SPRAI LUMINAIRE TEST SYSTEM



TEST SPECIFICATION

CENELEC specification EN 60598-1 (LUMINAIRES - PART 1: GENERAL REQUIREMENTS AND TESTS) has been issued to the purpose of establishing quality and safety requirements for lighting devices. It rules that in ordinary usage, consisting from the point of view of the temperature, of subsequent periods of heating up and cooling down, the device does not stop working and does not constitute a risk for the user. A duration test is specified to simulate the ordinary usage. Furthermore a heating test is called up intended to check in normal and abnormal conditions that in no point of the luminaire (DUT), including the lamp, the temperature becomes excessive for the safety of the users.

PRODUCT

SPRAI is an acronym in italian language that stands for "luminaire heating test stand". SPRAI offers a global solution, made of hardware and software, for the automatic execution of accurate measurements in accordance with EN 60598-1. It has been developed for the Italian Institute in charge of the certification of lighting devices (IMQ).

The major advantages the use of SPRAI offers are:

- full compliance with the test specification
- ▶ up to six tests at once
- minimal intervention by the operator
- accurate measurements
- automatic generation of reports
- archiving of test results

HARDWARE

The standard configuration has a capability of 3 tests at the same time. It is formed of a CONTROL UNIT and a separate ACQUISITION UNIT. The expanded configuration, with a 6 tests capability, is achieved by the addition of an AUXILIARY CONTROL UNIT and a second ACQUISITION UNIT.

The CONTROL UNIT is a 19" cabinet containing:

- DUT power supply
- measurement instrumentation
- ancillary equipment

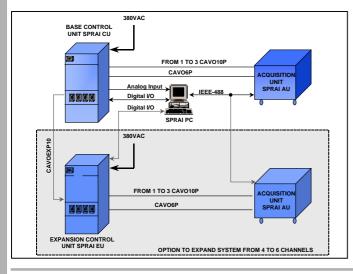
The temperature measuring instruments are housed instead in the ACQUISITION UNIT for an easier connection to the DUT: the ACQUISITION UNIT is typically located in the test room close to the DUT.

The AUXILIARY CONTROL UNIT is similar to the CONTROL UNIT, the major difference being the absence of some circuitry that does not need to be redundant. In the standard configuration the ACQUISITION UNIT includes two temperature acquisition instruments for a total of 40 thermocouples, three terminal areas on the front panel for the connections of the thermocouples and three more for the supply of the DUT's. The thermocouples, type K and T, are not part of the supply; they are selected and provided by the user. Different configurations can be provided subject to negotiation and TESEO ad-hoc quotation. In particular the standard 3 channel configuration can be simplified and reduced up to 1 test only capability.



TECHNICAL SPECIFICATIONS

■ CONTROL UNIT	
Power supply	: three phase
220/380VAC	with breaker (220VAC
	single phase option).
Process control unit	: PC with
	▶ 15" color Monitor
	▶ 128 MB RAM
	▶ 20 GB Hard disk
	CD-ROM
	▶ Ethernet
	GPIB, I/O board &
	cables
DUT power supply (output)	: 85 - 260 VAC, option
	12/24VAC, with breaker
DUT supply accuracy	: +/-1%
Voltage/current measurement range	: 0 - 270 V, 0 - 10 A per
0	channel
Voltage/current measurement accuracy	: 0.5%
Transformer measurement range	: 0 - 400 Ohm
Transformer temperature accuracy	: 1°C
Short circuit relay	: 260V, 10A (option 45A)
ACQUISITION UNIT	
Power supply	: 220VAC single phase
	received from control
	unit
Number of terminals	: from 1 to 3
Number of thermocouples	: up to 40, of which one
	is for ambient
	temperature acquisition
Thermocouples distribution	: 20 first DUT, 10 each
	the other two DUT's
Temperature measurement range	: 25 - 400 °C
Temperature measurement accuracy	: 0.5%



APPLICATION SOFTWARE

The software, developed by IMQ with LabVIEW $^{\!\!\rm S}$ under Windows $95^{\!\!\rm S}$, is formed of the following modules:

A) CONFIGURATION

- It allows entering the test data like:
 - type of test and device under test
 - nominal voltage and current, max current
 - test duration
 - identification of thermocouples and max temperatures

B) MONITOR

It allows the display of:

- supply (voltage, current, power, phase angle)
- temperatures (numeric or graphic form)
- time to completion of test

C) GRAPHICS

It allows strip chart type representation of up to 10 temperatures

D) PRINT

It allows printing and filing of measurement results

SYSTEM PARTS

SPRAI CU SPRAI AU	Control unit Acquisition unit
SPRAI PC CAVO10P CAVO6P	Process control unit Supply/sensing cable I = 8m (1 for channel)
	Power supply cable for SPRAI AU I = 8m IEEE-488 cable I = 8m Application software for SPRAI CU

OPTIONS

SPRAI EU Expansion control unit SPRAI AU Acquisition unit SPRAI DIO24 24 bit Digital I/O Board + 37 pole Cable CAVO10P Supply/sensing cable (1 for channel) Power supply cable for SPRAI AU CAVO6P CAVOIEEE488 IEEE-488 cable TRASF-BT 12/24 VAC adapter for low voltage lamp CAVOEXP10 Expansion 9 pole Analog Input flat cable CAVO220ADAPT Single phase supply adapter

STANDARD CONFIGURATION (3 CHANNELS)

SPRAI CU
SPRAI AU
SPRAI PC
CAVO10P
CAVO6P
CAVOIEEE488

Your local agency

DS002AC - 10/03

TESEO S.p.A.

COMPETENT BODY

ACCREDITED LABORATORY

technologies and systems on electronics and optics

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