

PROJECT PROFILE ON ELECTRONIC BALLAST

1. **PRODUCT** : **ELECTRONIC BALLAST**

2. **PRODUCTION CAPACITY (PER ANNUM)** : **60,000 Nos. of 40 W Electronic Ballast.**

3. **MONTH & YEAR OF PREPARATION** : **February, 2013.**

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1. INTRODUCTION :-

Electronic high-frequency ballasts is a device which controls the starting voltage and the operating currents of lighting devices built on the principle of electrical gas discharge. Electronic ballasts operate lamps using electronic switching power supply circuits. Electronic ballasts take incoming 50 Hz power (220 volts) and convert it to high-frequency AC (usually 20 to 40 kHz).

2. MARKET POTENTIAL:

Electronic high-frequency ballasts increase lamp-ballast efficacy, leading to increased energy efficiency and lower operating costs. Electronic ballasts are more efficient than magnetic ballasts in converting input power to the proper lamp power, and their operating of fluorescent lamps at higher frequencies reduces end losses, resulting in an overall lamp-ballast system efficacy increase of 15% to 20%.

Other advantages of the electronic ballast include reduced weight, quieter operation, and reduced lamp flicker. Electronic ballasts are directly interchangeable with magnetic ballasts, and they are available to operate most full-size and compact fluorescent lamps. Thus Electronic Ballast has got an enormous market potential.

3. BASIS & PRESUMPTIONS:

- i) The basis for calculation of production capacity has been taken on single shift basis on 75% efficiency.
- ii) The maximum capacity utilization on single shift basis for 300 days a year. During first year and second year of operations the capacity utilization is 60% and 80% respectively. The unit is expected to achieve full capacity utilization from the third year onward.
- iii) The salaries and wages, cost of raw materials, utilities, rents etc. are based on the prevailing rates in and around Kanpur. These cost factors are likely to vary with time and location.
- iv) Interest on term loan and working capital loan has been taken at the rate of 16% on an average. This rate may vary depending upon the policy of the financial institutions/agencies from time to time.

- v) The cost of machinery and equipments refer to a particular make / model and prices are approximate.
- vi) The break-even point percentage indicated is of full capacity utilization.
- vii) The project preparation cost etc. whenever required could be considered under pre-operative expenses.
- viii) The essential production machinery and test equipment required for the project have been indicated. The unit may also utilize common test facilities available at Electronics Test & Development Centers (ETDCs) and Electronic Regional Test Laboratories (ERTLs) and Regional Testing Centers (RTCs).

The following presumptions have been taken in to account –

i) Voltage Range – 220V, 50 HZ .

ii) Basis of calculations – 40 W.

4. Implementation Schedule:

The major activities in the implementation of the project have been listed and the average time for implementation of the project is estimated at 12 months:

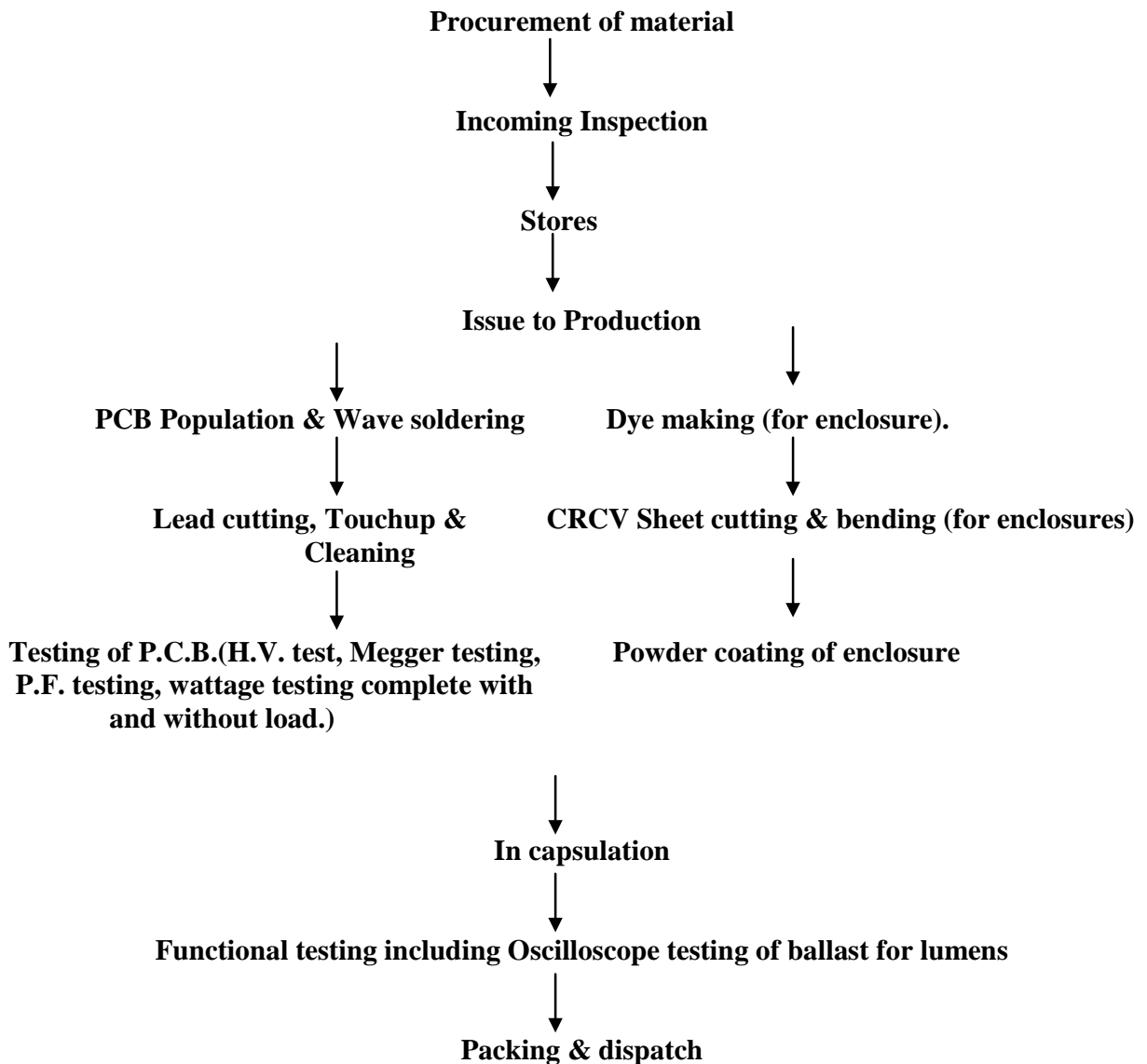
Sr. No.	Activity	Period (in months)
1.	Preparation of project report	1
2.	Registration and other formalities	1
3.	Sanction of loan by financial institutions	2
4.	Plant & Machinery	
	a) Placement of orders	1
	b) Procurement	1
	c) Power connection/Electrification	1
	d) Installation / Erecting of Machinery/Test Equipment	1
5.	Procurement of raw materials	1
6.	Recruitment of Technical Personnel etc.	1
7.	Trial Production	9 th month

Note :

1. Many of the above activities shall be initiated concurrently.
2. Procurement of raw materials commences from the 8th month onwards.
3. When imported plant and machinery are required, the implementation period of project may vary from 12 months to 15 months.

5. TECHNICAL ASPECTS:

I PROCESS OF MANUFACTURE: Flow chart of Electronic Ballast is as follows:-



II. QUALITY CONTROL & STANDARDS:

The Bureau of Indian Standard has laid down specifications:
IS: 3021(Part –I & Part- II):1991 for electronic ballast.

III. PRODUCTION CAPACITY PER ANNUM :

Quantity: 60,000 per annum.
Value : Rs. 42,00,000/-

IV. MOTIVE POWER: 2 KW

V. POLLUTION CONTROL:

The Govt. accords utmost importance to control environmental pollution. The small-scale entrepreneurs should have an environmental friendly attitude and adopt pollution control measures by process modification and technology substitutions.

India having acceded to the Montreal Protocol in September, 1992, the production and use of Ozone Depleting Substances (ODS) like Chlorofluoro Carbon (CFCs), Carbon Tetrachloride, Halson and Methyl Chloroform etc. need to be phased out immediately with alternative chemicals/solvents. A notification for detailed Rules to regulate ODS phase out under the Environment Protection Act, 1986 have been put in place with effect from 19th July, 2000.

