

LSZ DC Solar Stainless Steel Submersible Bore well Pumps



Introduction

Existence of human life in rural India depends largely on the availability of clean water to people, livestock and crops. Farmers in rural India can only become prosperous if there is availability of clean water for their farms, homes and livestock. In many parts of India there is a shortage of reliable power for homes and irrigation of fields where Lubi **LSZ** series of Solar Submersible Pumping systems can make a remarkable contribution.

The LSZ Solar Submersible Pumping system offered by Lubi is a state of the art high technology product designed to provide a green and energy efficient solution for a reliable water supply where there is no access of clean water and electricity.

The LSZ Solar Submersible Pumping system comprises of the following equipment.

- Solar stainless steel submersible bore well pump
- Solar photovoltaic panels with mounting structure
- Automatic controller for the solar pump
- Cables and accessories.

Application

- Flood irrigation of small fields
- Drip irrigation for farms
- Cattle watering
- Water supply for small villages, schools, hospitals and homes.

Range of Performance

Maximum flow : 540 m³/day
 Maximum head : 463 metres.
 Rating : 0.5 hp to 10.0 hp (0.37 kW to 7.5 kW)

Features & Benefits

- r State-of-the art design
- r Highly energy efficient submersible solar water pump with energy efficient inverter duty motor.
- r High efficiency solar photovoltaic panels with a service life of minimum 20 years.
- r Robust design Galvanized steel mounting structure for long life.
- r High technology automatic controller with dynamic MPPT (Maximum Power Point Tracking) control method.
- r The Controller offers complete protection against under and over voltage and dry run protection for the pump.
- r Highly efficient controller with a conversion efficiency of 98%
- r The controller is tropicalized to operate satisfactorily with an ambient temperature of up to 50°C
- r Virtually no maintenance cost.
- r Environmentally friendly air and noise pollution free solution.
- r Material : Stainless Steel (AISI 304, AISI 316) pump construction.
ECDRIVE brushless DC motors, designed for solar, with over
- r 90% efficiency.
Simple and easy installation
- r Cost efficient pumping
- r Very strong ROI against diesel powered pumping systems which reduces production costs and carbon foot print
- r Large range of pumps to closely match each application specific demands and optimize efficiency.

Operating Conditions

Ambient temperature : +50°C
 Liquid temperature range: 0°C to +80°C
 Water pH : 6.5 - 8
 Sand content : 25 g/m³

Type Keys

| LSZ | D005 | 01 | 09 | 0.7k |
|---|--|---|-------------------|---|
| Type range | Motor type | Pump type | Nos. of impellers | Total solar panel Watt |
| LSZ = Solar stainless steel submersible bore well pump series | D005 = 0.5 hp (0.37 kW) DC D007 = 0.75 hp (0.55 kW) DC D010 = 1.0 hp (0.75 kW) DC D015 = 1.5 hp (1.10 kW) DC D020 = 2.0 hp (1.50 kW) DC D030 = 3.0 hp (2.20 kW) DC D050 = 5.0 hp (3.70 kW) DC D075 = 7.5 hp (5.50 kW) DC D100 = 10.0 hp (7.50 kW) DC | 01 = W1A 02 = W2A 03 = W3A 05 = W5A 08 = W8A 14 = W14A 10 = W10 15 = W15 17 = W17 30 = W30 46 = W46 60 = W60 | | 0.7k = 700 Watt solar panel 1k = 1000 Watt solar panel 1.2k = 1200 Watt solar panel 1.6k = 1620 Watt solar panel 1.8k = 1800 Watt solar panel 3k = 3000 Watt solar panel 4.8k = 4800 Watt solar panel 7k = 7000 Watt solar panel 9k = 9000 Watt solar panel |

Minimum Cost of Ownership

Very often investment decisions for pumps are based only on the purchase cost of the pump. This initial purchase cost is a fraction of owning and operating a pump over its entire life span. The initial cost for diesel engine driven pumps is just 5% of the total life cycle cost with operation (energy) and maintenance cost contributing to 85% and 10% respectively.

