Leakage Current and Visibility Test Report

Description of Sample:
Product : Tester
Type : 663T1 (with built-in 680K/ 820K/1000K ohm resistor)
Submittor: Kauw Yehi Industrial Co., Ltd.

Test on 1 specimens for each type, sampling from ☒ separated prepared by Applicant,
☐ dis-assemble/cut from _____

Sample received on : July 25 ,2006

The device has been tested according to the standard of IEC 60990 for the leakage current test.
Test results are valid only for the test samples. The report can only be copied in full. Partial duplication should have the authorization from the test lab.

Name and address of the testing laboratory :

Universal Testing Inc.

2F,No.13,Lane 28,Sec.1,Huanshan Rd., NeiHu, Taipei, Taiwan, R.O.C.

Simon Hsieh.

Compiled by : _____ July 25, 2006
Signature Date

Simon Hsieh
Engineer

Steven Chang

Reviewed by : _____ July 25, 2006
Signature Date

Steven Chang
Manager

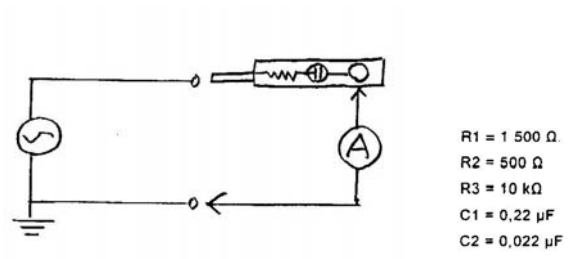
1. Preconditioning the Tested Samples

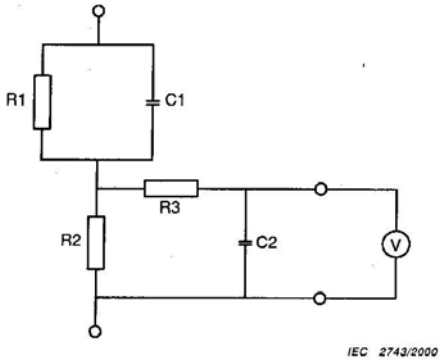
samples were tested as received

2. Test Procedures

1) Leakage Current Test

The sample was put on an insulated table with the connection as below. A leakage current meter is used to detect the current flowing from the conductive control button to the return of the power system. The tester pin touched the line side of the power system. The neutral side is connected with the protective earth as in the TNS power system. The leakage current meter is set at the react response network with the following circuit.





R1 = 1 500 Ω
R2 = 500 Ω
R3 = 10 kΩ
C1 = 0,22 µF
C2 = 0,022 µF

3. Result

Test Voltage	Measured Current		
	With 820K ohm resistor	With 1000K ohm resistor	With 680K ohm resistor
110 V 50 Hz	0.075 mA	0.065 mA	
110 V 60 Hz	0.075 mA	0.065 mA	
136 V 50 Hz	0.11 mA	0.09 mA	
136 V 60 Hz	0.11 mA	0.09 mA	
220 V 50 Hz	0.21 mA	0.175 mA	
220 V 60 Hz	0.21 mA	0.175 mA	
250 V 50 Hz	0.25 mA	0.21 mA	0.29 mA
250 V 60 Hz	0.25 mA	0.21 mA	0.3 mA
250 V 50 Hz after 5 minutes	0.25 mA	0.21 mA	0.29 mA
250 V 60 Hz after 5 minutes	0.25 mA	0.21 mA	0.3 mA

