltd	Test with distilled water, Duration 15s; Test with methylated spirit, Duration 15s; Test with isopropyl alcohol, Duration 15s;		
Label, XQ004-B, Fan JA Paper Printing Co Ltd	Test with distilled water, Duration 15s; Test with methylated spirit, Duration 15s; Test with isopropyl alcohol, Duration 15s;		
Label, EL-15, E-Lin Adhesive Label Co Ltd	Test with distilled water, Duration 15s; Test with methylated spirit, Duration 15s; Test with isopropyl alcohol, Duration 15s;		
supplementary information:			
-			

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

7	TABLE: power input					Pass
Operating condition	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Remarks	
Model GTM91120-3007.5-2.5-T2	-	-	-	-	-	
Maximum Normal Load/--	90	50	473.61	25.327	Max. normal load	
Maximum Normal Load/--	90	60	477.38	25.296	Max. normal load	
Maximum Normal Load/1.5A	100	50	436.21	25.107	Max. normal load	
Maximum Normal Load/1.5A	100	60	440.66	25.117	Max. normal load	
Maximum Normal Load/1.5A	240	50	253.61	25.08	Max. normal load	
Maximum Normal Load/1.5A	240	60	253.78	24.96	Max. normal load	
Maximum Normal Load/ --	264	50	235.62	24.21	Max. normal load	
Maximum Normal Load/ --	264	60	237.76	24.43	Max. normal load	
Model GTM91120-3048-T2	-	-	-	-	-	
Maximum Normal Load/--	90	50	637.2	35.34	Max. normal load	
Maximum Normal Load/--	90	60	643.8	35.34	Max. normal load	
Maximum Normal Load/1.5A	100	50	591.5	35.33	Max. normal load	
Maximum Normal Load/1.5A	100	60	599.1	35.45	Max. normal load	
Maximum Normal Load/1.5A	240	50	332.92	35.81	Max. normal load	
Maximum Normal Load/1.5A	240	60	336.86	35.83	Max. normal load	
Maximum Normal Load/ --	264	50	317.55	36.07	Max. normal load	
Maximum Normal Load/ --	264	60	318.28	26.06	Max. normal load	
Model GTM91120-3007.5-2.5-P2	-	-	-	-	-	
Maximum Normal Load/--	90	50	0.521	25.3	Max. normal load	
Maximum Normal Load/--	90	60	0.515	25.2	Max. normal load	
Maximum Normal Load/1.5A	100	50	0.472	25.1	Max. normal load	
Maximum Normal Load/1.5A	100	60	0.458	25.0	Max. normal load	
Maximum Normal Load/1.5A	240	50	0.231	24.8	Max. normal load	
Maximum Normal Load/1.5A	240	60	0.236	24.9	Max. normal load	
Maximum Normal Load/ --	264	50	0.219	24.8	Max. normal load	
Maximum Normal Load/ --	264	60	0.223	24.9	Max. normal load	
Model GTM91120-3048-P2	-	-	-	-	-	
Maximum Normal Load/--	90	50	0.730	36.6	Max. normal load	
Maximum Normal Load/--	90	60	0.715	36.5	Max. normal load	
Maximum Normal Load/1.5A	100	50	0.643	36.4	Max. normal load	
Maximum Normal Load/1.5A	100	60	0.645	36.3	Max. normal load	
Maximum Normal Load/1.5A	240	50	0.325	37.9	Max. normal load	
Maximum Normal Load/1.5A	240	60	0.323	36.9	Max. normal load	
Maximum Normal Load/ --	264	50	0.310	38.1	Max. normal load	
Maximum Normal Load/ --	264	60	0.303	36.9	Max. normal load	
Model GTM91128LI1CEL	--	--	--	--	--	
Maximum Normal Load/--	90	50	0.1551	6.66	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/--	90	60	0.1539	6.67	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/1.5A	100	50	0.1429	6.69	Max. normal load, 4.2V, 1000mA	