Solar water pumping systems when compared to diesel engine driven pump sets are much higher in the initial purchase cost but over the life cycle of the solar pumping system they provide significant financial savings in terms of operation (energy) and maintenance costs. Typically when solar pumps are compared with diesel engine pumps they offer a breakeven in costs within 4 to 8 years depending on site conditions, installations cost, and model specification. After the breakeven, the solar pumping systems provide significant cost savings to the owners.

Technical Data

| Suitable for bore size | | Flow range | Head range | Model* | Pump type | Nos. of stages | Discharge size | | Pump power | | Minimum Solar panel total Watt |
|------------------------|------|---------------------|------------|---------------------|-----------|----------------|----------------|------|------------|------|--------------------------------|
| mm | Inch | m ³ /day | Mtrs. | | | | mm | Inch | HP | kW | |
| 100 | 4" | 6 - 9 | 43 - 30 | LSZ-D005-01-09-0.7k | W1A | 9 | 32 | 1¼" | 0.5 | 0.37 | 700 |
| 100 | 4" | 6 - 9 | 63 - 43 | LSZ-D005-01-14-0.7k | W1A | 14 | 32 | 1¼" | 0.5 | 0.37 | 700 |
| 100 | 4" | 6 - 9 | 84 - 57 | LSZ-D007-01-18-1k | W1A | 18 | 32 | 1¼" | 0.75 | 0.55 | 1000 |
| 100 | 4" | 6 - 9 | 96 - 65 | LSZ-D007-01-21-1k | W1A | 21 | 32 | 1¼" | 0.75 | 0.55 | 1000 |
| 100 | 4" | 6 - 9 | 129 - 88 | LSZ-D010-01-28-1.2k | W1A | 28 | 32 | 1¼" | 1 | 0.75 | 1200 |
| 100 | 4" | 6 - 9 | 151 - 103 | LSZ-D015-01-36-1.6k | W1A | 36 | 32 | 1¼" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 6 - 9 | 174 - 119 | LSZ-D015-01-42-1.6k | W1A | 42 | 32 | 1¼" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 6 - 9 | 207 - 141 | LSZ-D020-01-50-1.8k | W1A | 50 | 32 | 1¼" | 2 | 1.5 | 1800 |
| 100 | 4" | 6 - 9 | 234 - 160 | LSZ-D020-01-57-1.8k | W1A | 57 | 32 | 1¼" | 2 | 1.5 | 1800 |
| 100 | 4" | 10 - 17 | 32 - 22 | LSZ-D005-02-06-0.7k | W2A | 6 | 32 | 1¼" | 0.5 | 0.37 | 700 |
| 100 | 4" | 10 - 17 | 46 - 30 | LSZ-D005-02-09-0.7k | W2A | 9 | 32 | 1¼" | 0.5 | 0.37 | 700 |
| 100 | 4" | 10 - 17 | 65 - 44 | LSZ-D007-02-13-1k | W2A | 13 | 32 | 1¼" | 0.75 | 0.55 | 1000 |
| 100 | 4" | 10 - 17 | 91 - 62 | LSZ-D010-02-18-1.2k | W2A | 18 | 32 | 1¼" | 1 | 0.75 | 1200 |