2) Visibility Check

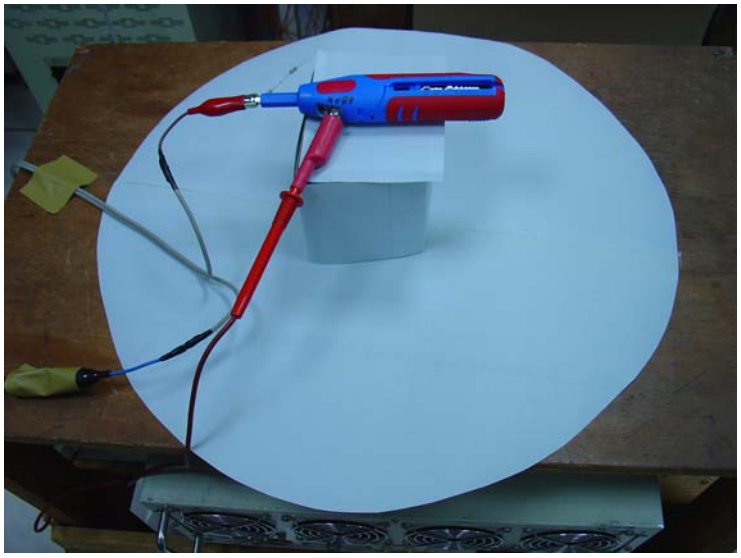
The test sample was put 100mm over a light gray paper 50cm in diameter. The tester touched the line side of the power system with 93.5Vac output. A current meter was connected to the touch button and back to the neutral side of the power system. The test room is with normal fluorescent lamps on the top. Three persons stood beside the tester with eyes 300mm away from the tester indicator at about 45 degree . The visibility of the indicator was checked with bare eyes after 30 seconds , 1 minute and 5 minutes. The output of the power system is then connected in series with a 20 M ohm resistor (2 pcs of 10M ohm resistor in series) and above procedures were repeated again.

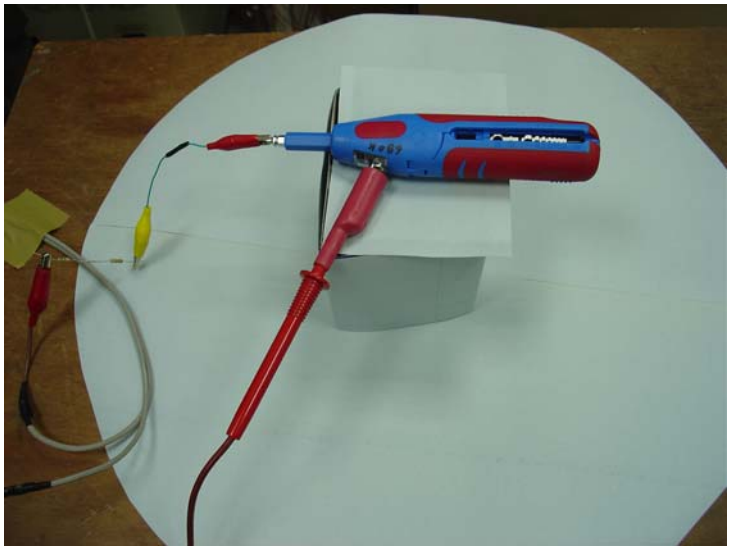
Test Voltage	Visibility from 3 persons								
	With 820K ohm resistor			With 1000K ohm resistor			With 680K ohm resistor		
	30 seconds	1 minute	5 minutes	30 seconds	1 minute	5 minutes	30 seconds	1 minute	5 minutes
93.5V 50Hz	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
93.5V 60Hz	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
93.5V 50Hz in series with 20M ohm resistor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
93.5V 60Hz in series with 20M ohm resistor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

3. List of Test Equipments

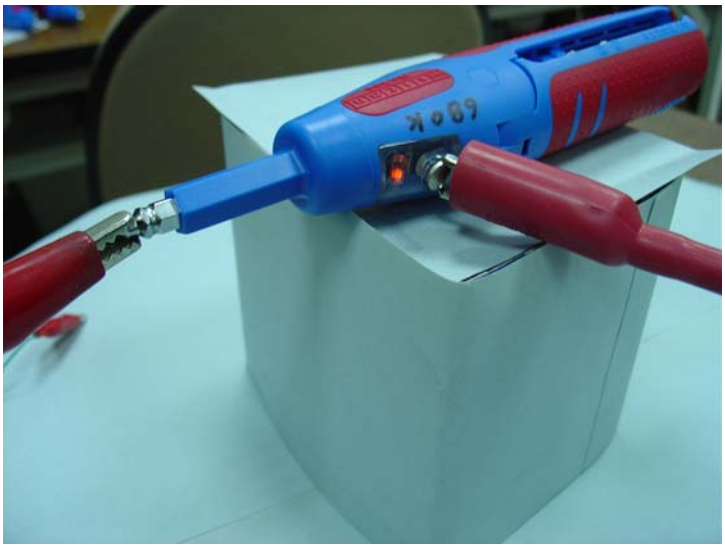
Description	Manufacturer	Type	Serial No.	Last Cal.	Next Cal.
Leakage Current Tester	Simpson	228	20922	2006.03.17	2006.03.16
Power Meter	IDRC	CP-310	368018	2006.03.17	2006.03.16
Stopwatch	Wisewind		E950629-3	2006.07.04	2006.07.03