IEC 60601						
Clause	Requirement + Test				Result - Remark	Verdict
Maximum Normal Load/1.5A	100	60	0.1425	6.67	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/1.5A	240	50	0.0850	6.99	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/1.5A	240	60	0.0905	6.92	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/ --	264	50	0.0835	7.03	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/ --	264	60	0.0964	7.09	Max. normal load, 4.2V, 1000mA	
Maximum Normal Load/--	90	50	0.1839	8.03	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/--	90	60	0.1800	8.01	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/1.5A	100	50	0.1678	7.99	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/1.5A	100	60	0.1640	7.95	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/1.5A	240	50	0.0964	8.30	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/1.5A	240	60	0.1058	8.31	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/ --	264	50	0.0936	8.35	Max. normal load, Charging Discharged battery (1S-1P)	
Maximum Normal Load/ --	264	60	0.1014	8.38	Max. normal load, Charging Discharged battery (1S-1P)	
Model GTM91128LI3CEL	--	--	--	--	--	
Maximum Normal Load/--	90	50	0.3217	14.94	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/--	90	60	0.3137	14.96	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/1.5A	100	50	0.2933	14.92	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/1.5A	100	60	0.2873	14.94	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/1.5A	240	50	0.1533	15.26	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/1.5A	240	60	0.1590	15.17	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/ --	264	50	0.1442	15.23	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/ --	264	60	0.1542	15.46	Max. normal load, 12.6V, 1000mA	
Maximum Normal Load/--	90	50	0.3115	14.39	Max. normal load, Charging Discharged battery (3S-1P)	
Maximum Normal Load/--	90	60	0.3084	14.40	Max. normal load, Charging Discharged battery (3S-1P)	
Maximum Normal Load/1.5A	100	50	0.2846	14.31	Max. normal load, Charging	

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

					Discharged battery (3S-1P)
Maximum Normal Load/1.5A	100	60	0.2799	14.36	Max. normal load, Charging Discharged battery (3S-1P)
Maximum Normal Load/1.5A	240	50	0.1483	14.54	Max. normal load, Charging Discharged battery (3S-1P)
Maximum Normal Load/1.5A	240	60	0.1524	14.44	Max. normal load, Charging Discharged battery (3S-1P)
Maximum Normal Load/ --	264	50	0.1401	14.58	Max. normal load, Charging Discharged battery(3S-1P)
Maximum Normal Load/ --	264	60	0.1472	14.90	Max. normal load, Charging Discharged battery (3S-1P)

supplementary information:

Max. normal load: 5Vdc, 4A, Model GTM 91120-3007.5-2.5-AB Series; Max. normal load: 48Vdc, 0.625A, Model GTM 91120-3048-AB Series ;

15b	TABLE: residual voltage in attachment plug										Pass
Voltage measured between:	Measurements [V]										Remarks
	1	2	3	4	5	6	7	8	9	10	
Supply Pins (pin 1 and pin 2)	10	9	11	11	10	12	11	11	10	9	Model GTM91120-WWV-X.X-T2
pin 1 and Earthing pin)	0	0	0	0	0	0	0	0	0	0	Model GTM91120-WWV-X.X-T3A
pin 2 and Earthing pin)	0	0	0	0	0	0	0	0	0	0	Model GTM91120-WWV-X.X-T3A

supplementary information:
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15c	TABLE: residual voltage or energy in capacitors				N/A
Capacitor and its location	Residual voltage (V)	Time after disconnection (s)	Capacitance value (µF)	Residual energy (mJ)	Remarks
supplementary information:					

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

17h1	TABLE: defibrillation-proof applied parts					N/A
Test Condition: Fig. 50 or 51	Accessible part of measurement:	Applied part with test voltage	Test voltage polarity	Measured voltage between Y1 and Y2 (mV)	Remarks	
supplementary information:						

17h2	TABLE: defibrillation-proof recovery time				N/A
Applied part with test voltage	Test voltage polarity	Recovery time from accompanying documents (s)	Measured recovery time (s)	Remarks	
supplementary information:					

18	TABLE: protective earthing				N/A
Test location	Test current (A)	Measured voltage (V)	Resistance (ohms)	Remarks	
supplementary information: No accessible earthing part					

IEC 60601			
Clause	Requirement + Test	Result - Remark	Verdict

19	TABLE: leakage current				Pass
Type of leakage current and test condition (including single faults)	Supply voltage (V)	Supply frequency (Hz)	Measured max. value (µA)	Remarks	
Model GTM91120-3048-T2	-	-	-	-	
EN, NC, S1 = 1, S5 = N	264	60	28 /29	MD1 between Enclosure and Earth /500uA	
EN, NC, S1 = 1, S5 = R,	264	60	28 /29	MD1 between Enclosure and Earth/500uA	
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	28 /29	MD1 between Enclosure and Earth/500uA	
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	28 /29	MD1 between Enclosure and Earth/500uA	
EN, NC, S1 = 1, S5 = N	264	60	245 /237	MD1 between Output connector and Earth/500uA	
EN, NC, S1 = 1, S5 = R,	264	60	245 /237	MD1 between Output connector and Earth /500uA	
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	359 /388	MD1 between Output connector and Earth/500uA	
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	359 /388	MD1 between Output connector and Earth/500uA	
Model GTM91120-3007.5-2.5-T2	-	-	-	-	
EN, NC, S1 = 1, S5 = N	264	60	9 /10	MD1 between Enclosure and Earth /500uA	
EN, NC, S1 = 1, S5 = R,	264	60	9 /10	MD1 between Enclosure and Earth/500uA	
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	9 /10	MD1 between Enclosure and Earth/500uA	
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	9 /10	MD1 between Enclosure and Earth/500uA	
EN, NC, S1 = 1, S5 = N	264	60	93 /91	MD1 between Output connector and Earth/500uA	
EN, NC, S1 = 1, S5 = R,	264	60	93 /91	MD1 between Output connector and Earth /500uA	

