

**PROJECT PROFILE**  
**ON**  
**AUTO MINIATURE LAMP**

**MONTH & YEAR**  
**AUGUST 2011**

**PREPARED BY**  
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# **AUTO MINIATURE LAMP**

## **INTRODUCTION**

The term Lamp means an artificial source of light. There are different types of lamps and auto lamps used for automobiles are known as Auto Lamps. The Auto lamps are of different specifications such as single filament, double filament, 6 Volt, 12 Volt, 12 Watts, 24 Watts, 36 Watts etc.

The Auto Lamps consists of tungsten filament mounted on lead-in-wire and supported by molybdenum wire, which are fixed on glass stem. The whole assembly is placed in a vacuum glass shell and sealed with metal caps.

It is also possible to manufacture auto lamps in small scale sector and can compete with the existing popular brands in the market.

## **MARKET**

Due to rapid and tremendous growth in automobile industry, daily some new make Auto-vehicle is being introduced in the market and still present day need finds sufficient scope for so many other vehicles to come up. As the auto lamp is the only source of light for vehicle, it has a very good market. Further, it is used for replacement purposes also.

The automobile production in the country is showing remarkable progress and any ancillary products such as rubber products which are used in automobiles. The growth in automobile production in the past can be seen from the following figures

## **AUTOMOBILE PRODUCTION TRENDS**

### **Number of Vehicles**

<b>Category</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>
Passenger Vehicles	1,545,223	1,777,583	1,838,593	2,357,411	2,987,296
Commercial Vehicles	519,982	549,006	416,870	567,556	752,735
Three Wheelers	556,126	500,660	497,020	619,194	799,553
Two Wheelers	8,466,666	8,026,681	8,419,792	10,512,903	13,376,451
<b>Grand Total</b>	<b>11,087,997</b>	<b>10,853,930</b>	<b>11,172,275</b>	<b>14,057,064</b>	<b>17,916,035</b>

Source: Society of Indian Automobile Manufacturers (SIAM)

## **INSTALLED CAPACITY**

<b>Product</b>	<b>Capacity per day-Nos</b>	<b>Capacity per month-Nos</b>	<b>Capacity per annum 300 days per annum-Nos</b>
Auto Miniature lamps	3000	75000	900000

## PLANT AND MACHINERY

The following machinery items are required for production of miniature lamps.

Sl. No	Description	Qty	Value (Rs.)
1.	Glass tube cutting Machine with 3/4 HP Motor and Switch	1	28000
2.	Flare making machine 10 head with automatic feeder gas control valves and burner and 1 HP motor and switch	1	280000
3.	Stem making machine:12 heads with flare pusher annealer, Gas, control valves Automatic Colouring with 1 HP motor and switch.	1	280000
4.	Sealing Machine: 12 heads with needles gas control valve 1 HP motor and switch	1	280000
5.	Capping Machine 36 heads with 1 HP motor and switch	1	240000
6.	Exhaust Bench 24 heads with purifying tower set, Gas Control Valve and Vacuum and switch	4	400000
7.	Free Focus Machine	1	12000
8.	Spot Welding Machine	4	32000
9.	Wire Cutter	1	5000
10.	Wire Bender	1	10000
11.	Cap Engraving Machine	1	2400
12.	Soldering set with Gas Heated Burner	4	12000
13.	Air Blower with 1 HP motor	1	12000
14.	Vacuum	4	12000

	<b>Testing Equipments</b>		
15	Ageing rack complete with regulator selector switch, on and off switch, volt meter alongwith 5 kVA multi tapped transformer	1	30000
16	Torsion Testing Machine	1	5,000
17	Photometric Integrator 24" dia with Control Panels	1	20000
18	Vibration Testing Equipment	1	80000
	<b>Total</b>		<b>1740400</b>

## **MANUFACTURING PROCESS**

The manufacturing process of "Auto Lamps" is as below:

