

Super Premium Efficiency LV motors

IE4 Efficiency class

0.12 kW to 1000 kW



ultimo Series

New symbol of energy savings...

Why to settle for less, when you are getting more.
Use more, Save more!

Presenting

ultimo series

IE4 Super Premium Efficiency Motors

0.12 kW to 1000 kW

“India’s first complete range of IE4 Motors”

About LHP

Established in 1981, LHP is a reputed manufacturer of wide range of high-quality motors up to 450 Frame (1000kW). The range includes various types of motors such as Standard Induction, Flame-proof, Gear, Brake, Dual Speed, Non-sparking, Increased Safety, Crane & Hoist Duty, Roller Table and Special Purpose Motors to name only a few. The range has been proving its worth for different applications in various industries. LHP motors are the preferred choice of major corporates, MNCs & OEMs due to the product quality, performance, timely deliveries and competitive prices.

The ISO 9001-2015 certification, CE mark, BIS licences and National Awards for Quality Products have made LHP Motors the customer's 'First Choice'.

Being the first to introduce energy efficient motors in the market, now we have designed and manufactured Super Premium efficiency (IE4) class induction motors.

These motors are in the same frame sizes and all are suitable for line starting. (without the use of permanent magnets.)

Ultimo series IE4 motors

The Ultimo series IE4 motors cover 0.12 kW to 1000 kW in frame sizes 63 to 450L. They are available upto 1000V, 50Hz, 60Hz in 2, 4, 6 & 8 pole.

The design is based on LHP's robust and well-proven induction motor platform.

Ultimo series IE4 motors conform to IS 12615:2018 / IEC 60034-30-1-2014-03

- Suitable for continuous process industries where there is high scope for energy saving.
- Short payback period for replacement.
- Enhanced motor life.
- Less maintenance.

Considerations for selection and usage of IE4 motors

Applications

Machine tools, Textile, Air conditioning, Dairy equipment, Packing machinery, Material handling equipment, Geared Motors, Wood seasoning plants, Solvent extraction plants, Edible oil factories, Cement plants, Paper plants, Sugar plants, Steel plants, Petroleum, Pharma and Chemical Industries. The load factor should be chosen between 65 to 100%, so that the advantage of saving will be achieved. The efficiency under such condition have flat efficiency. Thus saving is significant even in partial loads.

Assessing cost effectiveness

Saving calculated as follows :

kW = Output of motor

E1 = Efficiency of IE1 motors

E4 = Efficiency of IE4 motors

Savings = (X x Working hrs x working days x Tariff)

$$X = \frac{kW}{E1} - \frac{kW}{E4}$$

Method of testing efficiency

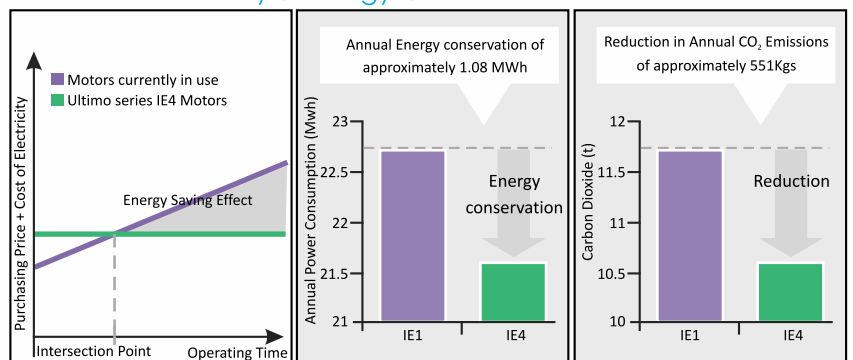
It is very important to note the method of arriving at the efficiency of the motor. For measurement of efficiency of IE4 motors method given in IEC 60034-2-1.

Simple retrofit as IE1, IE2, IE3 & IE4 motors all have the same shaft heights.

Specifications

Range	Up to 1000kW
Pole, Frequency	2/4/6/8, 50Hz & 60Hz
Mounting	Foot (B3), Flange (B5), Face (B14) and combinations
Frame	63 to 450L
Protection	IP 55 (Higher on request)
Insulation	Class 'F' (Class 'H' on request)
Voltage	415V (Any other voltage up to 1000V on request)
Frequency	50 Hz (60 Hz or as per requirement)
Accessories	Thermistor, ACH, RTD, BTD, insulated bearing, encoder as optional wherever feasible.