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Clause	Requirement + Test	Result - Remark		Verdict	
	EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	131 /129	MD1 between Output connector and Earth/50uA
	EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	131 /129	MD1 between Output connector and Earth/500uA
	Model GTM91120-3005-T1	Earth Leakage	--	--	--
	ER, NC, S1 = 1, S5 = N	264	60	85 /87	500uA
	ER, NC, S1 = 1, S5 = R	264	60	85 /87	500uA
	ER, SFC (Neutral Open), S1 = 0, S5 = N	264	60	121 /124	500uA
	ER, SFC (Neutral Open), S1 = 0, S5 = R	264	60	121 /124	500uA
	Enclosure Leakage	--	--	--	--
	EN, NC, S1 = 1, S5 = N	264	60	7 /8	MD1 between Enclosure and Earth /500uA
	EN, NC, S1 = 1, S5 = R,	264	60	7 /8	MD1 between Enclosure and Earth/500uA
	EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	7 /8	MD1 between Enclosure and Earth/500uA
	EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	7 /8	MD1 between Enclosure and Earth/500uA
	EN, NC, S1 = 1, S5 = N	264	60	84 /85	MD1 between Output connector and Earth/500uA
	EN, NC, S1 = 1, S5 = R,	264	60	84 /85	MD1 between Output connector and Earth /500uA
	EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	120 /122	MD1 between Output connector and Earth/500uA
	EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	120 /122	MD1 between Output connector and Earth/500uA
	Model GTM91120-3048-T1	Earth Leakage	--	--	--
	ER, NC, S1 = 1, S5 = N	264	60	226 /227	500uA
	ER, NC, S1 = 1, S5 = R	264	60	226 /227	500uA
	ER, SFC (Neutral Open), S1 = 0, S5 = N	264	60	344 /346	500uA
	ER, SFC (Neutral Open), S1 = 0, S5 = R	264	60	344 /346	500uA
	Enclosure Leakage	--	--	--	--
	EN, NC, S1 = 1, S5 = N	264	60	7 /8	MD1 between Enclosure and Earth /500uA
	EN, NC, S1 = 1, S5 = R,	264	60	7 /8	MD1 between

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Clause	Requirement + Test	Result - Remark	Verdict

				Enclosure and Earth/500uA
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	7 /8	MD1 between Enclosure and Earth/500uA
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	7 /8	MD1 between Enclosure and Earth/500uA
EN, NC, S1 = 1, S5 = N	264	60	84 /85	MD1 between Output connector and Earth/500uA
EN, NC, S1 = 1, S5 = R,	264	60	84 /85	MD1 between Output connector and Earth /500uA
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	120 /122	MD1 between Output connector and Earth/500uA
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	120 /122	MD1 between Output connector and Earth/500uA
Model GTM91120-3048-FW	--	--	--	--
Enclosure Leakage	--	--	--	--
EN, NC, S1 = 1, S5 = N	264	60	45.7/46.3	MD1 between Output connector and Earth
EN, NC, S1 = 1, S5 = R,	264	60	45.4/46.0	MD1 between Output connector and Earth
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	96.2/96.4	MD1 between Output connector and Earth
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	95.8/95.8	MD1 between Output connector and Earth
Model GTM91120-3048-P2	--	--	--	--
Enclosure Leakage	--	--	--	--
EN, NC, S1 = 1, S5 = N	264	60	4.2/3.7	MD1 between Enclosure and Earth
EN, NC, S1 = 1, S5 = R,	264	60	5.0/4.6	MD1 between Enclosure and Earth
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	12.8/10.5	MD1 between Enclosure and Earth
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	12.7/11.3	MD1 between Enclosure and Earth
EN, NC, S1 = 1, S5 = N	264	60	22.0/21.8	MD1 between Output connector and Earth
EN, NC, S1 = 1, S5 = R,	264	60	21.9/21.8	MD1 between Output connector

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Clause	Requirement + Test	Result - Remark	Verdict

				and Earth
EN, SFC (Neutral Open), S1 = 0, S5 = N	264	60	57.7/57.5	MD1 between Output connector and Earth
EN, SFC (Neutral Open), S1 = 0, S5 = R	264	60	63.3/63.0	MD1 between Output connector and Earth

supplementary information:

-- Output terminal leakage current is measured for reference only. -- All measured leakage currents did not exceed allowable limits.

