

Power Consumption Estimate

1. Ferrous Sorting Line

As per Table 1 below, the total approximate power of the ferrous sorting line is 8.77 kW.

In x1 shift of 12 hours, when deducting time for break and cleaning, the effective working period amounts to 10.5 hours.

Therefore, for x1 shift, Power Consumption is 8.77 KW x 10.5 hours = **92.085 kWhr**.

Motor	Current	Approx. Power (@ 405V & 0.7 p.f)
M10 – Hopper motor 1	0.5 A	245 W
M11 – Hopper Motor 2	0.4 A	200 W
M9 – Main conveyor (long)	2.6 A	1276 W
M8 – Magnet conveyor	1.3 A	640 W
M4 – Sorting conveyor	3.6 A	1768 W
M3 – rejects from sorting	2.4 A	1178 W
M2 – ferrous material from sorting	2.3 A	1129 W
Room / Office with AC on	4.6 A	1058 W
Sorting room external periphery lights (6x100w LEDs)	2.6 A	1276 W
	<i>Total</i>	<i>8770 W</i>

2. Glass Sorting Line

The GSL shall make use of 2 motors which utilise (combined) an approximate power of 5 kW.

In x1 shift of 12 hours, when deducting time for break and cleaning, the effective working period amounts to 10.5 hours.

Therefore, for x1 shift, Power Consumption is $5.0 \text{ kW} \times 10.5 \text{ hours} = \mathbf{52.50 \text{ kWhr}}$.

3. Rudimentary Sorting Line

The energy consumption of the RSL for x1 shift (12 hours) is approximately 1026 kWhr.

Therefore, for x2 shifts, Power Consumption is = **2052 kWhr**.