Attachment 1 Photos of visibility test configuration

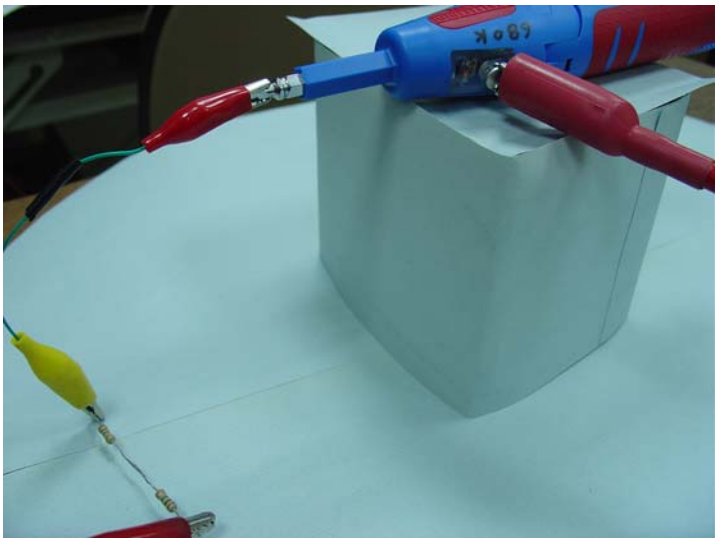




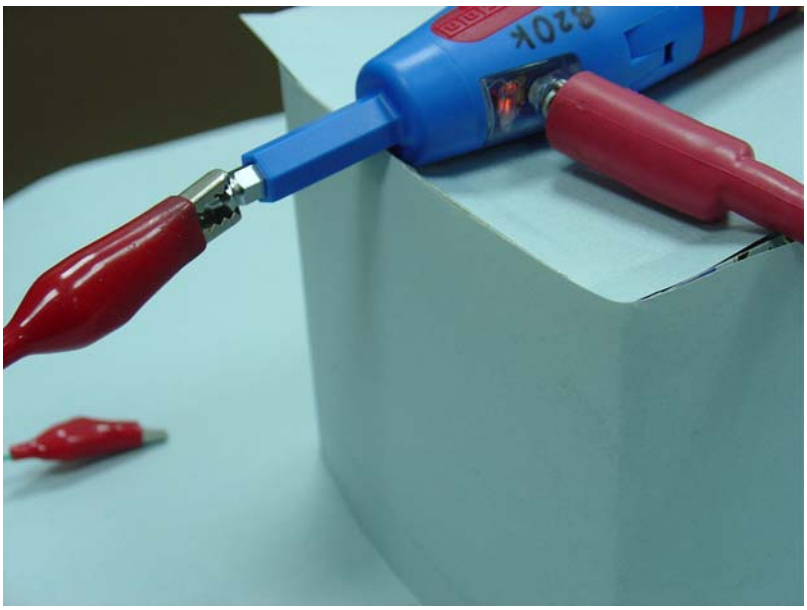
Attachment 2 Photos of visibility at 300mm distance