The following steps are suggested which may help to control pollution in electronics industry wherever applicable:

- i) In electronic industry fumes and gases are released during hand soldering/wave soldering/Dip soldering, which are harmful to people as well as environment and the end products. Alternate technologies may be used to phase out the existing Polluting technologies. Numerous new fluxes have been developed containing 2-10% solids as opposed to the traditional 15-35% solids.

- ii) Electronic industry uses CFCs, carbon Tetrachloride and Methyl Chloroform for cleaning of printed circuit boards after assembly to remove flux residues left after soldering, and various kinds of foams for packaging.

Many alternative solvents could replace CFC-113 and Methyl/Chloroform in electronics cleaning. Other Chlorinated solvents such as trichloroethylene, per chloroethylene and methylene chloride have been used an effective cleaner in electronics industry for many years. Other organic solvents such as ketones and Alcohols are effective in removing both solder fluxes and many polar contaminants.

VI. ENERGY CONSERVATION:

With the growing energy needs and shortage coupled with rising energy cost, a greater thrust in energy efficiency in industrial sector has been given by the Govt. of India since 1980s. The Energy Conservation Act 2001 has been enacted on 18th August, 2001, which provides for efficient use of energy, its conservation & capacity building of Bureau of Energy Efficiency created under the Act.

The following steps may help for conservation of electrical energy:-

- i) Adoption of energy conserving technologies, production aids and testing facilities.
- ii) Efficient management of process/manufacturing machineries and systems, QC and testing equipments for yielding maximum Energy Conservation.
- iii) Optimum use of electrical energy for heating during soldering process can be obtained by using efficient temperature controlled soldering and de-soldering stations.
- iv) Periodical maintenance of motors, compressors etc.
- v) Use of power factor correction capacitors, Proper selection and layout of lighting system; timely switching on-off of the lights; use of compact fluorescent lamps wherever possible etc.

6. FINANCIAL ASPECTS:

(A) Fixed Capital:

(i) Land and Building

Built up Area - 200 Sq.mtrs.
Rent (per month) @ Rs.25/- per sq.mtr.

(ii) Rent payable/month Rs.5000/-
Machinery & Equipments:

Sl. No.	Particulars	Ind./Imp.	Qty. (Nos.)	Value (Rs.)
(a) Production Unit :				
1.	Hand Press (5 no.)	Ind.	1	8000/-
2.	Sheering Press(2 ft)	Ind.	1	5000/-
3.	Hand winding machine	Ind.	1	2000/-
4.	Dye	Ind.	1	3000/-
5.	Arrangement for wave soldering through manual dipping	Ind.	1	2000/-
6.	Oscilloscope (5 MHz)	Ind.	1	50,000/-
7.	Electronic frequency meter(50 Hz)	Ind.	1	8000/-
8.	Electronic Voltmeter(300 V)	Ind.	1	4000/-
9.	Electronic Ampere meter (0-1 Amps.)	Ind.	1	4000/-
10.	Electronic Watt Meter(0-100 W)	Ind.	1	10,000/-
11.	Megger(500 Ohms.)	Ind.	1	4000/-
12.	High Voltage Tester (5 KVA)	Ind.	1	5000/-
Total :				1,05,000/-
(b) Other fixed Assets :				
i)	Office furniture & other office equipments			30,000/-
Total (a)+(b)				1,35,000/-
(c) Pre-operative expenses				10,000/-
Total (a)+(b)+(c)				1,45,000/-

(B) Working capital (Per month)

(a) Staff & Labour (Per month)

Sl. No.	Particulars	No.	Salary/per month	Amount Rs.
a) Admn. & Supervising				
i.	Works Mgr./Engr./Supervisor	1	8000/-	8000/-
ii.	Office Boy/Peon	1	4500/-	4500/-
iii.	Chowkidar	1	4500/-	4500/-

			Total :(a)	17,000/-
(b)	Technical Skilled & unskilled			
i.	Skilled worker	1	6000/-	6000/-
ii.	Unskilled	6	4500/-	27,000/-
			Total :(b)	33,000/-
			Total :(a)+(b)	50,000/-

ii. Raw Material : (Per month)

Sl. No.	Particulars	Qty.	Rate/per Rs.	Amount Rs.
1.	P.C.B.	5000	5/-	25,000/-
2.	Connectors (3 pcs. Per PCB)	15000	1/-	15,000/-
3.	Electronic Components	5000 sets	25/- per set	1,25,000/-
4.	CRCA sheets	250 kgs.	50/-	12,500/-
5.	Paint/Powder coating charges	5000 pcs.	1/-	5000/-
6.	Polyester film paper(insulator)	50 kgs.	110/-	5500/-
7.	Packing material	5000 pcs.	1.20/-	6000/-
			Total :	1,94,000/-

