

## ANALYSIS OF THE DYNAMO LAMP\*

The first results are following:

### **Full grasp**

1. When I implemented 25 grasps in 10 seconds (2.5 per second) I got effective energy of 0.103 A

I - effective = 0.103 A

U - effective = 3.6 V

P (average) = 0.384 W

2. With a full grasp in one second I got (one full grasp per second)

I - effective = 0.085 A

U - effective = 2.54 V

P = 0.225 W

### **Half-grasp**

1. 25 half-grasps in 10 seconds (2.5 per second)

I - effective = 0.059 A

U - effective = 1.22 V

P = 0.065 W

2. One half-grasp per second

I - effective = 0.043 A

U - effective = 0.65 V

P = 0.030 W

3. One half-grasp in two seconds

I - effective = 0.021 A

U - effective = 0.55 V

P = 0.009 W

Input voltage and output power were measured. Resistance of the A-meter is 0.1 ohm, and V-meter 10 mega ohm. A-meter did not have influence since the resistance of the cold bulb is approximately 4 ohm. The instrument has a built-in wattmeter, so it uses measured voltage and measured power to measure force. Since reading is performed once every two seconds, result  $U * I$  differs from the shown force.

The signal is a slightly malformed sine whose amplitude changes with the speed of disk revolutions, as well as frequency. In neutral position, peak voltage is 15 V without a bulb, and frequency approximately 200 Hz. When the bulb is positioned, voltage decreases to 10 V, and frequency to 100 Hz.

Dr Slobodan Milovančev

Faculty of Technical Sciences, University of Novi Sad, Serbia  
Institute of Energetics, Electronics and Telecommunications  
Department for Electrical Measuring

Novi Sad, Serbia, 02<sup>nd</sup> December 2005

**\*USED DYNAMO LAMP**