Increased Efficiency & Energy Conservation



The figures above were calculated for a single 7.5kW 4 Pole, 50Hz motor operating for 10 hrs. per day, 5 days per week for a year.

Material of Construction

Stator frame	Aluminium/ Cast Iron / Fabricated
Stamping	Low loss electrical steel
Rotor	Aluminium or Copper

Applicable standards

IS 15999-1	Specifications for 3 phase induction motors
IS 12615 /IEC 60034-30-1	Specifications for energy efficient motors
IS 4722	Specifications for rotating electrical machines
IS/IEC 60034-5	Degree of protection provided by enclosure for rotating electrical machines.
IS 15999-2 (IEC 60034-2-1)	Method of determination of efficiency of rotating electrical machines

The values of efficiency for motors to classify as IE4 in accordance with IS 12615 / IEC 60034-30-1 are as under

KW	2 Pole		4 Pole		6 Pole		8 Pole	
	Frame	Efficiency %	Frame	Efficiency %	Frame	Efficiency %	Frame	Efficiency %
0.12	63	66.5	63	69.8	63	64.9	71	62.3
0.18	63	70.8	63	74.7	71	70.1	80	67.2
0.25	63	74.3	71	77.9	71	74.1	80	70.8
0.37	71	78.1	71	81.1	80	78	90S	74.3
0.55	71	81.5	80	83.9	80	80.9	90L	77
0.75	80	83.5	80	85.7	90S	82.7	100L	78.4
1.1	80	85.2	90S	87.2	90L	84.5	100L	80.8
1.5	90S	86.5	90L	88.2	100L	85.9	112M	82.6
2.2	90L	88	100L	89.5	112M	87.4	132S	84.5
3.7	100L	89.7	112M	90.9	132S	89.3	160M	86.8
5.5	132S	90.9	132S	91.9	132M	90.5	160M	88.3
7.5	132S	91.7	132M	92.6	160M	91.3	160L	89.3
9.3	160M	92.1	160M	92.9	160L	92.7	180L	89.8
11	160M	92.6	160M	93.3	160L	92.3	180L	90.4
15	160M	93.3	160L	93.9	180L	92.9	200L	91.2
18.5	160L	93.7	180M	94.2	200L	93.4	225S	91.7
22	180M	94	180L	94.5	200L	93.7	225M	92.1
30	200L	94.5	200L	94.9	225M	94.2	250M	92.7
37	200L	94.8	225S	95.2	250M	94.5	280S	93.1
45	225M	95	225M	95.4	280S	94.8	280M	93.4
55	250M	95.3	250M	95.7	280M	95.1	315S	93.7
75	280S	95.6	280S	96	315S	95.4	315M	94.2
90	280M	95.8	280M	96.1	315M	95.6	315L	94.4
110	315S	96	315S	96.3	315M	95.8	315L	94.7
125	315M	96.2	315M	96.4	315L	95.9	315L	94.9
132	315M	96.3	315M	96.6	315L	96	315L	95
160	315L	96.3	315L	96.6	355L	96.2	355L	95.1
180	315L	96.5	315L	96.7	355L	96.6	355L	95.4
200	315L	96.5	315L	96.7	355L	96.6	355L	95.4
250	355M	96.5	355M	96.7	355L	96.6	355L	95.4
315	355L	96.5	355L	96.7	355L	96.6	355L	95.4
355	355L/K	96.5	355L/K	96.7	355L/K	96.6	400L	95.4
375	355L/K	96.5	355L/K	96.7	355L/K	96.6	400L	95.4
400	355L/K	96.5	355L/K	96.7	355L/K	96.6	400L	95.4
450	355L/K	96.5	400L	96.7	355L/K	96.6	400L	95.4
500	355L/K	96.5	400L	96.7	355L/K	96.6	450M	95.4
560	400L	96.5	400L	96.7	400L	96.6	450M	95.4
630	400L	96.5	450M	96.7	400L	96.6	450L	95.4
710	-	-	450M	96.7	400L	96.6	450L	95.4
800	-	-	450L	96.7	450M	96.6	-	-
900	-	-	450M	96.7	450M	96.6	-	-
1000	-	-	450L	96.7	450L	96.6	-	-

2 Pole : 280 Frame & above, 4 Pole : 315 Frame & above and 6 Pole/8 Pole: 355 Frame & above with unidirectional fan.