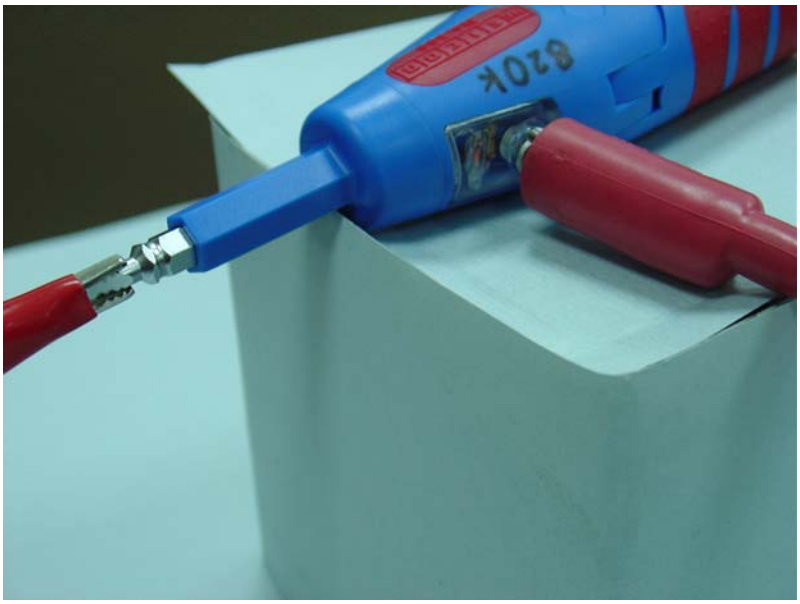
with built-in 680K resistor



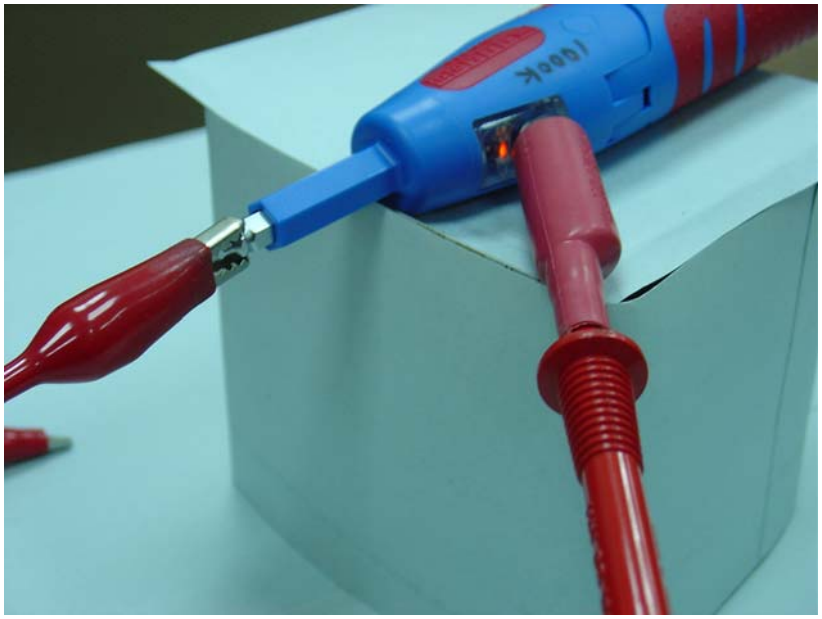
with built-in 680K resistor and external 20M resistor



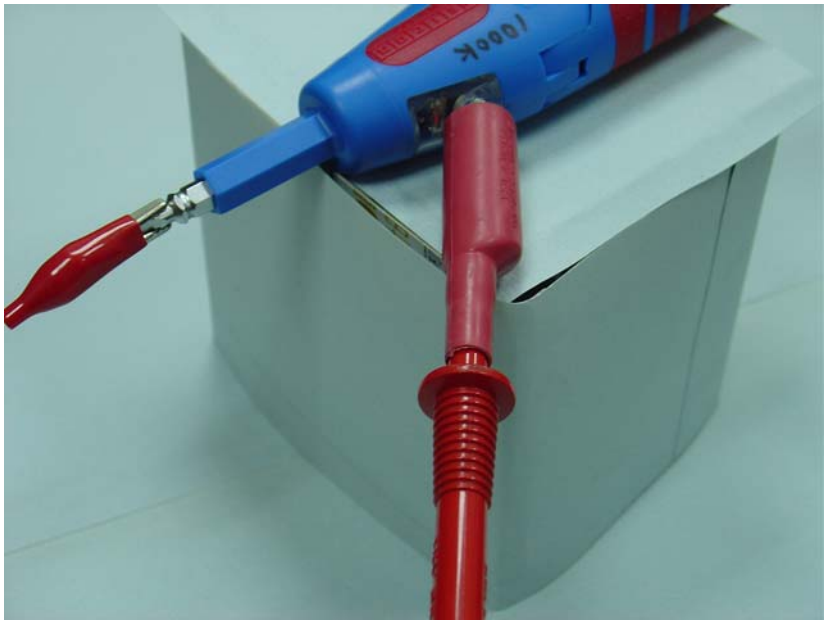
with built-in 820K resistor



with built-in 820K resistor and external 20M resistor



with built-in 1000K resistor



with built-in 1000K resistor and external 20M resistor

Attachment 3 Test Equipments Calibration Reports

Leakage Current Tester 2 pages

Power Meter 2 pages

Stopwatch 2 pages