



Certified to  
NSF/ANSI/CAN 61

# Submersible Motor KM6-KM8-KM10

2 Pole 60 Hz for 6, 8 and 10 inch Borehole  
Water Cooled Rewindable Series



**KLASSEN**



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# KM6

## 6" Borehole Submersible Electric Water Cooled Rewindable Motors

### Models Range

Standard: Double Flange

### Power Range

From: 5.5 HP (4 kW)

To: 70 HP (52 kW)

### Voltage Range

230 Volts @ 60 Hertz

460 Volts @ 60 Hertz

### Speed Range

2 Poles, 3600 RPM

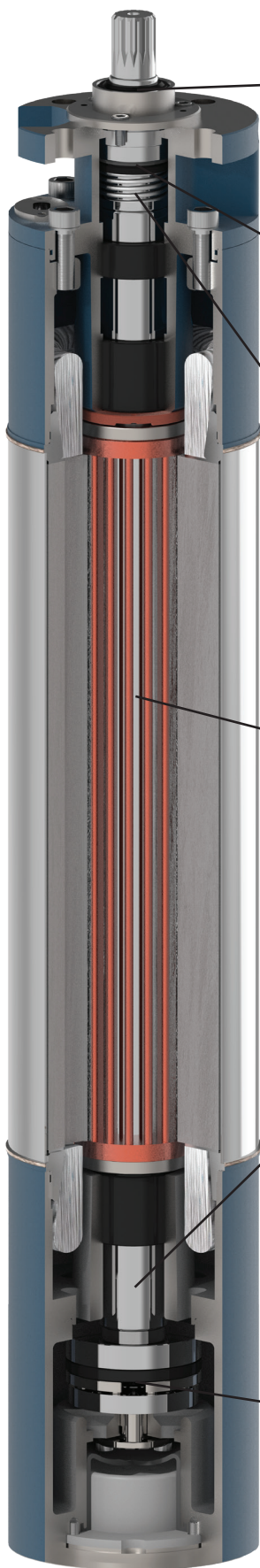
### Construction Material

Standard: Cast Iron with NSF Certified Epoxy

Optional: Complete 316L Stainless Steel







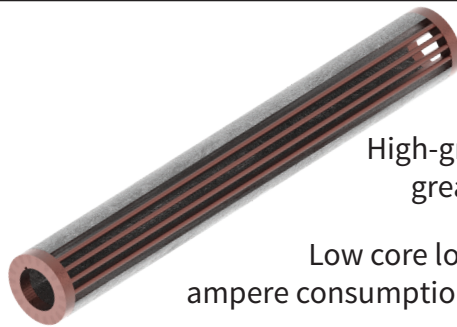
Wiper Seal resists sand, clay and mud against entering the seal support, while remaining intact at 3500 RPM.



Lip / Oil Seal resist fine sand against entering to Mechanical Seal.



Silicon Tungsten Carbide Mechanical Seal for Optimum Protection in Sandy Wells.



Stator made of high-grade silicon steel sheet.

High-grade silicon steel sheet offers greater efficiency and reliability.

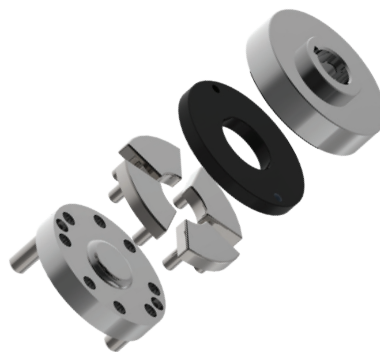
Low core losses, higher efficiency, lower ampere consumption and lower heat generation.

High-grade Stainless Steel Shaft hardened to 40 HRC.

Fully machined and grinded throughout the length.



Integral / single piece design ensure better dimensional accuracy.



Robust Kingsbury type thrust bearing made of high grade material.

Water lubricated, low friction and highly durable

Customized thrust ratings available on client's demand.



## Salient Features

KM6 6” water-filled submersible electric motors have asynchronous three-phase rewindable stator and squirrel cage rotor.

The new series of 6” submersible electric motors KM6 has been designed and produced according to the market’s requirements. In design and material selection all efforts have been made to offer an energy-efficient product to our customers which stands for reliability, excellent quality, long and trouble-free life.

