



# Test Report : GEM30x24

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AC-DC High Reliability Interchangeable Medical Adaptor

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

## ■ SAFETY TEST

Safety Test

## ■ RELIABILITY TEST

Environment Test

Other test

**DESIGN VERIFY TEST**
**OUTPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	100mVp-p (Max)	I/P:230VAC O/P:FULL LOAD Ta:25°C	56mVp-p	P
2	VOLTAGE TOLERANCE	-2% ~ +2% (Max)	I/P:90VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	-0.90% ~ +1.23%	P
3	LINE REGULATION	-1% ~ +1% (Max)	I/P:90VAC ~264VAC O/P:FULL LOAD Ta:25°C	-0.61% ~ +0.00%	P
4	LOAD REGULATION	-2% ~ +2% (Max)	I/P:230VAC O/P:FULL ~MIN LOAD Ta:25°C	-0.91% ~ +1.23%	P
5	SET UP TIME	500mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	336.609 mS	P
6	RISE TIME	100 mS	I/P:230VAC O/P:FULL LOAD Ta:25°C	62.885 mS	P
7	HOLD UP TIME	16 mS (Min)	I/P:115VAC O/P:FULL LOAD Ta:25°C	20.386 mS	P

**INPUT FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE RANGE	80VAC ~ 264VAC	I/P:TESTING O/P:FULL LOAD Ta:25°C	56V ~ 264V	P
2	FREQUENCY RANGE	50HZ - 60HZ (Typ) NO DAMAGE OSC	I/P: 100VAC ~ 240VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK	P
3	EFFICIENCY	88.5% (Typ)	I/P:230VAC O/P:FULL LOAD Ta:25°C	89.35%	P
4	AVERAGE EFFICIENCY	86.95%( DoE LEVEL VI) 87.70%(CoC Version 5)	I/P:115/230VAC O/P:25%、50%、75%、100% LOAD Ta:25°C	88.53% (115VAC) 88.73% (230VAC)	P
5	AC CURRENT	1.0A (Max)	I/P: 100VAC O/P:FULL LOAD Ta:25°C	0.552A	P
6	NO LOAD POWER CONSUMPTION	< 0.1W (Max)	I/P:230VAC O/P: NO LOAD Ta:25°C	0.0724W	P

7	INRUSH CURRENT	< 65A COLD START	I/P:230VAC O/P:FULL LOAD Ta:25°C	64.5A	P
8	LEAKAGE CURRENT	< 0.1mA	I/P:240VAC O/P:Min LOAD Ta:25°C	L-FG: 0.02mA N-FG: 0.02mA	P

## PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	120% ~ 200%	I/P:230VAC O/P:TESTING Ta:25°C	2.26A (181%) HICCUP MODE RESET : AUTO RECOVER	P
2	OVER VOLTAGE PROTECTION	110% ~ 140%	I/P:230VAC O/P:MIN LOAD Ta:25°C	Clamp by ZENER diode MMSZ5254BF (27V)	P
3	SHORT PROTECTION	SHORT OUTPUT 1 HOUR NO DAMAGE	I/P:264VAC O/P:FULL LOAD Ta:25°C	NO DAMAGE HICCUP MODE RESET AUTO RECOVER	P

## ■ SAFETY TEST

### SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:5656 VDC/min	I/P-O/P:5656 VDC/min Ta:25°C	I/P-O/P: 0.03uA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P:500 VDC Ta:25°C	I/P-O/P>100MΩ NO DAMAGE	P

**RELIABILITY TEST**
**ENVIRONMENT TEST**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:100% LOAD Ta=25°C 2. HI AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:100% LOAD Ta=40°C 3. HI AMBIENT BURN-IN : 4HRS I/P:230VAC O/P:50% LOAD Ta=70°C			P
2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOURS	I/P : 230VAC O/P : 100% LOAD Ta= -25°C	TEST : OK	P

**OTHER**

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C6 IS THE MOST CRITICAL COMPONENT ( 7000hrs ) I/P:230 VAC O/P:100% LOAD Ta=25°C LIFE TIME= 124271HRS I/P:230 VAC O/P:100% LOAD Ta=40°C LIFE TIME= 45171HRS I/P:230 VAC O/P:50% LOAD Ta=70°C LIFE TIME= 16392HRS			P
2	MTBF	MIL-KDBK-217F NOTICES 2 PARTS COUNT TOTAL FAILURE RATE : 1.833949 M.T.B.F : 545271 HRS			P

TEST RESULT	TESTER	APPROVAL
PASS	ARCHEN	VINCENT ZENG