BCH ELECTRIC LIMITED

BCH IE2 & IE3 Motors

The new IS: 12615- 2011/ IEC 60034-1:

The efficiency factor defines the efficiency of motors while transforming electrical energy into mechanical energy. For a long time Low-voltage 3-phase motors are being sold in **3 Efficiency classes EFF3, EFF2 and EFF1**. This Energy efficiency classification system has been well-proven in many countries across the globe but it unfortunately differs from each other in terms of scope, wording and values.

This fact prompted the International **Electro-technical Commission (IEC)** to develop and publish an energy efficiency standard which replaces all the different national issues. Hence IEC developed and issued a new standard for the determining the motor efficiencies. The new standard **IEC 60034-1** defines and harmonizes worldwide the efficiency classes **IE1, IE2 and IE3** for low-voltage 3-phase motors.

IE1 ⇨ Standard Efficiency (comparable to EFF2)

IE2 ⇨ High Efficiency (comparable to EFF1)

IE3 ⇨ Premium Efficiency

The New IS: 12615-2011 is based on the International Standard IEC 60034-1 which defines New Efficiency Classification for single speed, 3-phase, induction motors.

The IS: 12615-2011 covers single speed, 3-phase, 50Hz, SQ cage induction motors which are:

a. Rated voltage ≤1000V
b. Rated output 0.37kW ≤ Power ≤ 375kW
c. Are either 2 Pole (3000 RPM), 4 Pole (1500 RPM) or 6 Pole (1000 RPM)
d. Conforms to the frame size to output relation as specified in IS: 1231

Previous efficiency classes of motors according to CEMEP – 1998 / IS: 12615-2004:

The voluntary agreement between the European committee of manufacturers of electric drive systems CEMEP and the European Commission defined three efficiency classes:

EFF3 ⇨ Motors with a low efficiency level
EFF2 ⇨ Motors with improved efficiency level
EFF1 ⇨ Motors with a high efficiency level

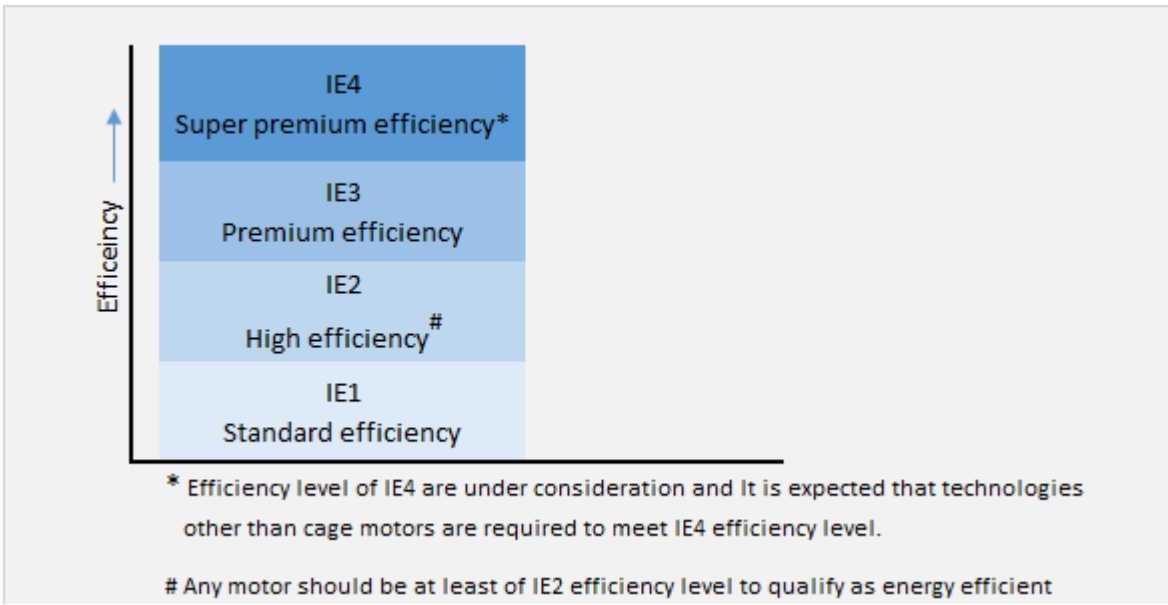
The agreed minimum levels of the respective classes are based on efficiency measurements according to the old EN 60034-2:1996.

Premium efficiency	IE3	Premium
High efficiency	IE2	Comparable to EFF1
Standard efficiency	IE1	Comparable to EFF2

Method for determining the efficiency of motors

The method for measuring the efficiency of LV 3-phase asynchronous motors was revised with the new IEC 60034-2-1:2007 standard. The new method significantly improves the accuracy under defined laboratory conditions. It will replace the EN 60034-2:1996.