- Wet Stator Design
- High Grade Material
- High Thermal Capacity
- High Sand Resistance
- High Efficiency
- Long Service Lif
- Easy Maintenance
- Rewindable
- Eco Friendly
- NSF and ISO Certified
- Industrial, Domestic, Comercial, Agriculture and Irrigation Purpose

## Technical Specification

<b>IP68</b>	degree of protection
<b>Y*</b>	insulation class
<b>50 °C</b>	ambient temperature
<b>+6% / -10%</b>	voltage tolerance
<b>Vertical/Horizontal</b>	mounting position
<b>16 cm/sec</b>	min. cooling flow rate speed
<b>150 m</b>	max. immersion depth
<b>20</b>	max. starts per hour
<b>Wooden crate</b>	packing

\* Higher insulation wire class are available on request.

## Specifications

**Winding:**  
Electrolytic Solid Copper wire wrapped in BOPET+BOPP Insulation rated for temperatures over 100 °C that allows more copper in the current slots. This technology allows the motor to run much cooler and achieve higher than normal horsepower ratings in standard frame sizes.

**Stator:**  
All motors include an increased Stator stack length and combined M800 low-loss electrical magnetic sheet for a cooler running motor.

**Rotor:**  
Increased stack length with M800 low-loss electrical magnetic sheet assembled and designed with the newest technology and high-grade copper bars.

**Spline Shaft:**  
AISI 430 stainless steel induction hardened and ground to operate in severe conditions. Dimensions according to international 6” NEMA standards.

**Shaft Bearing/Bush:**  
Dual Water lubricated guide bearings made of high-grade carbon, are fixed in upper and lower brackets for optimal operation in sandy wells and pump vibration control.

**Thrust Bearings:**  
All Klassen submersible motors have Kingsbury type thrust bearing. The thrust assembly consists of a high-quality carbon disc with hardened stainless steel shoes to handle necessary pump thrust loads. Available with an axial load capacity of 6000 Lbs (upto 50 HP) and 13849 Lbs (60 to 70 HP).

**Seal Configuration:**  
Klassen offers a triple seal configuration that consists of two outer back to back lip seals in NBR with an inner Silicon Tungsten Carbide Seal for optimum protection in sandy wells.

**Pressure Equalizing System:**  
Pressure compensation is managed by using a suitably sized NBR bellow to allow for expansion of the internal water as it heats up - or - from external pressure due to the depth of submergence.

**Brackets:**  
High resistance cast iron upper and lower bearing housing with epoxy coating.

**Filler Fluid:**  
Water mixed with non-toxic antifreeze provide cooling and lubrication, also protect and prevent inside parts from corrosion.

