

THE HYBRID RADIOMETERS

RHC30 V5.2

**Universal Radiometer and Digital Pulse Analyser
for flash pulsed YAG lasers
(0,5Hz - 1000Hz / 0,1ms - 50ms) / (0,4 μ m - 1,1 μ m)**

THE RHC30 V5.2 IS THE ULTIMATE GENERATION OF THE HYBRID RADIOMETERS PATENTED BY LASER METROLOGIE IN 1995. IT IS ABLE TO DO MEASUREMENTS ON FLASH PUMPED PULSED LASERS IN THE ALL OPERATING MODES : CONTINUOUS, PULSED SINGLE AND BURST. IT USES THE BEST TECHNOLOGIES : AN ABSORBING CONE WITH A SPECIAL RESISTANT COATING, AN OPTIMISED THERMAL DESIGN WITH AIR COOLING FOR P<100W OR WATER COOLING FOR P<600W, AN HIGH QUALITY THERMOPILE IN WELDED WIRES WITH LOW NOISE AMPLIFICATION CIRCUITS, A PHOTODIODE WITH AN AUTOMATIC AMPLIFICATION CONTROL ACCORDING THE PEAK POWER DENSITY, A SPECIAL NUMERIC DESIGN FOR THE PULSE DIGITALISATION, THE LAST MICROCONTROLLER GENERATION 16BITS/25MHZ, AND A HIGH-LEVEL CODE IN C LANGUAGE TO PERFORM ALL MEASUREMENTS (W, J, Hz, kW, ms, N.b. of Pulses, Fluctuations). THE RHC30 V5.2 IS BUILT WITH HIGH QUALITY COMPONENTS AND WAS STUDIED TO OFFER AT THE DIFFERENT CUSTOMERS : INDUSTRIALS, MANUFACTURERS, LABORATORIES, AN EASY USE ASSOCIATED WITH HIGH FUNCTIONS. AN OPTIONAL WINDOWS SOFTWARE IS AVAILABLE TO DISPLAY AND SAVE THE LASER PULSE SHAPES. THE HYBRID RADIOMETER RHC30 V5.2 IS A PULSE ANALYSER WHICH CAN BE USED IN ALL TYPES OF PROCESS AS LASER DRILLING OR LASER SOLDERING WITH POINTS OR WITH CORDON



WATTMETER

Measurements in
CW Mode

THE MEAN POWER : up to 650W / $\pm 3\%$

P<100W - Air cooling - Resolution 0,01W

P<600W - Water cooling without regulation - Resolution 0,1W

Response time : 30s (99,5%) - 42s (100%)

PULSEMETER

Measurements in
**PULSED Mode in
continuous (>1Hz)**

THE MEAN POWER : up to 650W / $\pm 3\%$

THE PULSE ENERGY (The mean value) : up to 150J - Res. 0,01J

THE PEAK POWER : up to 50kW - Resolution 0,01kW

THE PULSE WIDTH : up to 50ms - Resolution 0,01ms

THE FREQUENCY : up to 1000Hz - Resolution 0,01Hz

THE FLUCTUATIONS : combine energy and spatial density

P<100W - Air cooling - Resolution 0,01W

P>100W - Water cooling without regulation - Resolution 0,1W

Response time : 30s (99,5%) - 42s (100%)

DIGITAL PULSE ANALYSER

Measurements in
**BURST Mode for 1 to
500 pulses (>0,5Hz)**

FOR A BURST with 1 to 500 pulses maximum :

- The mean power / $\pm 5\%$
- The number of pulses (-)
- The frequency (Hz)
- The fluctuations (%)

AND FOR EACH PULSE in the burst :

- The pulse energy : up to 150J / $\pm 5\%$ - Res. 0,01J
- The maximum peak power : up to 50kW - Res. 0,01kW
- The pulse width : up to 50ms - Resolution 0,01ms

Air Cooling for a BURST with a total energy < 1000 J

Water Cooling for a BURST with a total energy > 1000 J

Fast response time : from 2s up to 4s for 500 pulses

DIGITAL SCOPE

Measurements in
BURST Mode

ONLY WITH THE WINDOWS SOFTWARE

Measurement of the background noise - 8 bits resolution

Complete digitalisation during 4 seconds : pulse + laser noise

LASER METROLOGIE

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