The electric performance of BCH IE2 and IE3 motors are as per below tables on page nos. 2, 3, 4 & 5.



IE2 motors

BCH IE2 induction motors suitable for 415 ± 10%, 50 Hz ± 5%, combined ± 10%, 3 phase supply, ambient temperature 50⁰ C, TEFC, Class 'F' insulation, IP-55 protection, continuous rated (S1 duty) with bare shaft & key as per IS:12615-2011 / IEC:60034-1

Rated Output		Motor Type	Frame Size	Rated Speed (rpm)	Rated Current (A)	Rated Torque (kg-m)	Efficiency %			Power factor %			I_{ST} / I_N	T_{ST} / T_N	T_{PO} / T_N	GD² (kgm²)	Wt. (kg)
KW	HP						FL	3/4L	1/2FL	FL	3/4L	1/2FL					
2 Pole, 3000 RPM, IE2																	
0.37	0.50	EC2-270-0202M	71	2810	0.9	0.13	72.2	72.2	70.0	0.79	0.75	0.70	5.0	2.2	2.6	0.0010	8
0.55	0.75	EC2-273-0202M	71	2840	1.3	0.19	74.8	74.8	71.0	0.79	0.75	0.70	5.5	2.3	2.7	0.0014	9
0.75	1.0	EC2-280-0202M	80	2860	1.7	0.26	77.4	77.4	75.0	0.79	0.76	0.72	6.5	2.3	2.7	0.0038	13
1.1	1.5	EC2-283-0202M	80	2860	2.4	0.37	79.6	79.6	76.0	0.80	0.77	0.73	6.5	2.3	2.7	0.0056	15
1.5	2.0	EC2-290-0202M	90S	2880	3.2	0.51	81.3	81.3	77.0	0.80	0.77	0.73	6.5	2.4	2.8	0.0072	19
2.2	3.0	EC2-296-0202M	90L	2890	4.5	0.74	83.2	83.2	80.0	0.82	0.78	0.74	7.0	2.4	2.8	0.0093	22
3.7	5.0	EC2-306-0202M	100L	2900	7.2	1.24	85.5	85.5	82.0	0.84	0.81	0.77	7.0	2.4	2.8	0.0130	30
5.5	7.5	EC2-313-0202M	112M	2905	10.0	1.84	87.0	87.0	84.0	0.88	0.85	0.80	7.0	2.3	2.7	0.0530	58
7.5	10.0	EC2-330-0202M	132S	2925	13.3	2.50	88.1	88.1	85.0	0.89	0.86	0.82	7.0	2.2	2.5	0.0583	58
9.3	12.5	EC2-362-0202M	160M	2930	16.6	3.09	88.8	88.8	85.5	0.88	0.85	0.80	7.0	2.3	2.8	0.1301	103
11.0	15.0	EC2-363-0202M	160M	2935	19.5	3.65	89.4	89.4	86.0	0.88	0.85	0.80	7.0	2.3	2.8	0.1301	103
15.0	20.0	EC2-364-0202M	160M	2940	26.3	4.97	90.3	90.3	86.5	0.88	0.85	0.80	7.0	2.3	2.8	0.1705	120
18.5	25.0	EC2-366-0202M	160L	2940	32.0	6.13	90.9	90.9	87.0	0.88	0.85	0.80	7.0	2.3	2.7	0.1974	125
22.0	30.0	EC2-383-0202M	180M	2945	38.0	7.28	91.3	91.3	88.0	0.89	0.85	0.80	7.0	2.3	2.7	0.3790	163
30.0	40.0	EC2-406-0202M	200L	2955	51.0	9.89	92.0	92.0	89.0	0.89	0.86	0.81	7.0	2.3	2.7	0.5257	246
37.0	50.0	EC2-407-0202M	200L	2960	62.8	12.18	92.5	92.5	89.5	0.89	0.86	0.81	7.0	2.3	2.7	0.5257	248
45.0	60.0	EC2-423-0202M	225M	2960	76.0	14.81	92.9	92.9	90.0	0.89	0.86	0.81	7.0	2.3	2.7	0.9218	376
55.0	75.0	EC2-453-0202M	250M	2965	91.0	18.07	93.2	93.2	90.5	0.90	0.87	0.83	7.0	2.3	2.7	1.0690	369
75.0	100.0	EC2-480-0202M	280S	2975	124.0	24.55	93.8	93.8	91.0	0.90	0.87	0.83	7.0	2.3	2.7	2.9368	570
90.0	120.0	EC2-483-0202M	280M	2975	148.0	29.47	94.1	94.1	91.5	0.90	0.87	0.83	7.0	2.3	2.6	3.3886	592
110.0	150.0	EC2-510-0202M	315S	2980	180.0	35.95	94.3	94.3	91.8	0.90	0.87	0.83	7.0	2.2	2.6	3.9194	750
125.0	170.0	EC2-514-0202M	315M	2980	204.0	40.86	94.6	94.5	92.0	0.90	0.87	0.83	7.0	2.2	2.6	4.6393	780
132.0	180.0	EC2-513-0202M	315M	2980	216.0	43.14	94.6	94.6	92.0	0.90	0.87	0.83	7.0	2.2	2.6	4.6393	780
160.0	215.0	EC2-516-0202M	315L	2985	260.0	52.21	95.0	94.8	92.5	0.90	0.87	0.83	7.0	2.2	2.6	5.5991	930