ER - Earth leakage current
 EN - Enclosure leakage current
 P - Patient leakage current
 PM - Patient leakage current with mains on the applied parts
 PA - Patient auxiliary current
 Fig. 15 - refers to Fig. 15 in IEC601-1
 MD - Measuring device

A - After humidity conditioning
 B - Before humidity conditioning
 1 - Switch closed or set to normal polarity
 0 - Switch open or set to reversed polarity
 NC - Normal condition
 SFC - Single fault condition

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Clause	Requirement + Test	Result - Remark	Verdict

20	TABLE: dielectric strength				Pass
Insulation under test (area from insulation diagram)	Insulation type: (OP-operational / BI-basic / SI-supplementary / DI-double / RI-reinforced)	Reference voltage (V)	Test voltage (V)	Remarks	
Area	Model GTM91120-WWVV-X.X-T2 series, Class II	-	-	-	
Area B, Primary – Secondary Output	(A-a2) DI/RI	281.1	4125	No breakdown	
Area B, T1 Core - Secondary	(A-a2) DI/RI	281.1	4125	No breakdown	
Area B, Triple Wire (Furukawa Electric / TEX-E) *	(A-a2) DI/RI *1.5	281.1	6187	No breakdown	
Area B, TWO layer tape (3M Company / 1350F)	(A-a2) DI/RI	281.1	4125	No breakdown	
Area C, Primary - Enclosure (without cover)	(A-a2) DI/RI	281.1	4125	No breakdown	
Area	Model GTM91120-WWVV-X.X-T1 series, Class I	-	-	-	
Area B, Primary – Secondary Output	(A-a2) DI/RI	281.1	4125	No breakdown	
Area C, Primary - Enclosure (without cover)	(A-a2) DI/RI	281.1	4125	No breakdown	
Area D, Primary – Earthing	(A-a1)BI	281.1	1563	No breakdown	
Area	Model GTM91120-WWVV-X.X-P2 series, Class II	-	-	-	
Area B, Primary – Secondary Output	DI/RI	281.1	4125	No breakdown	
Area C, Primary - Enclosure	DI/RI	281.1	4125	No breakdown	
Area	Model GTM91120-WWVV-X.X-F2 series, Class II	-	-	-	
Area B, Primary – Secondary Output	DI/RI	281.1	4125	No breakdown	
Area B, TWO layer tape (3M Company / 1350F, 1350-1, 35660Y, LY-20)	(A-a2) DI/RI	281.1	4125	No breakdown	
supplementary information: 1.5 times of DI/RI voltage for Primary -secondary					

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Clause	Requirement + Test	Result - Remark	Verdict

21	TABLE: mechanical strength			Pass
Part under test	Test (impact, drop, force, handle, rough handling, mobile)		Remarks	
Enclosure, Top, above T1	Force Test		No Damage	
Enclosure, Bottom, above Label	Force Test		No Damage	
Enclosure, Side, above parting line	Force Test		No Damage	
Enclosure, Bottom, above removable cover	Force Test		No Damage	
Enclosure, Front, near Inlet	Force Test		No Damage	
Enclosure, Back, near output cord	Force Test		No Damage	
Power supply whole unit	Drop Test		No Damage	
supplementary information:				
-				

24	TABLE: - stability			N/A
Part under test	Test condition		Remarks	
supplementary information:				

29	TABLE: X - radiation			N/A
Part under test	Test condition	Measured radiation (mR)	Remarks	
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

