

6 ESTIMATED ELECTRICAL POWER SUPPLY REQUIREMENTS

6.1 Our estimates of the power requirements for the irrigation system follow:

Location / Description	Full Load (kW)	Peak Load (kW)	Voltage (V)	No Phases
PUMP HOUSE:				
Irrigation Pump Station	349	407	380/415	3
Fertigation System	3	3	220/230	3
Satellite System	3	3	220/230	1
Power Switches and Lighting	2	2	220/230	1
Ventilation Fans (if required)	3	3	220/230	1
SUB-TOTAL	18	8		
MAINTENANCE CENTRE:				
Computerised Central Controller	2	2	220/230	1
BOOSTER PUMP STATION No 1	13	26	380/415	3
BOOSTER PUMP STATION No 2	13	26	380/415	3
TRANSFER PUMP STATION No 1	8	16	380/415	3
TRANSFER PUMP STATION No 2	8	16	380/415	3
TRANSFER PUMP STATION No 3	8	15	380/415	3
WEATHER STATION (from nearest satellite)	0.012	0.012	220/230	1

NOTE: The power factor for pump motors is typically 0.8.

NOTE: 1 kW = 1.34 Hp

- 6.2 Our power estimates (for supply, not the output power of the motors) for pump stations need to be confirmed with the pump station manufacturer. Our estimates are based on assumed pump efficiencies and electrical equipment that may vary with the actual pump station being supplied.
- 6.3 Depending of various factors (climate, pump house ventilation and motors selected), there may need to be a ventilation fan installed in the pump house. However, the required power will be small in comparison to the overall power requirements of the of the pump station.
- 6.4 The locations of these items (except for the weather station for which no special provision is needed) are shown on the irrigation drawings.

6.5 The high voltage (220 V) power for the satellite control system is to remain dedicated to the control system. It must not be used for other purposes such as half way houses, aerators, lighting, etc, since:

6.5.1 The cable sizing has been calculated only for the irrigation control system.

6.5.2 Other electrical devices may affect the voltage, induce surges and phase shifts that could damage the control system and void warranty.

The power requirements of a satellite are low, typically about that of a 60 W bulb. The relatively large cables are to keep voltage drops within permissible limits over the long distances.