200.0	270.0	EC2-517-0202M	315L	2985	326.0	65.26	95.0	95.0	93.0	0.90	0.87	0.83	7.0	2.2	2.6	7.0389	965
250.0	335.0	EC2-553-0202M	355M	2985	407.0	81.57	95.0	95.0	93.0	0.90	0.87	0.83	7.0	2.0	2.4	10.0292	1710
315.0	425.0	EC2-557-0202M	355L	2985	512.0	102.78	95.0	95.0	93.0	0.90	0.87	0.83	7.0	2.0	2.4	12.6685	1900
4 Pole, 1500 RPM, IE2																	
0.37	0.50	EC2-273-0402M	71	1390	1.0	0.26	70.1	70.1	65.0	0.73	0.67	0.58	6.0	1.9	2.3	0.0022	9
0.55	0.75	EC2-280-0402M	80	1420	1.4	0.38	75.1	75.1	71.0	0.73	0.67	0.58	6.0	1.9	2.3	0.0038	13
0.75	1.0	EC2-283-0402M	80	1425	1.7	0.51	79.6	79.6	75.0	0.77	0.70	0.63	6.0	2.5	3.0	0.0062	17
1.1	1.5	EC2-290-0402M	90S	1430	2.4	0.75	81.4	81.4	80.0	0.78	0.73	0.65	6.0	2.5	3.0	0.0093	20
1.5	2.0	EC2-296-0402M	90L	1430	3.2	1.02	82.8	82.8	81.0	0.79	0.74	0.65	6.0	2.4	2.8	0.0134	25
2.2	3.0	EC2-306-0402M	100L	1440	4.4	1.49	84.3	84.3	82.5	0.83	0.76	0.65	6.5	2.4	2.8	0.0182	28
3.7	5.0	EC2-313-0402M	112M	1445	7.1	2.49	86.3	86.3	85.0	0.84	0.80	0.68	7.0	2.4	2.8	0.0404	45
5.5	7.5	EC2-330-0402M	132S	1450	10.5	3.69	87.7	87.7	86.0	0.83	0.79	0.72	7.0	2.4	2.8	0.0676	57
7.5	10.0	EC2-333-0402M	132M	1450	14.1	5.04	88.7	88.7	87.0	0.83	0.79	0.72	7.0	2.2	2.6	0.1013	66
9.3	12.5	EC2-363-0402M	160M	1455	17.5	6.23	89.3	89.3	87.5	0.83	0.80	0.72	7.0	2.2	2.6	0.1696	100
11.0	15.0	EC2-364-0402M	160M	1455	20.5	7.36	89.8	89.8	88.0	0.83	0.80	0.72	7.0	2.2	2.6	0.1874	105
15.0	20.0	EC2-366-0402M	160L	1455	27.5	10.04	90.6	90.6	89.0	0.84	0.80	0.73	7.0	2.2	2.6	0.2573	123
18.5	25.0	EC2-383-0402M	180M	1460	33.5	12.34	91.2	91.2	90.5	0.84	0.80	0.74	7.0	2.3	2.6	0.3601	156
22.0	30.0	EC2-386-0402M	180L	1460	40.0	14.68	91.6	91.6	90.5	0.84	0.80	0.74	7.0	2.3	2.6	0.4359	172
30.0	40.0	EC2-406-0402M	200L	1465	54.0	19.95	92.3	92.3	91.0	0.84	0.80	0.74	7.0	2.3	2.6	0.9602	254
37.0	50.0	EC2-420-0402M	225S	1470	65.0	24.52	92.7	92.7	91.5	0.85	0.83	0.77	7.0	2.3	2.6	1.4552	335
45.0	60.0	EC2-423-0402M	225M	1475	78.0	29.72	93.1	93.1	92.0	0.86	0.83	0.77	7.0	2.3	2.6	1.6299	370
55.0	75.0	EC2-453-0402M	250M	1480	94.0	36.20	93.5	93.5	93.0	0.87	0.84	0.79	7.0	2.3	2.6	2.5271	410
75.0	100.0	EC2-480-0402M	280S	1482	128.0	49.29	94.0	94.0	93.5	0.87	0.84	0.79	7.0	2.2	2.5	3.9994	590
90.0	120.0	EC2-483-0402M	280M	1482	152.0	59.15	94.2	94.2	93.5	0.87	0.84	0.80	7.0	2.2	2.5	4.7993	610
110.0	150.0	EC2-510-0402M	315S	1485	187.0	72.15	94.5	94.5	93.7	0.87	0.84	0.80	7.0	2.2	2.5	8.1503	790
125.0	170.0	EC2-514-0402M	315M	1485	215.0	81.99	94.6	94.6	93.8	0.86	0.84	0.80	7.0	2.2	2.5	9.7803	820
132.0	180.0	EC2-513-0402M	315M	1485	226.0	86.58	94.7	94.7	94.0	0.86	0.84	0.80	7.0	2.2	2.5	9.7803	820
160.0	215.0	EC2-516-0402M	315L	1485	272.0	104.94	94.9	94.9	94.2	0.86	0.84	0.80	7.0	2.2	2.5	11.8549	990
200.0	270.0	EC2-517-0402M	315L	1485	336.0	131.18	95.1	95.1	94.6	0.87	0.84	0.80	7.0	2.2	2.5	14.8187	1000
250.0	335.0	EC2-553-0402M	355M	1488	420.0	163.64	95.1	95.1	94.6	0.87	0.84	0.78	7.0	2.0	2.4	15.9163	1740
315.0	425.0	EC2-557-0402M	355L	1488	527.0	206.19	95.1	95.1	94.6	0.87	0.84	0.78	7.0	2.0	2.4	20.7282	1980