(iii) Utilities Per month:

Power 200 units @ Rs.5.50 per unit	Rs.1,100
Water	Rs. 500
	<u>Rs.1,600</u>

(iv) Other Contingent Expenses (per month) :

Sl. No.	Particulars	Amount Rs.
1.	Rent	5,000
2.	Postage & Stationery	1,000
3.	Telephone	1,000
4.	Transportation	5,000
5.	Consumable stores	1,000
6.	Insurance	1,000
	Total :	14,000

TOTAL RECURRING EXPENDITURE (Per month) :

Sl. No.	Particulars	Amount Rs.
1.	Personnel (Salary & Wages)	50,000/-
2.	Raw material	1,94,000/-
3.	Utilities	1600/-
4.	Other Contingent Expenses	14,000/-

Total : 2,59,600/-
or say 2,60,000/-

Working Capital for 3 months = 2, 60,000 x 3 months = Rs 7,80,000

TOTAL CAPITAL INVESTMENT:

i.	Fixed Capital	Rs. 1,45,000/-
ii.	Working capital for 3 months	Rs. 7,80,000/-
		<u>Rs. 9,25,000/-</u>

FINANCIAL ANALYSIS :

Sl. No.	Particulars	Amount Rs.
1.	Total recurring cost per year	31,20,000/-
2.	Depreciation on Machinery & Equipments @ 10%	14,500/-
3.	Depreciation on office furniture @ 20%	6,000/-
4.	Interest on total capital investment @ 16%	3,88,000/-
	Total :	35,28,500/-

TURNOVER (PER ANNUM):

Item	Qty.	Rate/unit Rs.	Total Sales Rs
Electronics Ballast	60,000 Nos.	70/-	42,00,000/-

PROFIT PER ANNUM (Before taxes) :

$$\begin{array}{rcl} \text{Annual Sales} & (-) & \text{Cost of Production} & = & \text{Profit} \\ = \text{Rs. 42,00,000/-} & - & \text{Rs. 35,28,500/-} & = & \text{Rs. 6,71,500/-} \end{array}$$

NET PROFIT RATIO:

$$\frac{\text{Net Profit} \times 100}{\text{Turnover}} = \frac{6,71,500/-}{42,00,000/-} \times 100 = 15.98 \%$$

RATE OF RETURN:

$$\frac{\text{Net Profit} \times 100}{\text{Total Investment}} = \frac{6,71,500/-}{9,25,000/-} \times 100 = 72.59 \%$$

BREAK EVEN POINT:**Fixed Cost (Annual) :**

Sl. No.	Particulars	Amount Rs.
1.	Rent of the building	60,000/-
2.	Depreciation on machinery & equipments @10%	14,500/-
3.	Depreciation on Office Furniture @20%	6,000/-
4.	Interest on Total Capital Investment @16%	1,48,000/-
5.	40% of Salary & Wages	2,40,000/-
6.	40% of Other expenses	67,200/-
7.	Insurance	12,000/-
Total :		5,47,700/-
		Or say
		5,48,000/-

$$\frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} = \frac{5,48,000/- \times 100}{5,48,000/- + 6,71,500/-} = 44.93 \%$$

ADDRESS OF MACHINERY SUPPLIERS :

- 1) M/s Jatinder M/c Tools, Batala, Punjab.
- 2) M/s Techno Plastics & Engineering works, Okhla, N.Delhi.
- 3) M/s Shree Entreprises, Swaroop Nagar, Kanpur.
- 4) M/s IACL, Industrial Area, Allahabad.
- 5) M/s Fair Powerage, Lucknow.

ADDRESS OF RAW MATERIAL SUPPLIERS :

- 1)M/s Tektronics, Bhai Mata Dass Chowk, Fountain, N. Delhi-06
- 2)M/s Vam Electronics, Bhagirath Palace , N. Delhi-06
- 3)M/s Ralli Wolf Limited, Secunderabad-500003.
- 4)M/s Electromagnetic cores coils, Colony Moulai Ali, Hyderabad-40.