**Connection:**  
Connected through rubber sheathed cable. Available in Delta & WYE (Star) configuration.

*Note: All specifications are subject to change without any prior notice.*

# 6” Borehole Submersible Motors

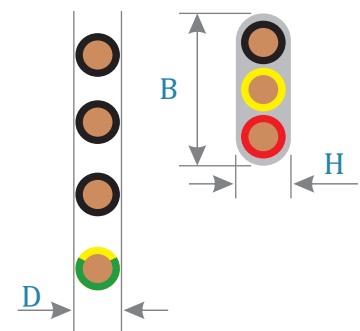
# KM6

## Electrical Data @ 60 Hz - Three Phase - 230/460 Volt - 2 Pole

Motor Type	Motor Size		Thrust Load (lbs)	RPM	Full Load Current (Amps)	S.F Load Current (Amps)	Starting Current (Amps)	Cos Φ at Full Load	Efficiency at Full Load (%)	Service Factor	
	HP	kW									
3 Phase - 230V - 60 Hz	KM6 055T	5.5	4	6000	3440	18.5	20.6	104.0	0.73	76.0	1.15
	KM6 075T	7.5	5.5	6000	3435	25.0	27.6	118.9	0.74	76.4	1.15
	KM6 100T	10	7.5	6000	3450	31.7	35.0	144.9	0.74	79.4	1.15
	KM6 150T	15	11	6000	3440	45.6	50.8	205.7	0.77	80.2	1.15
	KM6 200T	20	15	6000	3455	58.7	65.4	307.4	0.77	82.4	1.15
	KM6 250T	25	18.5	6000	3455	71.7	80.3	363.9	0.78	83.3	1.15
	KM6 300T	30	22	6000	3460	84.7	94.8	466.8	0.80	83.4	1.15
	KM6 400T	40	30	6000	3455	113.6	126.9	681.9	0.78	84.5	1.15
3 Phase - 460V - 60 Hz	KM6 055T	5,5	4	6000	3430	8.9	10.0	50.3	0.77	75.3	1.15
	KM6 075T	7.5	5.5	6000	3425	12.0	13.4	57.6	0.78	75.7	1.15
	KM6 100T	10	7.5	6000	3440	15.1	17.1	70.8	0.79	78.8	1.15
	KM6 150T	15	11	6000	3435	22.1	24.9	101.0	0.79	80.7	1.15
	KM6 200T	20	15	6000	3440	28.8	32.3	151.8	0.80	81.6	1.15
	KM6 250T	25	18.5	6000	3445	35.1	39.5	178.9	0.80	83.4	1.15
	KM6 300T	30	22	13849	3445	42.3	47.5	233.9	0.79	84.4	1.15
	KM6 400T	40	30	13849	3460	55.8	62.6	336.5	0.78	85.7	1.15
	KM6 500T	50	37	13849	3430	70.6	79.2	430.8	0.79	83.8	1.15
	KM6 600T	60	45	13849	3400	84.2	95.3	520.4	0.80	83.2	1.15
	KM6 700T	70	52	13849	3400	96.7	110.3	604.3	0.81	83.3	1.15

## Size & Dimensions Motor Leads @ 60 Hz - 230/460 Volt

Sr. No.	Volt	Motor Size		Lead Size Nos. x Cross Section (mm <sup>2</sup> )	Dimension B x H (inch)	Cable Length (Feet)	Qty (Nr.)
		HP	kW				
DOL	230V	5.5 ~ 15	4 ~ 11	3 x 6	0.75 x 0.31	13	1
				1 x 10	D = 0.24	13	1
	460V	5.5 ~ 30	4 ~ 22	3 x 10	0.95 x 0.35	13	1
				1 x 10	D = 0.24	13	1
3	230V	40	30	1 x 16 *	D = 0.41	13	3
	460V	60 ~ 70	45 ~ 52	1 x 10	D = 0.24	13	1
SD	230V	5.5 ~ 40	4 ~ 30	3 x 6	0.75 x 0.31	13	2
	460V	5.5 ~ 70	4 ~ 52	1 x 10	D = 0.24	13	1