42	TABLE: normal temperature		Pass
Supply voltage: See below Ambient temperature: See below		Test Condition: See below	
Measuring location		Measured temperature (°C)	Remarks
Supply Voltage: 90VAC, 60Hz, Label face down, Model GTM91120-3048-T2		-	-
AMBIENT		40	--
AC inlet body		62.01	100
AC inlet Pin		76.05	155
F1		64.03	130
F2		69.2	130
LF1 Winding		108.51	130
C2		103.88	120
D4		106.58	130
CX1		72.9	100
Q1		114.55	130
T1 Core		117.2	130
T1 winding		110.69	120
CY1		90.27	100
U2		98.71	110
D7		105.28	130
LF2		80.22	130
OUTPUT WIRE, Inside near LF2		73.9	80
PWB near Q1		109.95	130
PWB near R11		106.4	130
ENCLOSURE, Inside, above T1		70.19	125
ENCLOSURE, Outside above Label		68.79	85
Supply Voltage: 90VAC, 60Hz, Label face up, Model GTM91120-3048-T2		-	-
AMBIENT		40	--
AC inlet body		64.09	130
AC inlet Pin		80.59	155
F1		68.54	130
F2		72.56	130
LF1 Winding		110.69	130
C2		105.12	120
D4		110.1	130
CX1		76.11	100
Q1		116.29	130
T1 Core		118.07	130
T1 winding		110.47	120
CY1		90.4	100
U2		100.36	110
D7		105.84	130

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Clause	Requirement + Test	Result - Remark	Verdict

LF2		82.65	130
OUTPUT WIRE, Inside near LF2		76.08	80
PWB near Q1		112.22	130
PWB near R11		109.26	130
ENCLOSURE, Inside, above T1		65.24	125
ENCLOSURE, Outside above Label		69.2	85
Supply Voltage: 90VAC, 60Hz, Label face up, Model GTM91120-3007.5-2.5-T2		-	-
AMBIENT		40	--
AC inlet body		56.03	T1 Core
AC inlet Pin		66.59	155
F1		60.52	130
F2		62.95	130
LF1 Winding		88.78	130
C2		87.35	120
D4		90.03	130
CX1		64.8	100
Q1		94.42	130
T1 Core		95.32	130
T1 winding		96.32	120
CY1		79.47	100
U2		87.07	110
D7		98.96	130
LF2		82.87	130
OUTPUT WIRE, Inside near LF2		72.62	80
PWB near Q1		92.86	130
Supply Voltage: 90VAC, 60Hz, Model GTM91120-3048-P2		--	--
AMBIENT		27.5	40
INPUT WIRE		46.2	59.5
F1		47.5	60.8
F2		46.9	60.2
LF1 Winding		59.5	72.8
C2		59.2	72.5
D4		64.2	77.5
CX1		49.7	63.0
Q1		61.3	74.6
T1 Core		63.1	76.3
T1 winding		64.8	78.1
CY1		57.4	70.7
U2		58.7	70.0
D7		62.1	75.4
LF2		50.8	64.1
OUTPUT WIRE, Inside near LF2		48.7	62.0
PWB near Q1		61.4	74.7
PWB near R11		61.9	75.2

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Clause	Requirement + Test	Result - Remark	Verdict

ENCLOSURE, Inside, near Label		58.6	71.9
ENCLOSURE, Outside above Label		55.5	68.8
Supply Voltage: 264VAC, 60Hz, Model GTM91120-3048-P2		--	--
AMBIENT		27.3	40
INPUT WIRE		41.9	55.0
F1		43.7	56.8
F2		42.4	55.6
LF1 Winding		50.4	63.6
C2		56.4	69.6
D4		55.9	69.1
CX1		47.0	60.2
Q1		62.4	75.6
T1 Core		65.8	79.0
T1 winding		68.4	81.6
CY1		60.7	73.9
U2		62.8	76.0
D7		70.0	83.2
LF2		54.7	67.8
OUTPUT WIRE, Inside near LF2		52.0	65.1
PWB near Q1		61.8	75.0
PWB near R11		57.2	70.4
ENCLOSURE, Inside, near Label		60.0	73.2
ENCLOSURE, Outside above Label		54.6	67.8
Supply Voltage: 264VAC, 60HZ, MODEL GTM91120-3007.5-2.5-P2		--	--
AMBIENT		25.6	40.0
INPUT WIRE		40.1	54.7
F1		40.5	55.1
F2		38.2	52.8
LF1 Winding		46.2	60.8
C2		54.6	69.2
D4		50.4	65.0
CX1		44.6	59.2
Q1		57.1	71.7
T1 Core		62.5	77.0
T1 winding		64.5	79.0
CY1		55.9	70.5
U2		59.6	74.2
D7		70.5	85.1
LF2		61.5	76.1
OUTPUT WIRE, Inside near LF2		55.0	69.5
PWB near Q1		57.4	72.0
PWB near R11		54.0	68.6
ENCLOSURE, Inside, near Label		52.0	66.6
ENCLOSURE, Outside above Label		46.6	61.2
Supply Voltage:		--	--

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Clause	Requirement + Test	Result - Remark	Verdict