IE2 motors

BCH IE2 induction motors suitable for 415 ± 10%, 50 Hz ± 5%, combined ± 10%, 3 phase supply, ambient temperature 50⁰ C, TEFC, Class 'F' insulation, IP-55 protection, continuous rated (S1 duty) with bare shaft & key as per IS:12615-2011 / IEC:60034-1

Rated Output		Motor Type	Frame Size	Rated Speed (rpm)	Rated Current (A)	Rated Torque (kg-m)	Efficiency %			Power factor %			I_{ST} / I_N	T_{ST} / T_N	T_{PO} / T_N	GD² (kgm²)	Wt. (kg)
KW	HP						FL	3/4L	1/2FL	FL	3/4L	1/2FL					
6 Pole, 1000 RPM, IE2																	
0.37	0.50	EC2-280-0602M	80	925	1.0	0.39	69.0	69.0	64.0	0.75	0.65	0.54	4.5	1.9	2.2	0.0049	12
0.55	0.75	EC2-283-0602M	80	930	1.5	0.58	72.9	72.9	67.0	0.70	0.63	0.52	4.5	2.2	2.6	0.0063	13
0.75	1.0	EC2-290-0602M	90S	935	2.0	0.78	75.9	75.9	73.0	0.69	0.63	0.52	5.0	2.1	2.5	0.0122	20
1.1	1.5	EC2-296-0602M	90L	935	2.7	1.15	78.1	78.1	74.0	0.73	0.68	0.54	5.0	2.1	2.5	0.0176	24
1.5	2.0	EC2-306-0602M	100L	945	3.4	1.55	79.8	79.8	77.0	0.77	0.70	0.56	5.5	2.1	2.5	0.0269	28
2.2	3.0	EC2-313-0602M	112M	950	4.8	2.26	81.8	81.8	78.5	0.78	0.71	0.58	6.0	2.1	2.5	0.0467	39
3.7	5.0	EC2-330-0602M	132S	950	7.6	3.79	84.3	84.3	80.0	0.80	0.74	0.62	6.0	2.2	2.6	0.0991	60
5.5	7.5	EC2-333-0602M	132M	955	11.0	5.61	86.0	86.0	83.0	0.81	0.76	0.62	6.5	2.2	2.6	0.1312	68
7.5	10.0	EC2-363-0602M	160M	960	14.6	7.61	87.2	87.2	84.0	0.82	0.77	0.65	7.0	2.2	2.6	0.2897	100
9.3	12.5	EC2-366-0602M	160L	965	18.0	9.39	88.0	88.0	85.0	0.82	0.77	0.65	7.0	2.1	2.5	0.3802	117
11.0	15.0	EC2-367-0602M	160L	970	21.0	11.05	88.7	88.7	86.0	0.82	0.77	0.65	7.0	2.1	2.5	0.4164	124
15.0	20.0	EC2-386-0602M	180L	970	29.0	15.06	89.7	89.7	86.5	0.80	0.75	0.65	7.0	2.1	2.5	0.5949	170
18.5	25.0	EC2-406-0602M	200L	975	35.6	18.48	90.4	90.4	87.0	0.80	0.75	0.65	7.0	2.1	2.5	1.1642	238
22.0	30.0	EC2-407-0602M	200L	975	42.0	21.98	90.9	90.9	87.5	0.80	0.75	0.65	7.0	2.1	2.5	1.2854	255
30.0	40.0	EC2-423-0602M	225M	975	56.0	29.97	91.7	91.7	88.0	0.81	0.77	0.66	7.0	2.1	2.4	2.0583	372
37.0	50.0	EC2-453-0602M	250M	980	68.0	36.77	92.2	92.2	89.0	0.82	0.79	0.70	7.0	2.1	2.4	2.5127	390
45.0	60.0	EC2-480-0602M	280S	983	80.0	44.59	92.7	92.7	89.4	0.84	0.81	0.73	7.0	2.1	2.4	5.2502	570
55.0	75.0	EC2-483-0602M	280M	983	98.0	54.50	93.1	93.1	89.7	0.84	0.81	0.73	7.0	2.2	2.4	5.8335	590
75.0	100.0	EC2-510-0602M	315S	986	133.0	74.09	93.7	93.7	90.0	0.84	0.81	0.73	7.0	2.2	2.4	7.2611	750
90.0	120.0	EC2-513-0602M	315M	986	159.0	88.90	94.0	94.0	92.0	0.84	0.81	0.74	7.0	2.1	2.4	8.5948	780
110.0	150.0	EC2-516-0602M	315L	986	192.0	108.66	94.3	94.3	92.0	0.85	0.82	0.75	7.0	2.1	2.4	10.3731	960
125.0	170.0	EC2-518-0602M	315L	987	215.0	123.35	94.4	94.4	92.5	0.86	0.83	0.76	7.0	2.1	2.4	12.4477	985
132.0	180.0	EC2-517-0602M	315L	987	227.0	130.26	94.6	94.6	93.0	0.86	0.83	0.76	7.0	2.1	2.4	12.4477	985
160.0	215.0	EC2-550-0602M	355S	988	280.0	157.73	94.8	94.8	94.0	0.84	0.82	0.75	7.0	2.1	2.4	18.2762	1660
200.0	270.0	EC2-553-0602M	355M	988	345.0	197.17	95.0	95.0	94.5	0.85	0.82	0.75	7.0	2.1	2.4	21.0176	1830
250.0	335.0	EC2-557-0602M	355L	988	433.0	246.46	95.0	95.0	94.5	0.85	0.82	0.75	7.0	2.1	2.4	26.5005	2020