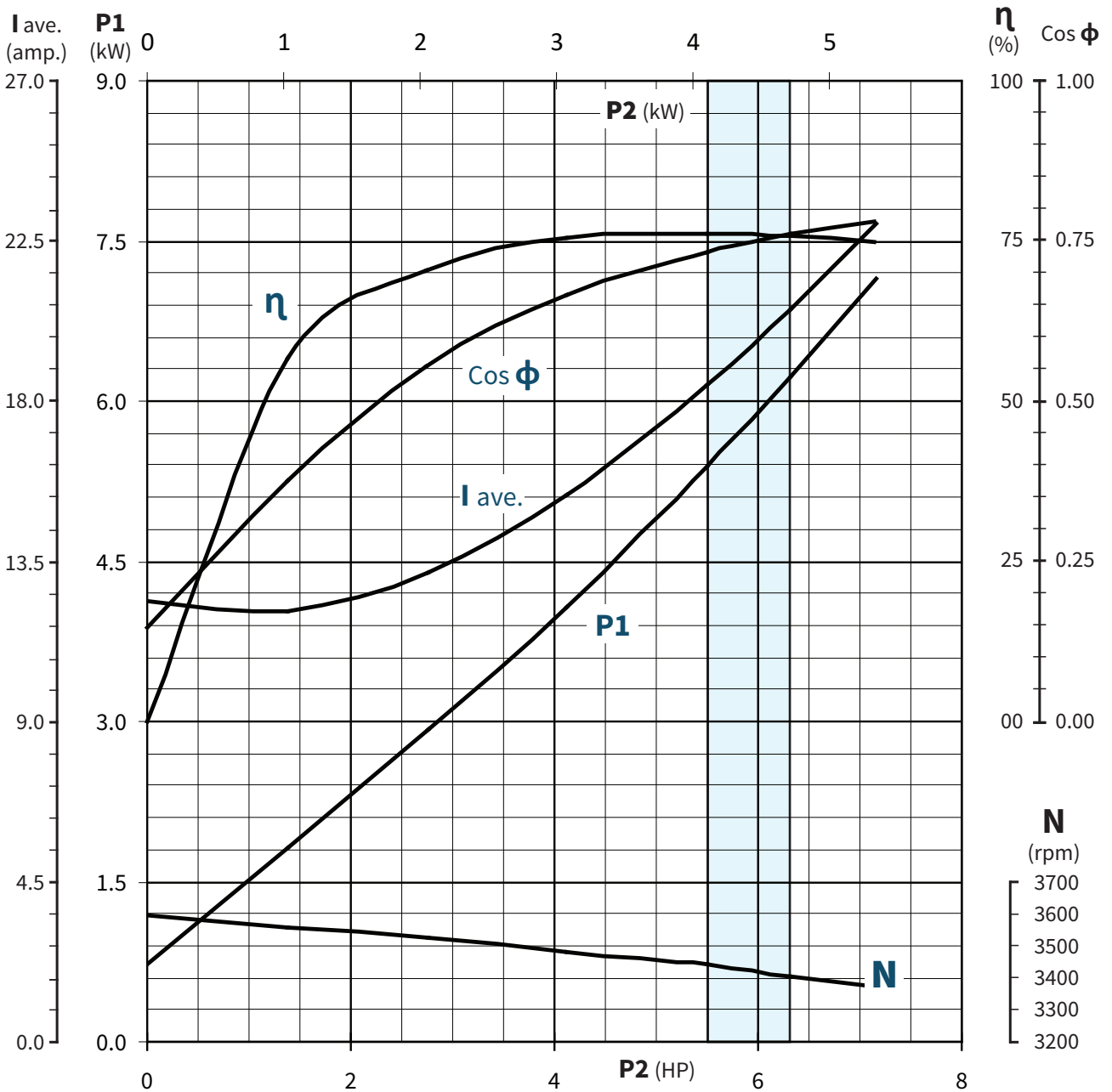


\* 1 x 16 mm<sup>2</sup> as black color used for all three (3) wires.

### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>5.5</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	1.38	2.75	4.13	<b>5.50</b>	6.33	7.15
<b>4.1</b>	Motor Size (kW)	<b>Current (Amp.)</b>	12.36	12.07	13.21	15.35	<b>18.45</b>	20.59	22.99
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	56.70	70.36	75.44	<b>76.04</b>	75.68	74.69
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.147	0.376	0.554	0.667	<b>0.734</b>	0.760	0.780
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3593.5	3553.9	3521.9	3479.8	<b>3439.8</b>	3403.0	3371.4
		<b>Torque (Nm)</b>	0.00	2.76	5.56	8.44	<b>11.39</b>	13.24	15.11
		<b>P1 (kW)</b>	0.72	1.81	2.92	4.08	<b>5.40</b>	6.24	7.14