- a) Cutting of glass tubes rods to size
- b) Flare making of cut glass tube
- c) Stem making out of flared glass tube and rods
- d) Mounting of lead-in wires and support wire on stem
- e) Mounting of filament of stem assembly
- f) Mounting of filament stem assembly in glass shell and sealing
- g) Fixing of metals cap
- h) Soldering of lead-in-wires

The auto lamps manufactured as per above steps are then tested on the lines of IS1606:1979 and then packed for despatch

## RAW MATERIALS

For Nos	75000.00	Required Qty-Nos	Rate/Piece	Value Rs
Ready filaments	Coil 75000	75000	0.20	15000.00
Lead in Wire	150000	150000	0.04	6000.00
Lamp Caps	75000.00	75000	0.92	69000.00
Glass Shells	75000.00	75000	1.00	75000.00
Solder wire	45.00	45	35.00	1575.00
Capping cement	30.00	30	25.00	750.00
Misc chemicals				600.00
TOTAL				167925.00
Packing materials		75000.00	0.20	0.15

## LAND AND BUILDINGS

Building area required	2000 sq.ft
Rent	Rs.20000
Advance	Rs.2.00 lakhs

## UTILITIES

### Power & Fuel

Three phase-Power	KW	10.00
charges		1.32
Rs.lakhs p.a		
Water- For process-		0
Litres per day		
For human consumption-		200
litres/day		

## MANPOWER

		Monthly wages	Total
Works Manager	1	10000	10000
Technical Supervisor	1	9000	9000
Skilled workers	8	7000	56000
Unskilled workers	10	5000	50000
Accounts Assistant	1	6000	6000
Store keeper	1	6000	6000
Security	2	5000	10000
Salesman	1	7000	7000
sub total			154000
Add benefits		20%	30800
Total per month			184800
<b>TOTAL PER ANNUM-</b>			<b>22.18</b>
<b>Rs. lakhs</b>			

## COST OF PRODUCTION AND PROFITABILTY

### Assumptions

Installed capacity	900000 Nos of Auto miniature lamps per annum
Capacity utilisation	Year-1 -60% Year -2 -70% Year-3 onwards- 80%
Selling price	Rs.10.00 per piece
Raw materials	As per the details given above
Packing materials	As per details given above
Power	Rs.1.32 lakhs per annum
Wages and salaries	Rs.22.18 lakhs per annum with 5% annual increase.

Repairs and Maintenance	Rs.1.20 lakhs per annum
Depreciation	Written down value method -15 % on machinery
Selling general and administrative expenses	Rs.6.00 lakhs per annum with 5% annual increase.
Interest on Term loan	14% per annum
Interest on working capital	14% per annum
Income tax	34% on taxable icnome

## **MACHINERY SUPPLIERS**

1. Basan Machine Tools  
Jawahar Colony, Gurudwara Road, Plot No. 1692, N. I. T.,  
Faridabad-121001.  
(Complete Plant)
2. Product Engineers  
57/6, B. T. Road, Phool Bagan,  
Kolkata-700 002.
3. Hindustan Pump and Machinery Corpn.  
3, N. C. Choudhary Road,  
Kasba, Kolkata-700 042.

## **RAW MATERIALS SUPPLIERS**

1. Jay Electric Wire Corporation Ltd.  
K. R. Sagar Road, Metagalli, Mysore-570 016.  
(Tungsten Filaments)
2. Lamp Caps and Filaments Ltd. 32, Raghunath  
Dadaji Street, Fort, Mumbai-400 001.  
(Tungsten Filaments)

3. Metal Lamp Caps (India) Limited 2, Murphy Road,  
Post Bag No. 876, Ulsoor, Bangalore\_560 008  
(Lamp Caps, Lead in Wire and Lead

4. Indian Plastics Limited  
Poidar Bridge, Kandivli, Mumbai-400 067  
(Lamp Capping Cement)

5. Apar Pvt. Ltd.  
Dharmshir Park, National Highway No. 8, P.B. No. 3,  
Nadiad-387 001  
(Glass Tubes Filaments and Lead Glass Tubing