| 100 | 4" | 10 - 17 | 118 - 80 | LSZ-D015-02-23-1.6k | W2A | 23 | 32 | 1¼" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 10 - 17 | 145 - 99 | LSZ-D020-02-28-1.8k | W2A | 28 | 32 | 1¼" | 2 | 1.5 | 1800 |
| 100 | 4" | 10 - 17 | 169 - 115 | LSZ-D020-02-33-1.8k | W2A | 33 | 32 | 1¼" | 2 | 1.5 | 1800 |
| 100 | 4" | 10 - 17 | 210 - 143 | LSZ-D030-02-40-3k | W2A | 40 | 32 | 1¼" | 3 | 2.2 | 3000 |
| 100 | 4" | 10 - 17 | 250 - 167 | LSZ-D030-02-48-3k | W2A | 48 | 32 | 1¼" | 3 | 2.2 | 3000 |
| 100 | 4" | 10 - 17 | 392 - 265 | LSZ-D050-02-75-4.8k | W2A | 75 | 32 | 1¼" | 5 | 3.7 | 4800 |
| 100 | 4" | 10 - 17 | 463 - 308 | LSZ-D050-02-90-4.8k | W2A | 90 | 32 | 1¼" | 5 | 3.7 | 4800 |
| 100 | 4" | 13 - 26 | 33 - 22 | LSZ-D005-03-06-0.7k | W3A | 6 | 32 | 1¼" | 0.5 | 0.37 | 700 |
| 100 | 4" | 13 - 26 | 48 - 33 | LSZ-D007-03-09-1k | W3A | 9 | 32 | 1¼" | 0.75 | 0.55 | 1000 |
| 100 | 4" | 13 - 26 | 66 - 45 | LSZ-D010-03-12-1.2k | W3A | 12 | 32 | 1¼" | 1 | 0.75 | 1200 |
| 100 | 4" | 13 - 26 | 84 - 57 | LSZ-D015-03-15-1.6k | W3A | 15 | 32 | 1¼" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 13 - 26 | 99 - 67 | LSZ-D015-03-18-1.6k | W3A | 18 | 32 | 1¼" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 13 - 26 | 121 - 83 | LSZ-D020-03-22-1.8k | W3A | 22 | 32 | 1¼" | 2 | 1.5 | 1800 |
| 100 | 4" | 13 - 26 | 136 - 93 | LSZ-D020-03-25-1.8k | W3A | 25 | 32 | 1¼" | 2 | 1.5 | 1800 |
| 100 | 4" | 13 - 26 | 162 - 110 | LSZ-D030-03-29-3k | W3A | 29 | 32 | 1¼" | 3 | 2.2 | 3000 |
| 100 | 4" | 13 - 26 | 183 - 123 | LSZ-D030-03-33-3k | W3A | 33 | 32 | 1¼" | 3 | 2.2 | 3000 |
| 100 | 4" | 13 - 26 | 290 - 209 | LSZ-D050-03-52-4.8k | W3A | 52 | 32 | 1¼" | 5 | 3.7 | 4800 |
| 100 | 4" | 13 - 26 | 332 - 237 | LSZ-D050-03-60-4.8k | W3A | 60 | 32 | 1¼" | 5 | 3.7 | 4800 |
| 100 | 4" | 23 - 42 | 22 - 15 | LSZ-D005-05-04-0.7k | W5A | 4 | 40 | 1½" | 0.5 | 0.37 | 700 |
| 100 | 4" | 23 - 42 | 31 - 21 | LSZ-D007-05-06-1k | W5A | 6 | 40 | 1½" | 0.75 | 0.55 | 1000 |
| 100 | 4" | 23 - 42 | 42 - 29 | LSZ-D010-05-08-1.2k | W5A | 8 | 40 | 1½" | 1 | 0.75 | 1200 |
| 100 | 4" | 23 - 42 | 63 - 43 | LSZ-D015-05-12-1.6k | W5A | 12 | 40 | 1½" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 23 - 42 | 88 - 60 | LSZ-D020-05-17-1.8k | W5A | 17 | 40 | 1½" | 2 | 1.5 | 1800 |