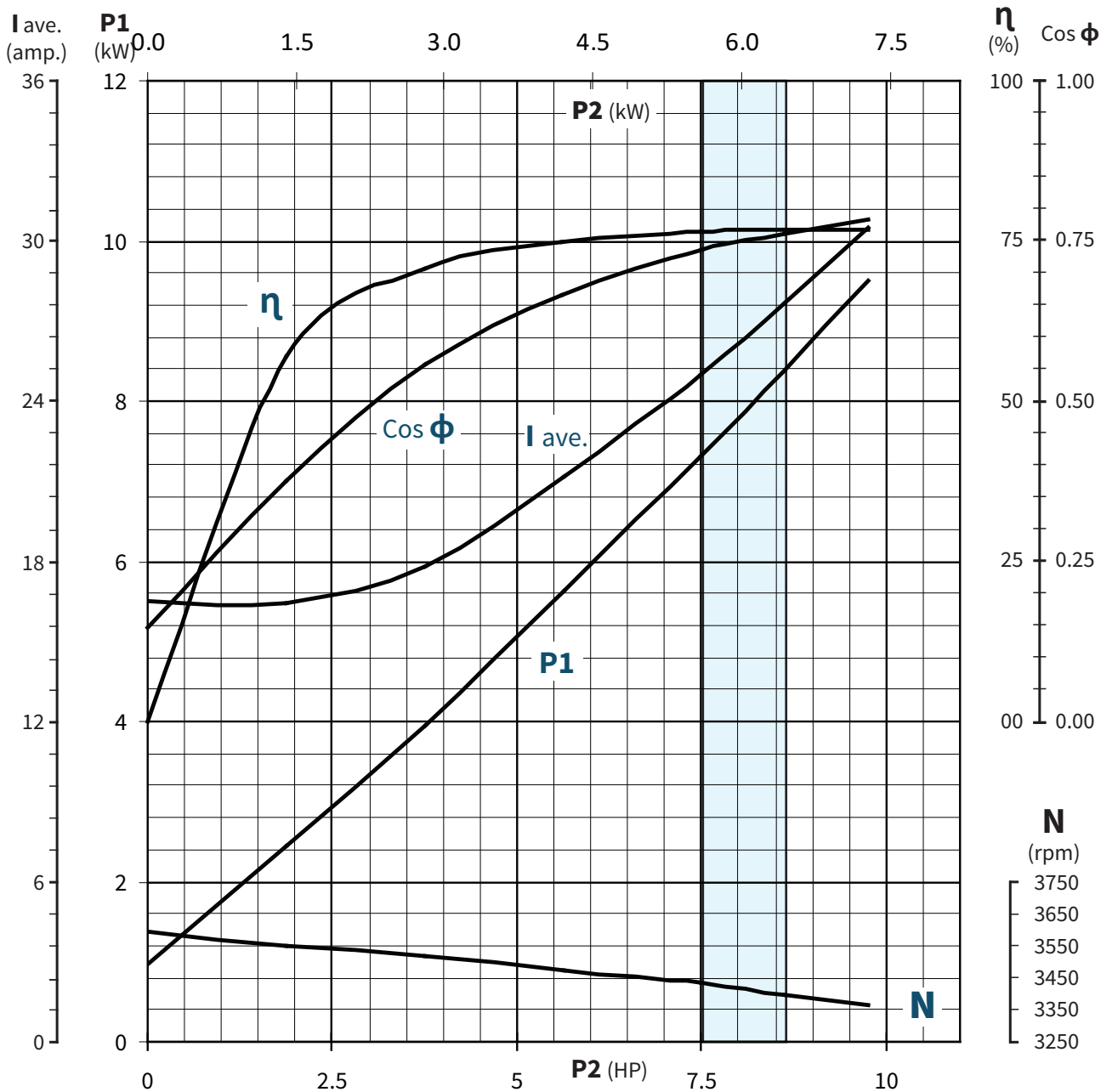
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>7.5</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	1.88	3.75	5.63	<b>7.50</b>	8.63	9.75
<b>5.5</b>	Motor Size (kW)	<b>Current (Amp.)</b>	16.52	16.44	17.83	21.18	<b>24.97</b>	27.64	30.50
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	56.92	70.68	74.69	<b>76.42</b>	76.79	76.60
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.147	0.375	0.557	0.666	<b>0.736</b>	0.761	0.782
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3592.8	3552.1	3519.9	3475.7	<b>3435.4</b>	3396.6	3363.6
		<b>Torque (Nm)</b>	0.00	3.76	7.59	11.53	<b>15.55</b>	18.09	20.65
		<b>P1 (kW)</b>	0.97	2.46	3.96	5.62	<b>7.32</b>	8.38	9.50