90VAC, 60HZ, MODEL GTM91120-3048-FW			
AMBIENT		40.0	40
INPUT CONNECTOR BODY		55.9	85
INPUT CONNECTOR PIN		51.5	155
F1		53.4	130
LF1 Winding		81.8	130
C2		77.6	85
D4		90.2	105
CX1		71.7	100
Q1		84.1	130
T1 Core		88.2	120
T1 winding		90.3	120
CY1		65.3	85
U2		70.0	100
D7		84.0	105
LF2		56.6	130
OUTPUT connector		46.1	80
PWB near Q1		81.7	130
PWB near R11		82.9	130
Supply Voltage: 264VAC, 60HZ, MODEL GTM91120-3048-FW		--	--
AMBIENT		40.0	40
INPUT CONNECTOR BODY		49.4	85
INPUT CONNECTOR PIN		47.4	155
F1		48.0	130
LF1 Winding		58.2	130
C2		67.5	85
D4		66.9	105
CX1		59.4	100
Q1		82.8	130
T1 Core		96.5	120
T1 winding		98.4	120
CY1		68.1	85
U2		75.4	100
D7		99.4	105
LF2		59.8	130
OUTPUT Connector, Inside near LF2		47.6	80
PWB near Q1		79.5	130
PWB near R11		74.0	130
Supply Voltage: 264VAC, 60HZ, MODEL GTM91120-3007.5-2.5-FW		--	--
AMBIENT		40.0	40
Input Connector body		47.6	85
Input Connector Pin		47.6	155
F1		47.7	130
LF1 Winding		56.7	130
C2		63.1	85

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Clause	Requirement + Test	Result - Remark	Verdict

D4		61.9	105
CX1		55.0	100
Q1		80.1	130
T1 Core		86.2	120
T1 winding		87.5	120
CY1		69.5	85
U2		68.5	100
D7		96.4	105
LF2		91.0	130
OUTPUT Connector, Inside near LF2		54.9	80
PWB near Q1		78.6	130
PWB near R11		71.1	130
Model GTM91128LI3CEL Test Condition: Input: 90V, 60 Hz, Load: 12.6Vdc, 1000mA, charging fully discharged battery(3S-1P)		--	--
AMBIENT		40	40
AC INLET BODY		50.3	85
AC INLET PIN		51.3	155
F1		51.9	130
LF1 Winding		69.2	130
C2		72.0	120
D4		72.8	105
CX1		64.1	100
Q1		76.7	130
T1 Core		77.2	130
T1 winding		79.0	120
CY1		66.2	85
U2		74.5	100
Charging PWB near R1		73.9	130
Charging PWB near U100		100.1	130
OUTPUT WIRE, Inside near LF2		57.2	80
Main PWB near Q1		76.4	130
ENCLOSURE, Inside, above T1		62.7	125
ENCLOSURE, Outside above Label		61.8	85
Model GTM91128LI3CEL, Test Condition: Input: 264V, 60 Hz, Load: 12.6Vdc, 1000mA,charging fully discharged battery((3S-1P)		--	--
AMBIENT		40.0	40
AC INLET BODY		49.1	85
AC INLET PIN		51.8	155
F1		53.7	130
LF1 Winding		64.1	130
C2		72.8	120
D4		69.8	105
CX1		57.3	100
Q1		79.9	130
T1 Core		82.5	130
T1 winding		83.4	120

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Clause	Requirement + Test	Result - Remark	Verdict
CY1		70.1	85
U2		76.7	100
Charging PWB near R1		81.2	130
Charging PWB near U100		98.1	130
OUTPUT WIRE, Inside near LF2		58.5	80
Main PWB near Q1		80.5	130
ENCLOSURE, Inside, above T1		68.9	125
ENCLOSURE, Outside above Label		56.7	85
Model GTM91128LI1CEL, Test Condition: Input: 90V #, 60 Hz, Load: 4.2Vdc, 1000mA, charging fully discharged battery(1S-1P)		--	--
AMBIENT		40.0	40
AC INLET BODY		45.6	85
AC INLET PIN		46.8	155
F1		47.7	130
LF1 Winding		55.2	130
C2		61.1	120
D4		59.1	105
CX1		52.8	100
Q1		68.8	130
T1 Core		69.8	130
T1 winding		71.1	120
CY1		64.1	85
U2		66.9	100
Charging PWB near R1		68.7	130
Charging PWB near U100		95.2	130
OUTPUT WIRE, Inside near LF2		55.9	80
Main PWB near Q1		68.8	130
ENCLOSURE, Inside, above T1		56.4	125
ENCLOSURE, Outside above Label		52.3	85
COR - indicates measurements taken using change-of-resistance method			
supplementary information:			
Max Normal Load: 5V, 12A; 48V, 0.625A.			