## FINANCIAL ASPECTS

### 1. COST OF PROJECT

	[Rs.lakhs]
Land & Building (Advance)	2.00
Plant & Machinery	17.40
Other Misc. assets	1.00
Pre-Operative expenses	2.00
Margin for WC	1.08
	<u>23.48</u>

### 2. MEANS OF FINANCE

Capital	10.43
Term Loan	13.05
	<u>23.48</u>

### 3. COST OF PRODUCTION & PROFITABILITY STATEMENT

	[Rs.lakhs]				
Years	1	2	3	4	5
Installed Capacity-Nos	900000	900000	900000	900000	900000
Utilisation	60%	70%	80%	80%	80%
Production/Sales-Nos	540000	630000	720000	720000	720000
Selling Price per piece Rs.	10.00				
Sales Value (Rs.lakhs)	<b>54.00</b>	<b>63.00</b>	<b>72.00</b>	<b>72.00</b>	<b>72.00</b>
Raw Materials	12.09	14.11	16.12	16.12	16.12
Packing Materials	0.09	0.11	0.12	0.12	0.12
Power	0.79	0.92	1.06	1.06	1.06
Wages &	22.18	23.28	24.44	25.66	26.94

Salaries					
Repairs & Maintenance	1.20	1.32	1.45	1.60	1.76
Depreciation	2.61	2.22	1.89	1.60	1.36
	<hr/>				
	38.96	41.95	45.08	46.16	47.36
Cost of Production					
Selling, Admin, & General exp	6.00	6.30	6.62	6.95	7.30
Interest on Term Loan	1.83	1.60	1.14	0.69	0.23
Interest on Working Capital	0.51	0.51	0.51	0.51	0.51
Total	<hr/>				
	47.30	50.36	53.35	54.31	55.40
Profit Before Tax	6.70	12.64	18.65	17.69	16.60
Provision for tax	2.26	4.25	6.28	5.95	5.59
Profit After Tax	<b>4.44</b>	<b>8.39</b>	<b>12.37</b>	<b>11.74</b>	<b>11.01</b>
Add:	2.61	2.22	1.89	1.60	1.36
Depreciation					
Cash Accruals	7.05	10.60	14.26	13.34	12.37
Repayment of Term loan	0.00	3.26	3.26	3.26	3.27

#### 4. WORKING CAPITAL:

	Months	Values	%	Margin Amount	Bank Finance
Raw Materials	0.50	0.50	25%	0.13	0.37
Consumables	2.00	0.02	25%	0.01	0.01
Finished goods	0.50	1.62	25%	0.41	1.21
Debtors	0.50	2.25	10%	0.23	2.02
Expenses	1.00	0.30	100%	0.30	0.00
		<hr/>		<hr/>	<hr/>
		4.69		1.08	3.61

#### 5. PROFITABILITY RATIOS BASED ON 80% UTILISATION

$$\frac{\text{Profit after Tax}}{\text{Sales}} = \frac{12.37}{72.00} \quad 17\%$$

$$\frac{\text{Profit before Interest and Tax}}{\text{Total Investment}} = \frac{20.30}{27.09} \quad 75\%$$

$$\frac{\text{Profit after Tax}}{\text{Promoters Capital}} = \frac{12.37}{10.43} \quad 119\%$$

## 6. BREAK EVEN LEVEL

Fixed Cost  
(FC):

	[Rs.lakh s]
Wages & Salaries	24.44
Repairs & Maintenance	1.45
Depreciation	1.89
Admin. & General expenses	6.62
Interest on TL	1.14
	<hr/> 35.54 <hr/>

Profit Before Tax (P) 18.65

$$\text{BEL} = \frac{\text{FC} \times 100}{\text{FC} + \text{P}} = \frac{35.54}{54.19} \times \frac{80}{100} \times 100$$

52% of installed capacity