Motor Testing Tolerances According to NEMA Standard and IEC 60034-1

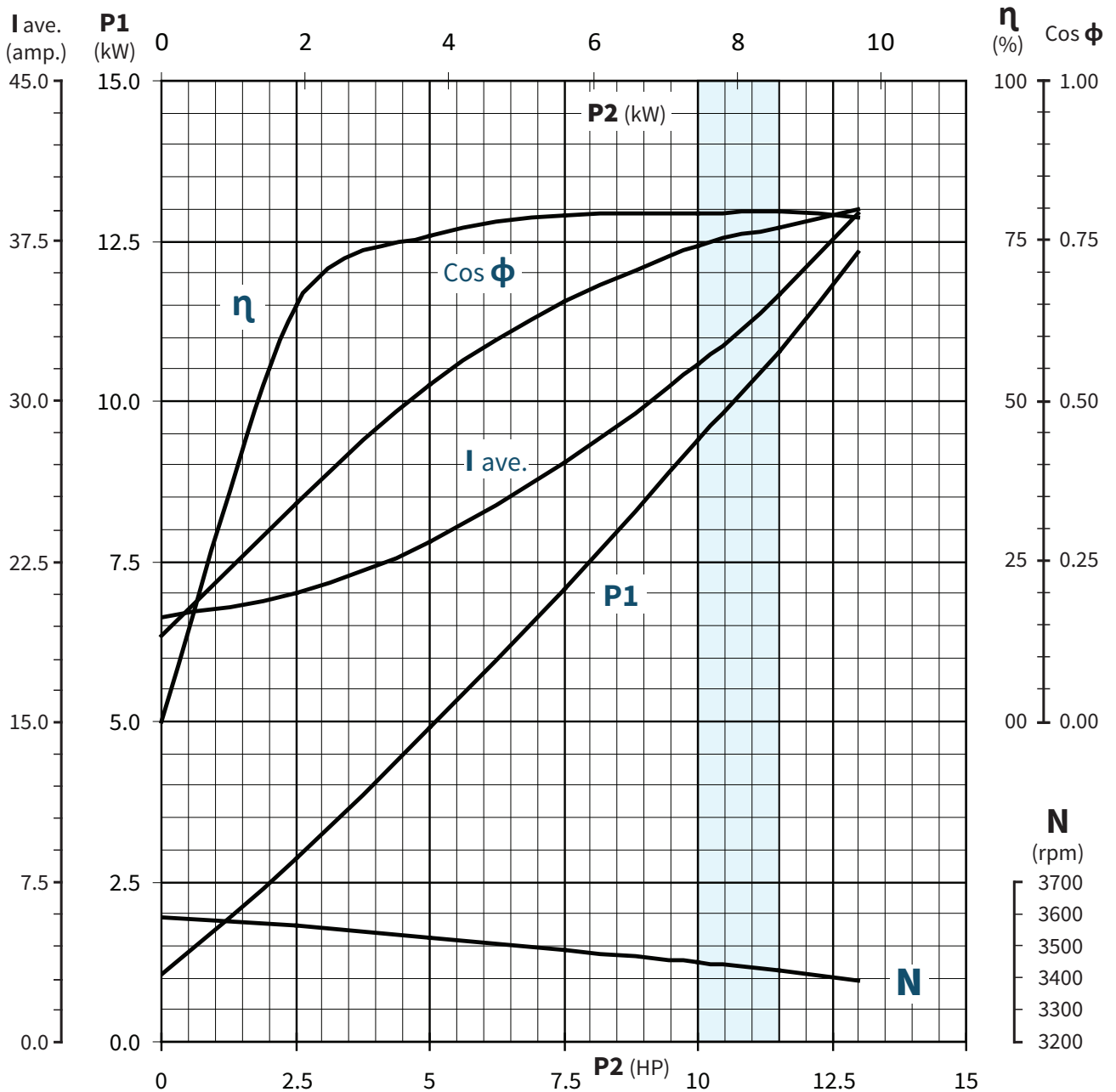




### Motor Performance Curve

Motor Size (HP)	Motor Size (kW)	Volt	Frequency (Hz)	Poles (Nrs)	Load	0%	25%	50%	75%	100%	115%	130%
<b>10</b>					HP (P2)	0.00	2.50	5.00	7.50	<b>10.00</b>	11.50	13.00
<b>7.5</b>					Current (Amp.)	19.84	21.03	23.42	27.15	<b>31.74</b>	35.01	38.81
		<b>230</b>			Efficiency %	0.00	65.05	75.82	78.97	<b>79.41</b>	79.68	78.64
			<b>60</b>		Cos $\Phi$	0.134	0.342	0.527	0.655	<b>0.743</b>	0.772	0.798
				<b>2</b>	RPM	3590.2	3560.4	3526.9	3489.4	<b>3450.0</b>	3421.9	3390.7
					Torque (Nm)	0.00	5.00	10.10	15.31	<b>20.65</b>	23.94	27.31
					P1 (kW)	1.06	2.87	4.92	7.09	<b>9.39</b>	10.77	12.33