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Clause	Requirement + Test	Result - Remark	Verdict

44	TABLE: overflow, spillage, leakage, humidity, ingress of liquids, cleaning, sterilization, disinfection		Pass
Test type and condition	Part under test	Remarks	
Humidity: 93%, Temperature: 25degree C, 48 hrs	Power Supply whole Unit	Pass	
Preconditioning: 25.5 degC, 4 hrs	Power Supply whole Unit	Pass	
Post-Conditioning: 26.7 degC, 50.9 % 1 hrs	Power Supply whole Unit	Pass	
supplementary information: --			

45	TABLE: hydrostatic pressure and pressure-relief device cycling test		N/A
Test type and condition	Part under test	Test pressure	Remarks
supplementary information:			

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Clause	Requirement + Test	Result - Remark	Verdict

52	TABLE: abnormal operation		Pass
Test type, condition and clause reference	Observed results	Remarks	
Model GT(M)91120-3048-T2	--	--	
Diode D1	Final Input: 264Vac, 0A, 0W Final Output: 0V, 0A T1= - °C	Test Time: 1 sec Fuse opened immediately	
Diode C2	Final Input: 264Vac, 0A, 0W Final Output: 0V, 0A T1= - °C	Test Time: 1 sec Fuse opened immediately	
R11	Final Input: 264Vac, 0A, 0W Final Output: 0V, 0A T1= - °C	Test Time: 1sec Fuse opened immediately Q1 damaged	
U2B (Pri pin 1-2)	Final Input: 264Vac, 20mA to 120mA, 3W to 20W Final Output: 29V, 0.18A T1= 54.64 °C	Test Time: 7hrs Input and output bouncing	
U2A(Sec pin 3-4)	Final Input: 264Vac, 32mA, 0.6W Final Output: 0V, 0A	Test Time: 1 hr Unit shut down	
Mosfet Q1 (G-D)	Final Input: 264Vac, 0A, 0W Final Output: 0V, 0A T1= - °C	Test Time: 1sec Fuse opened immediately R11, R12, R13 and R14 damaged	
Mosfet Q1 (S-D)	Final Input: 264Vac, 0mA, 0W Final Output: 0V, 0V T1= - °C	Test Time: 1sec Fuse opened immediately R11, R12, R13 and R14 damaged	
Mosfet Q1 (G-S)	Final Input: 264Vac, 33mA, 0.6W Final Output: 0V, 0A T1= - °C	Test Time: 1 hr Unit shut down	
T1 Pin1-2 (Primary)	Final Input: 264Vac, 0mA, 0W Final Output: 0V, 0A T1= 127.22°C	Test Time: 30mins Input and output bouncing Fuse open after run for 30mins R9, R11, R12, R13 and R14 damaged	
T1 Pin3-5 (Primary) Repeat with fuse type: ICP 3.15A	Final Input: 264Vac, 0A, 0W Final Output: 0V, 0A T1= - °C	Test Time: 15mins No hazard Fuse (F1) opened R11, R12 damaged	
D7	Final Input: 264Vac, 31.1mA, 0.11W	Test Time: 1 hr	

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Clause	Requirement + Test	Result - Remark	Verdict
		Final Output: 0V, 0A T1: - °C	Unit shut down No hazard
R20		Final Input: 264Vac, 34.64mA, 0.59W Final Output: 0V, 0A T1= - °C	Test Time: 1 hr Unit shut down No hazard
U2A(Sec pin 3-4)		Final Input: 264Vac, 30mA, 0.6W Final Output: 0V, 0A T1= - °C	Test Time: 15mins Unit shut down
D7		Final Input: 264Vac, 30mA, 0.6W Final Output: 0V, 0A T1= - °C	Test Time: 1 hrs Unit shut down
R20		Final Input: 264Vac, 35mA, 0.7W Final Output: 0V, 0A T1= - °C	Test Time: 15mins Unit shut down
Output Short		Final Input: 264Vac, 34mA Final Output: - T1= - °C Unit shut down	Test Time: 15mins
Output overload		Final Input: 264Vac, 106.28mA Final Output: 4.65V, 5A T1= 109.64°C Output bouncing at 5.1A	Test Time: 6.5hrs
Power Supper Short Circuit Model: GTM91128LI1CEL		Final Input: 0.066 A Final Output: 0 A T1= 47.3 °C	Unit Shut down
Power Supper Short Circuit Model: GTM91128LI3CEL		Final Input: 0.0543 A Final Output: 0 A T1= 54.4 °C	Unit Shut down
Power Supply Unit GTM91128LI1CEL		Max Voltage:4.146V Max Current at 1 min: 1.314A Max Power at 1 min: 5.06W	Pass.
Power Supply Unit GTM91128LI3CEL		Max Voltage:12.548V Max Current at 1 min: 9.82A Max Power at 1 min: 11.84W	Pass.
supplementary information:			
-			

