1. GENERAL SPECIFICATIONS OF I-V400w MODEL

HT ITALIA enlarges its range of products for photovoltaic system introducing the new **I-V400w**

The instrument allows the on field measurement of I-V curve as well as of the main parameters of a single module and of a whole photovoltaic system **up to a maximum of 1000V and 15A**

The acquired data are then worked out and transferred to the reference conditions (STC) in order to compare them with the rated data declared by the manufacturer of those modules. The comparison between the detected and the rated data permits to immediately determine whether the string or the module respect the parameters declared by the manufacturer.

The instrument allows to perform quick tests (IVCK) to measure the open voltage Voc and short circuit current Isc on PV module/strings output also without irradiation conditions

I-V400w manages an internal database of the most common photovoltaic modules. Such a database can be updates at any time by the user both through the management software and directly through the instrument's interface. **The save data can be downloaded to PC also with WiFi connection**

2. ELECTRICAL SPECIFICATIONS

Accuracy is calculated as ± [% reading + (number of dgts) x resolution] at 23°C ± 5°C, <80%HR

VDC Voltage @ OPC

Range (V) (***)	Resolution (V)	Accuracy
5.0 ÷ 999.9	0.1	±(1.0%rdg+2dgt)

(***) The I-V curve and Rs measurements start for VDC > 15V and the accuracy is defined for VDC > 20V

IDC Current @ OPC

Range (A)	Resolution (A)	Accuracy
0.10 ÷ 15.00	0.01	±(1.0%rdg+2dgt)

Max Power @ OPC (Vmpp >30V, Impp >2A)

Range (W) (*, **)	Resolution (W)	Accuracy
50 ÷ 9999	1	±(1.0%rdg+6dgt)

Vmpp = Maximum power voltage, Impp = Maximum Power Current
(*) Max measurable value of Power must include FF value(~ 0.7) → Pmax = 1000V x 10A x 0.7 = 7000W
(**) Test is stopped and the message "Thermal instability" occurs if the instrument detects Voltage > 700V and Current I >3A, I > -0.038*V + 37.24 - 0.5

VDC Voltage (@ STC and OPC), IVCK

Range (V) (***)	Resolution (V)	Accuracy (*,**)
5.0 ÷ 999.9	0.1	±(4.0%rdg+2dgt)

IDC Current (@ STC and OPC), IVCK

Range (A)	Resolution (A)	Accuracy (**)
0.10 ÷ 15.00	0.01	±(4.0%rdg+2dgt)

Max Power @ STC (Vmpp >30V, Impp >2A)

Range (W) (*, **)	Resolution (W)	Global accuracy (**)
50 ÷ 9999	1	±(5.0%rdg+1dgt)

Vmpp = Maximum power voltage, Impp = Maximum Power Current
(*) Measurements start for VDC > 15V and the accuracy is defined for VDC > 20V
(**) Test conditions:

- Test cond.: Steady Irrad.≥700W/m^2 , spectrum AM 1.5,solar incidence vs perpendicular. ≤ ± 25°, Cells Temp. [15..65°C]
- Global accuracy include contribute of solar sensor and its measuring circuit

Irradiance (with reference cell)

Range (mV)	Resolution (mV)	Accuracy
1.0 ÷ 100.0	0.1	±(1.0%rdg+5dgt)

Temperature of module (with auxiliary PT1000 probe)

Range (°C)	Resolution (°C)	Accuracy
-20.0 ÷ 100.0	0.1	±(1.0%rdg+1°C)

3. GENERAL SPECIFICATIONS

DISPLAY AND MEMORY:	
Features:	128x128pxl custom LCD with backlight
Memory capacity:	256kbytes
Saved data:	249 curves (I-V curve test), 999 IVCK
POWER SUPPLY:	
SOLAR I-V internal power supply:	6x1.5V alkaline batteries type LR6, AA, AM3, MN 1500
Autonomy of SOLAR I-V:	> 249 curve (I-V curve test), 999 IVCK test approx 120 hours (yield test)
SOLAR-02 power supply:	4x1.5V alkaline batteries type AAA LR03
SOLAR-02 max recording time (@ IP=5s):	approx 1.5h
OUTPUT INTERFACE	
PC communication port:	optical/USB and WiFi
Interface with SOLAR-02 :	wireless RF comunication (max distance 1m)
MECHANICAL FEATURES	
Dimensions (L x W x H):	235 x 165 x 75mm
Weight (batteries included):	1.2kg
ENVIRONMENTAL CONDITIONS:	
Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Working humidity:	<80%HR
Storage temperature (batt. not included):	-10 ÷ 60°C
Storage humidity:	<80%HR
GENERAL REFERENCE STANDARDS:	
Safety:	IEC/EN61010-1
EMC:	IEC/EN61326-1
Safety of measurement accessories:	IEC/EN61010-031
I-V curve measurement:	IEC/EN60891 (I-V curve test) IEC/EN60904-5 (Temperature measurement)
Insulation:	double insulation
Pollution degree:	2
Overvoltage category:	CAT II 1000V DC, CAT III 300V AC to ground Max 1000V among inputs P1, P2, C1, c2
Max altitude of use:	2000m

This instrument complies with the requirements of the European Low Voltage Directives 2006/95/EC (LVD) and EMC 2004/108/EC
This instrument satisfies the requirements of 2011/65/EU (RoHS) directive and 2012/19/EU (WEEE) directive