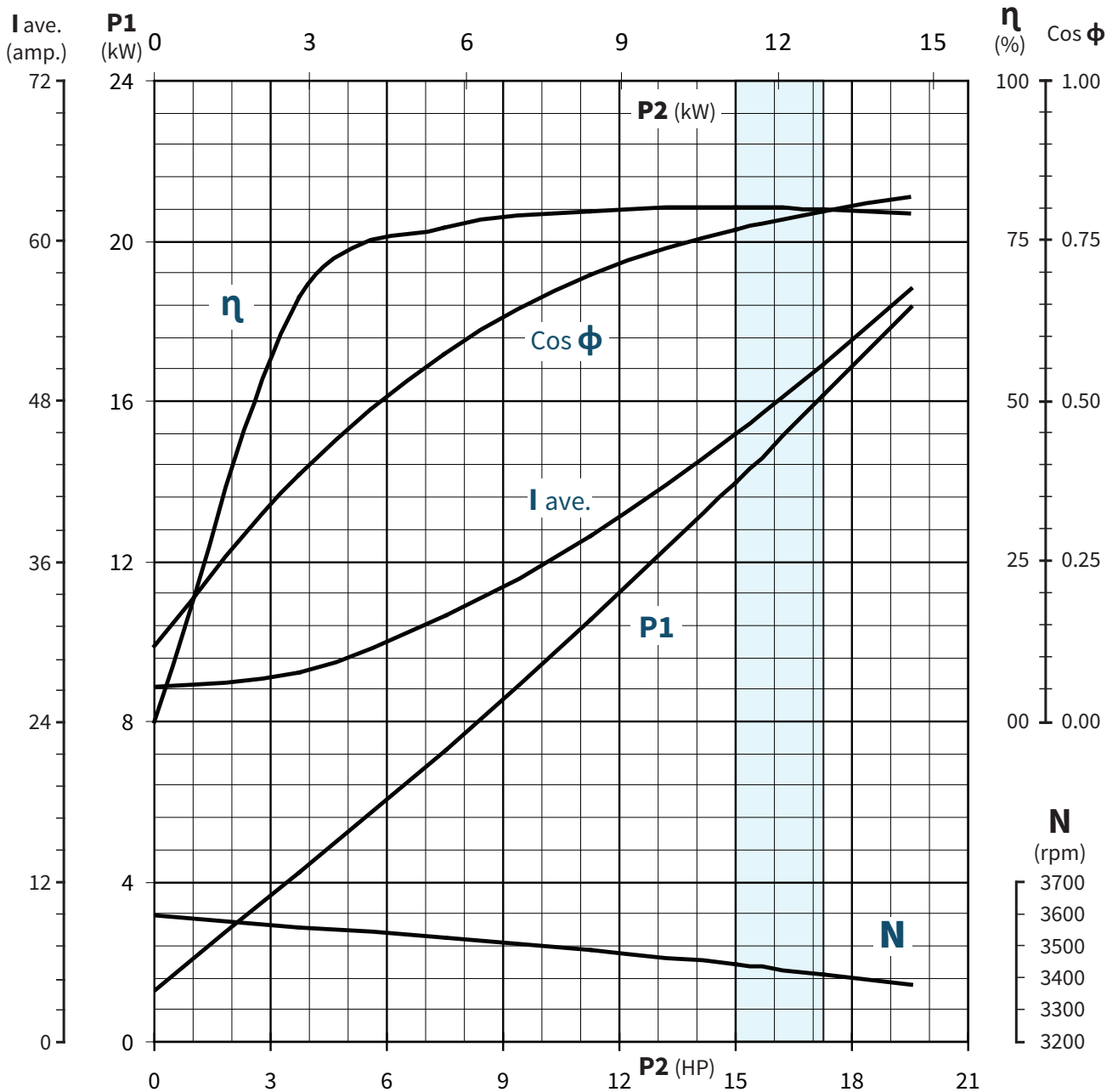
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>15</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	3.75	7.50	11.25	<b>15.00</b>	17.25	19.50
<b>11</b>	Motor Size (kW)	<b>Current (Amp.)</b>	26.55	27.66	31.89	37.94	<b>45.56</b>	50.80	56.36
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	66.12	77.00	79.67	<b>80.17</b>	79.79	79.21
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.119	0.384	0.572	0.697	<b>0.769</b>	0.797	0.818
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3592.2	3558.6	3521.9	3484.3	<b>3440.4</b>	3408.4	3378.0
		<b>Torque (Nm)</b>	0.00	7.51	15.17	23.00	<b>31.06</b>	36.05	41.12
		<b>P1 (kW)</b>	1.26	4.23	7.27	10.53	<b>13.96</b>	16.13	18.36