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Clause	Requirement + Test	Result - Remark	Verdict

56.10	TABLE: actuating parts and controls		N/A
Part under test	Torque applied	Remarks	
supplementary information:			

56.11b	TABLE: foot operated control devices-loading		N/A
Part under test	Observed results	Remarks	
supplementary information:			

57.4	TABLE: cord anchorages				N/A
Cord under test	Mass of equipment	Pull	Torque	Remarks	
supplementary information:					

57.4b	TABLE: cord bending			N/A
Cord under test	Test mass	Measured curvature	Remarks	
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

57.9.1a	TABLE: transformer short circuit						Pass
Winding under test	Protection	Measured temperatures (°C)			Test duration	Remarks	
		Primary	Secondary	Ambient			
Model GTM 91120- 3007.5- 2.5-T2	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	-	--	22.9	15mins	Final Input:264V, 38mA, 0.67W Enclosure, above T1: - Unit shut down	
Model GTM 91120- 3048-T2	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	-	--	22.9	15mins	Final Input:264V, 35mA, 0.77W Enclosure, above T1: - Unit shut down	
Model GTM 91120- 3007.5- 2.5-F2	-	-	-	-	-	-	
T1 Sec winding (Pin TA – TB)	OPP	--	--	24.1	10 mins	Final Input:0.07A↔0.13A. Unit Shut Down	
Model GTM 91120- 3048-F2	-	-	-	-	-	-	
T1 Sec winding (Pin TA – TB)	OPP	--	--	24.1	10 min	Final Input:0.07A↔0.14A. Unit Shut Down	
Model GTM 91120- 3007.5- 2.5-F2	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	--	--	24.1	10 min	Final Input:0.07A↔0.13A. Unit Shunt Down	
Model	--	--	--	--	--	--	

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T1 Sec winding (Pin TA – TB)	OPP	--	--	24.1	10 min	Final Input:0.07A↔0.14A. Unit Shunt Down
supplementary information:						
-						

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57.9.1b	TABLE: overload							Pass
Winding under test	Protection	Measured temperatures (°C)			Test duration	Test current or thermal cutout temp.	Remarks	
		Primary	Secondary	Ambient				
Model GTM9112 0-3007.5-2.5-T2	--	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	110.51	--	25	8.5hrs	--	Final Input: 264Vac, 107.89mA Enclosure (outside), above T1: 77.02°C	
Model GTM9112 0-3048-T2	--	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	154.93	--	25	8.5hrs	--	Final Input: 264Vac, 113.14mA Enclosure (outside), above T1: 89.31°C	
Model GTM9112 0-3007.5-2.5-FW	--	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	78.7	--	25.0	6hr18:59	--	Final Input: 0.07A↔0.13A	
Model GTM9112 0-3048-FW	--	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	100.7	--	25.0	6hr18:30	--	Final Input:0↔0.08A	
Model GTM9112 0-3007.5-2.5-P2	--	--	--	--	--	--	--	
T1 Sec winding (Pin TA – TB)	OPP	143.3	--	25.7	30hr11:50	--	Final Input: 0.136A	
Model GTM9112 0-3048-P2	--	--	--	--	--	--	--	
T1 Sec	OPP	77.8°C	--	25.6°C	17:21:09	--	Final	

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winding (Pin TA – TB)							Input:0.137↔0.07A
supplementary information: -							

57.9.2	TABLE: transformer dielectric strength					N/A
Transformer under test	Test voltage applied to	Test voltage	Test frequency	Remarks		
supplementary information: -						

	TABLE: additional tests			Pass
Clause	Test type and condition	Remarks and observed results		Verdict
Cl. 16E	Low Voltage Reliability	Unit shutdown immediately		Pass
Cl. 55	Ball Drop, Enclosure	No Damage		Pass
Cl.55	Drop Impact	No Damage		Pass
Cl. 52.4.1	Power Availability	Maximum VA: 51.6 VA		Pass
Cl. 59.2	Measured 1.1mm impression	Ball Pressure, T1 Bobbin, type CP-J-8800 by Hitachi Chemical Co Ltd		Pass
Cl. 59.2	Measured 1.0mm impression	Ball Pressure, Enclosure, Type HF500R by Sabic Innovative Plastics B V		Pass
supplementary information: -				