IE3 motors

BCH IE3 induction motors suitable for 415 ± 10%, 50 Hz ± 5%, combined ± 10%, 3 phase supply, ambient temperature 50⁰ C, TEFC, Class 'F' insulation, IP-55 protection, continuous rated (S1 duty) with bare shaft & key as per IS:12615-2011 / IEC:60034-1

Rated Output		Motor Type	Frame Size	Rated Speed (rpm)	Rated Curr. (A)	Rated Torque (kgm)	Efficiency %			Power factor %			I_{ST}/I_N	T_{ST}/T_N	T_{PO}/T_N	GD² (kgm²)	Wt. (kg)
KW	HP						FL	3/4L	1/2FL	FL	3/4L	1/2FL					
2 Pole, 3000 RPM, IE3																	
0.37	0.50	EC3-270-0202M	71	2810	0.9	0.13	75.5	75.5	72.0	0.76	0.69	0.57	6.5	2.1	2.5	0.0010	8
0.55	0.75	EC3-273-0202M	71	2840	1.25	0.19	78.1	78.1	75.5	0.78	0.74	0.60	7.0	2.2	2.6	0.0014	9
0.75	1.0	EC3-280-0202M	80	2860	1.6	0.26	80.7	80.7	78.0	0.81	0.76	0.63	7.0	2.1	2.5	0.0049	15
1.1	1.5	EC3-283-0202M	80	2860	2.2	0.37	82.7	82.7	80.0	0.84	0.80	0.72	7.0	2.1	2.5	0.0062	17
1.5	2.0	EC3-290-0202M	90S	2850	3.0	0.51	84.2	84.2	84.0	0.83	0.81	0.75	7.0	2.5	3.0	0.0052	20
2.2	3.0	EC3-296-0202M	90L	2870	4.3	0.75	85.9	85.9	84.5	0.83	0.81	0.75	7.7	2.5	3.0	0.0068	23
3.7	5.0	EC3-306-0202M	100L	2890	6.8	1.25	87.8	87.8	85.0	0.86	0.83	0.77	7.7	2.5	3.0	0.0168	32
5.5	7.5	EC3-313-0202M	112M	2945	9.8	1.82	89.2	89.2	87.0	0.88	0.86	0.82	7.7	2.5	3.0	0.0583	58
7.5	10.0	EC3-330-0202M	132S	2945	13.0	2.48	90.1	90.1	89.5	0.89	0.87	0.84	7.7	2.5	3.0	0.0716	65
9.3	12.5	EC3-362-0202M	160M	2935	16.0	3.09	90.7	90.7	89.5	0.89	0.86	0.81	7.7	2.3	2.8	0.1700	115
11.0	15.0	EC3-363-0202M	160M	2940	19.0	3.64	91.2	91.2	90.0	0.88	0.86	0.79	7.7	2.3	2.8	0.1700	117
15.0	20.0	EC3-364-0202M	160M	2935	25.5	4.98	91.9	91.9	90.9	0.89	0.87	0.80	7.7	2.3	2.8	0.2040	123
18.5	25.0	EC3-366-0202M	160L	2935	31.0	6.14	92.4	92.4	91.4	0.90	0.87	0.81	7.7	2.3	2.8	0.2312	135
22.0	30.0	EC3-383-0202M	180M	2940	37.0	7.29	92.7	92.7	91.5	0.89	0.87	0.81	7.7	2.2	2.7	0.2585	172
30.0	40.0	EC3-406-0202M	200L	2955	49.5	9.89	93.3	93.3	92.2	0.90	0.88	0.84	7.7	2.0	2.5	0.5257	250
37.0	50.0	EC3-407-0202M	200L	2955	60.5	12.20	93.7	93.7	92.5	0.91	0.89	0.85	7.7	2.2	2.6	0.5257	253
45.0	60.0	EC3-423-0202M	225M	2960	72.5	14.81	94.0	94.0	93.0	0.92	0.90	0.86	7.7	2.3	2.7	0.8450	382
55.0	75.0	EC3-453-0202M	250M	2960	89.0	18.10	94.3	94.3	93.0	0.91	0.90	0.86	7.0	2.0	2.5	1.0690	373
75.0	100.0	EC3-480-0202M	280S	2965	121.5	24.64	94.7	94.7	93.5	0.91	0.90	0.86	7.0	2.0	2.8	2.9368	570
90.0	120.0	EC3-483-0202M	280M	2965	145.0	29.56	95.0	95.0	94.0	0.91	0.89	0.84	7.0	2.0	2.8	2.9368	592
110.0	150.0	EC3-510-0202M	315S	2975	177.0	36.01	95.2	95.2	94.0	0.91	0.90	0.86	7.0	1.9	2.6	4.6393	780