| 100 | 4" | 23 - 42 | 111 - 76 | LSZ-D030-05-21-3k | W5A | 21 | 40 | 1½" | 3 | 2.2 | 3000 |
| 100 | 4" | 23 - 42 | 131 - 89 | LSZ-D030-05-25-3k | W5A | 25 | 40 | 1½" | 3 | 2.2 | 3000 |
| 100 | 4" | 23 - 42 | 205 - 141 | LSZ-D050-05-38-4.8k | W5A | 38 | 40 | 1½" | 5 | 3.7 | 4800 |
| 100 | 4" | 23 - 42 | 229 - 156 | LSZ-D050-05-44-4.8k | W5A | 44 | 40 | 1½" | 5 | 3.7 | 4800 |
| 100 | 4" | 23 - 42 | 274 - 188 | LSZ-D075-05-52-7k | W5A | 52 | 40 | 1½" | 7.5 | 5.5 | 7000 |
| 100 | 4" | 23 - 42 | 311 - 213 | LSZ-D075-05-60-7k | W5A | 60 | 40 | 1½" | 7.5 | 5.5 | 7000 |
| 100 | 4" | 23 - 42 | 391 - 267 | LSZ-D100-05-75-9k | W5A | 75 | 40 | 1½" | 10 | 7.5 | 9000 |
| 100 | 4" | 23 - 42 | 438 - 296 | LSZ-D100-05-85-9k | W5A | 85 | 40 | 1½" | 10 | 7.5 | 9000 |
| 100 | 4" | 53 - 77 | 22 - 15 | LSZ-D010-08-05-1.2k | W8A | 5 | 50 | 2" | 1 | 0.75 | 1200 |
| 100 | 4" | 53 - 77 | 32 - 22 | LSZ-D015-08-07-1.6k | W8A | 7 | 50 | 2" | 1.5 | 1.1 | 1620 |
| 100 | 4" | 53 - 77 | 44 - 30 | LSZ-D020-08-10-1.8k | W8A | 10 | 50 | 2" | 2 | 1.5 | 1800 |
| 100 | 4" | 53 - 77 | 55 - 38 | LSZ-D030-08-12-3k | W8A | 12 | 50 | 2" | 3 | 2.2 | 3000 |
| 100 | 4" | 53 - 77 | 67 - 46 | LSZ-D030-08-15-3k | W8A | 15 | 50 | 2" | 3 | 2.2 | 3000 |
| 100 | 4" | 53 - 77 | 95 - 67 | LSZ-D050-08-21-4.8k | W8A | 21 | 50 | 2" | 5 | 3.7 | 4800 |
| 100 | 4" | 53 - 77 | 112 - 79 | LSZ-D050-08-25-4.8k | W8A | 25 | 50 | 2" | 5 | 3.7 | 4800 |
| 100 | 4" | 53 - 77 | 133 - 90 | LSZ-D075-08-30-7k | W8A | 30 | 50 | 2" | 7.5 | 5.5 | 7000 |
| 100 | 4" | 53 - 77 | 162 - 108 | LSZ-D075-08-37-7k | W8A | 37 | 50 | 2" | 7.5 | 5.5 | 7000 |
| 100 | 4" | 53 - 77 | 193 - 130 | LSZ-D100-08-44-9k | W8A | 44 | 50 | 2" | 10 | 7.5 | 9000 |
| 100 | 4" | 53 - 77 | 216 - 145 | LSZ-D100-08-50-9k | W8A | 50 | 50 | 2" | 10 | 7.5 | 9000 |
| 100 | 4" | 74 - 122 | 28 - 19 | LSZ-D020-14-05-1.8k | W14A | 5 | 50 | 2" | 2 | 1.5 | 1800 |
| 100 | 4" | 74 - 122 | 41 - 28 | LSZ-D030-14-07-3k | W14A | 7 | 50 | 2" | 3 | 2.2 | 3000 |
| 100 | 4" | 74 - 122 | 73 - 51 | LSZ-D050-14-13-4.8k | W14A | 13 | 50 | 2" | 5 | 3.7 | 4800 |
| 100 | 4" | 74 - 122 | 103 - 70 | LSZ-D075-14-18-7k | W14A | 18 | 50 | 2" | 7.5 | 5.5 | 7000 |
| 100 | 4" | 74 - 122 | 141 - 96 | LSZ-D100-14-25-9k | W14A | 25 | 50 | 2" | 10 | 7.5 | 9000 |

