CARANDINI LABORATORY REPORT

The purpose was to test the performance of the “DIGITEK-ILT” energy saver model SLT07230L50: connected to a 250 watt sodium vapour installation composed of:

Lamp: Silvania SHP-T250w
Ballast: Layrton HIS-SAPI 25/23-2
Capacitor: LIFA 32μF (removed when DIGITEK-ILT was connected)
Starter: Layrton IG-05/2

We checked on diverse electric parameters (voltage, current, KW and power factor cosφ) first with high power factor and then with low power factor. Then we installed DIGITEK-ILT between the power supply and the lamp (BF), and checked the parameters at different power supply voltages. The results are shown below.

1. Without DIGITEK the readings are:

	Voltage (V)	Current (A)	Watt (W)	Cosφ
With Capacitor	230	1.4	282.5	0.88
Without Capacitor	203	2.68	287.5	0.41

2. With DIGITEK and without capacitor the readings are:
    a. Power supply voltage = 203

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	203	2.68	202.5	0.37
Output Voltage	203	2.68	202.5	0.37

    b. Power supply voltage = 210

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	210	2.75	232.5	0.40
Output Voltage	210	2.75	232.5	0.40

    c. Power supply voltage = 220

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	220	2.95	252.5	0.39
Output Voltage	215	2.9	230	0.37

    d. Power supply voltage = 230

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	230	3.05	287.5	0.41
Output Voltage	214	2.75	212.5	0.36

    e. Power supply voltage = 240

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	240	3.15	320	0.42
Output Voltage	216	2.68	215	0.37

    f. Power supply voltage = 250

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	250	3.24	355	0.44
Output Voltage	222	2.8	217.5	0.35

g. Power supply voltage = 260

	Voltage (V)	Current (A)	Watt (W)	Cosφ
Input Voltage	260	3.3	395	0.46
Output Voltage	237	3.07	255	0.35

Observations:

1. 15 minutes after the power is switched on, if the voltage is above nominal, it will start to drop progressively (as indicated in the instructions), resulting in a reduction of the total voltage.
2. With voltages below the nominal it will not act in any way.
3. There is no change on power factor.
4. Logically reducing the voltage will prolong the life of the lamps..

Conclusion:

This is a reducing device but with a smaller percentage of variation and without the option of modifying the timing. It could be compared with devices, which are situated in control panels, which act as power reducers and stabilizers.