IE3 motors

Rated Output		Motor Type	Frame Size	Rated Speed (rpm)	Rated Current (A)	Rated Torque (kg-m)	Efficiency %			Power factor %			I_{ST}/I_N	T_{ST}/T_N	T_{PO}/T_N	GD² (kgm²)	Wt. (kg)
KW	HP						FL	3/4L	1/2FL	FL	3/4L	1/2FL					
2 Pole, 3000 RPM, IE3																	
125.0	170.0	EC3-514-0202M	315M	2975	201.0	40.92	95.3	95.3	94.0	0.91	0.90	0.86	7.7	2.0	2.6	4.6393	780
132.0	180.0	EC3-513-0202M	315M	2975	212.0	43.22	95.4	95.4	94.2	0.91	0.90	0.87	7.5	1.9	2.6	4.6393	780
160.0	215.0	EC3-516-0202M	315L	2975	257.0	52.38	95.6	95.6	94.0	0.91	0.90	0.88	7.5	1.9	2.6	5.4392	965
200.0	270.0	EC3-517-0202M	315L	2975	320.0	65.48	95.8	95.8	94.5	0.91	0.90	0.87	7.5	2.0	2.6	5.5991	965
250.0	335.0	EC3-553-0202M	355M	2980	403.0	81.71	95.8	95.8	94.0	0.90	0.88	0.84	7.5	1.9	2.6	8.9735	1710
315.0	425.0	EC3-557-0202M	355L	2980	506.0	102.96	95.8	95.8	94.0	0.90	0.88	0.84	7.5	2.0	2.6	10.0292	1900
4 Pole, 1500 RPM, IE3																	
0.37	0.50	EC3-273-0402M	71	1420	1.0	0.25	73.0	73.0	68.0	0.71	0.63	0.50	5.0	2.2	2.6	0.0028	11
0.55	0.75	EC3-280-0402M	80	1430	1.3	0.37	78.0	78.0	74.0	0.75	0.66	0.53	6.0	2.2	2.6	0.0049	15
0.75	1.0	EC3-283-0402M	80	1430	1.6	0.51	82.5	82.5	78.0	0.79	0.75	0.64	6.5	2.6	3.0	0.0062	17
1.1	1.5	EC3-290-0402M	90S	1430	2.3	0.75	84.1	84.1	81.5	0.79	0.75	0.64	6.5	2.5	3.0	0.0093	20
1.5	2.0	EC3-296-0402M	90L	1435	3.1	1.02	85.3	85.3	83.0	0.79	0.75	0.64	6.5	2.5	3.0	0.0134	25
2.2	3.0	EC3-306-0402M	100L	1440	4.3	1.49	86.7	86.7	84.0	0.82	0.78	0.67	7.5	2.5	3.0	0.0237	34
3.7	5.0	EC3-313-0402M	112M	1450	7.5	2.49	88.4	88.4	85.5	0.78	0.69	0.60	7.5	2.5	3.0	0.0497	45
5.5	7.5	EC3-330-0402M	132S	1455	10.5	3.68	89.6	89.6	87.0	0.81	0.76	0.65	7.5	2.5	3.0	0.0811	60
7.5	10.0	EC3-333-0402M	132M	1455	14.2	5.02	90.4	90.4	88.0	0.81	0.76	0.66	7.5	2.5	3.0	0.1081	68
9.3	12.5	EC3-363-0402M	160M	1460	16.5	6.20	91.0	91.0	90.0	0.86	0.82	0.73	7.5	2.5	2.8	0.2369	107
11.0	15.0	EC3-364-0402M	160M	1460	19.8	7.34	91.4	91.4	90.2	0.85	0.80	0.72	7.5	2.3	2.6	0.2396	107
15.0	20.0	EC3-366-0402M	160L	1460	26.2	10.01	92.1	92.1	91.4	0.86	0.82	0.74	7.5	2.4	2.7	0.3032	132
18.5	25.0	EC3-383-0402M	180M	1465	32.8	12.30	92.6	92.6	91.6	0.85	0.81	0.73	7.5	2.4	2.7	0.3790	165
22.0	30.0	EC3-386-0402M	180L	1465	38.5	14.63	93.0	93.0	92.0	0.85	0.81	0.73	7.5	2.3	2.6	0.4359	180
30.0	40.0	EC3-406-0402M	200L	1470	52.5	19.88	93.6	93.6	92.5	0.85	0.81	0.73	7.5	2.5	2.8	0.9987	276
37.0	50.0	EC3-420-0402M	225S	1470	63.5	24.52	93.9	939.0	93.0	0.86	0.83	0.76	7.5	2.3	2.6	1.3970	370
45.0	60.0	EC3-423-0402M	225M	1475	77.8	29.72	94.2	94.2	93.2	0.85	0.82	0.75	7.5	2.5	2.8	1.6299	390
55.0	75.0	EC3-453-0402M	250M	1482	92.0	36.15	94.6	94.6	94.0	0.88	0.86	0.80	7.5	2.5	2.8	2.3466	410
75.0	100.0	EC3-480-0402M	280S	1482	125.0	49.29	95.0	95.0	94.2	0.88	0.85	0.77	7.5	2.2	2.5	4.1594	610
90.0	120.0	EC3-483-0402M	280M	1482	150.0	59.15	95.2	95.2	94.0	0.88	0.85	0.77	7.5	2.2	2.5	5.1192	640
110.0	150.0	EC3-510-0402M	315S	1485	183.0	72.15	95.4	95.4	94.4	0.88	0.85	0.77	7.0	2.0	2.4	10.3731	775
125.0	170.0	EC3-514-0402M	315M	1485	205.0	81.99	95.5	95.5	94.5	0.89	0.87	0.80	7.5	2.2	2.5	11.8549	950
132.0	180.0	EC3-513-0402M	315M	1485	216.0	86.58	95.6	95.6	94.5	0.89	0.87	0.82	7.5	2.2	2.5	11.8549	950
160.0	215.0	EC3-516-0402M	315L	1485	260.0	104.94	95.8	95.8	94.5	0.89	0.87	0.81	7.5	2.2	2.5	13.0404	980
200.0	270.0	EC3-517-0402M	315L	1485	326.0	131.18	96.0	96.0	95.0	0.89	0.87	0.81	7.5	2.2	2.5	15.4114	1020
250.0	335.0	EC3-553-0402M	355M	1485	412.0	163.97	96.0	96.0	95.0	0.88	0.85	0.77	7.5	2.0	2.5	15.9163	1740
315.0	425.0	EC3-557-0402M	355L	1486	519.0	206.47	96.0	96.0	95.0	0.88	0.85	0.77	7.5	2.0	2.5	19.9879	1980
6 Pole, 1000 RPM, IE3																	
0.37	0.50	EC3-280-0602M	80	925	1.05	0.39	71.9	71.9	68.0	0.68	0.63	0.50	5.0	1.8	2.3	0.0049	15
0.55	0.75	EC3-283-0602M	80	925	1.45	0.58	75.9	75.9	70.0	0.70	0.62	0.50	5.0	2.0	2.4	0.0083	16
0.75	1.0	EC3-290-0602M	90S	930	1.9	0.79	78.9	78.9	74.0	0.70	0.62	0.50	5.0	2.2	2.6	0.0135	24
1.1	1.5	EC3-296-0602M	90L	940	2.7	1.14	81.0	81.0	76.0	0.70	0.62	0.50	5.5	2.2	2.6	0.0190	25
1.5	2.0	EC3-306-0602M	100L	945	3.3	1.55	82.5	82.5	80.0	0.77	0.71	0.60	6.0	2.2	2.6	0.0336	34
2.2	3.0	EC3-313-0602M	112M	955	4.7	2.24	84.3	84.3	82.0	0.77	0.71	0.60	6.5	2.2	2.8	0.0630	44
3.7	5.0	EC3-330-0602M	132S	960	7.5	3.75	86.5	86.5	84.0	0.79	0.72	0.63	7.5	2.4	2.8	0.1321	68
5.5	7.5	EC3-333-0602M	132M	960	11.0	5.58	88.0	88.0	86.0	0.79	0.72	0.63	7.5	2.6	3.0	0.1487	70
7.5	10.0	EC3-363-0602M	160M	960	14.0	7.61	89.1	89.0	88.0	0.84	0.79	0.69	7.5	2.0	2.4	0.3718	108
9.3	12.5	EC3-366-0602M	160L	965	17.0	9.39	89.7	89.7	88.5	0.85	0.80	0.70	7.5	2.0	2.4	0.4759	122
11.0	15.0	EC3-367-0602M	160L	970	20.2	11.05	90.3	90.3	89.0	0.84	0.79	0.69	7.5	2.0	2.3	0.5503	128
15.0	20.0	EC3-386-0602M	180L	972	27.0	15.03	91.2	91.2	90.0	0.85	0.81	0.71	7.5	2.2	2.5	0.7437	180
18.5	25.0	EC3-406-0602M	200L	978	34.4	18.42	91.7	91.7	90.3	0.82	0.77	0.67	7.5	2.6	3.0	1.2654	246

IE3 motors

BCH IE3 induction motors suitable for 415 ± 10%, 50 Hz ± 5%, combined ± 10%, 3 phase supply, ambient temperature 50⁰ C, TEFC, Class 'F' insulation, IP-55 protection, continuous rated (S1 duty) with bare shaft & key as per IS:12615-2011 / IEC:60034-1

Rated Output		Motor Type	Frame Size	Rated Speed (rpm)	Rated Current (A)	Rated Torque (kg-m)	Efficiency %			Power factor %			I_{ST} / I_N	T_{ST} / T_N	T_{PO} / T_N	GD² (kgm²)	Wt. (kg)
KW	HP						FL	3/4L	1/2FL	FL	3/4L	1/2FL					
6 Pole, 1000 RPM, IE3																	
22.0	30.0	EC3-407-0602M	200L	980	41.5	21.87	92.2	92.2	90.7	0.80	0.76	0.66	7.5	2.7	3.0	1.5185	268
30.0	40.0	EC3-423-0602M	225M	982	55.7	29.76	92.9	92.9	91.8	0.81	0.76	0.66	7.5	2.6	2.9	1.8378	380
37.0	50.0	EC3-453-0602M	250M	982	66.0	36.70	93.3	93.3	92	0.84	0.81	0.72	7	2.2	2.5	2.6988	410
45.0	60.0	EC3-480-0602M	280S	984	79.0	44.54	93.7	93.7	92.5	0.85	0.82	0.75	7	2.3	2.5	4.8613	590
55.0	75.0	EC3-483-0602M	280M	984	95.0	54.44	94.1	94.1	93.2	0.86	0.84	0.77	7	2.3	2.5	5.8335	600
75.0	100.0	EC3-510-0602M	315S	986	131.0	74.09	94.6	94.6	93.5	0.84	0.81	0.73	7	2.3	2.4	8.5948	780
90.0	120.0	EC3-513-0602M	315M	986	156.0	88.90	94.9	94.9	94	0.85	0.81	0.73	7	2.3	2.4	10.3731	960
110.0	150.0	EC3-516-0602M	315L	987	194.0	108.55	95.1	95.1	94	0.83	0.79	0.69	7.5	2.5	2.5	11.8549	1000
125.0	170.0	EC3-518-0602M	315L	987	218.0	123.35	95.2	95.2	94	0.84	0.8	0.71	7.5	2.5	2.5	11.8549	1000
132.0	180.0	EC3-517-0602M	315L	988	228.0	130.13	95.4	95.4	94.5	0.84	0.81	0.72	7.5	2.5	2.5	14.2259	1030
160.0	215.0	EC3-550-0602M	355S	990	276.0	157.41	95.6	95.6	95	0.84	0.81	0.72	7	2	2.4	23.759	2020
200.0	270.0	EC3-553-0602M	355M	990	347.0	196.77	95.8	95.8	95	0.84	0.8	0.71	7	2.2	2.4	23.759	2020
250.0	335.0	EC3-557-0602M	355L	989	430.0	246.21	95.8	95.8	95	0.84	0.81	0.73	7	2	2.4	26.5005	2040