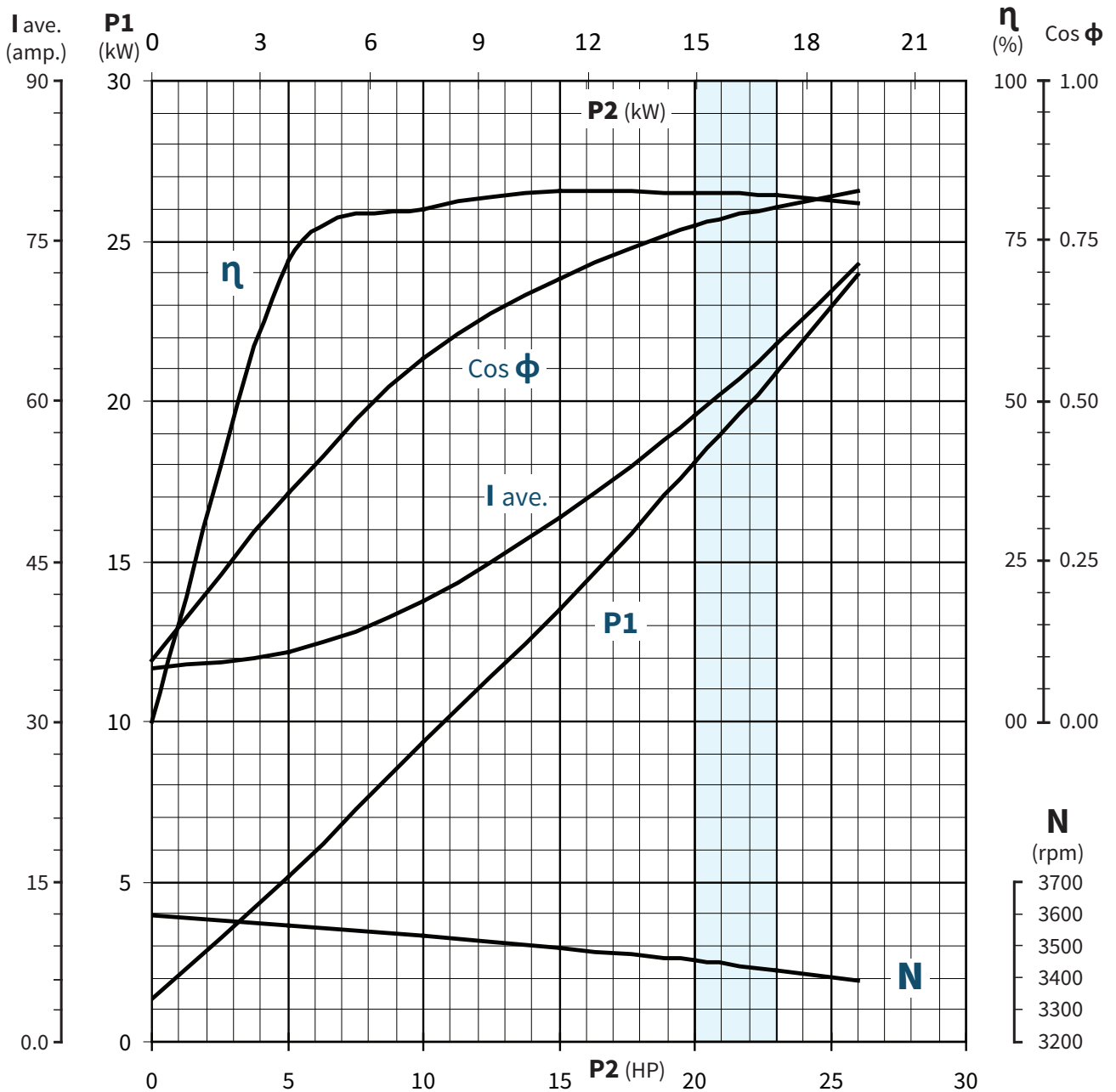
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



### Motor Performance Curve

Motor Size (HP)	Motor Size (kW)	Volt	Frequency (Hz)	Poles (Nrs)	Load	0%	25%	50%	75%	100%	115%	130%
20	15	230	60	2	HP (P2)	0.00	5.00	10.00	15.00	20.00	23.00	26.00
					Current (Amp.)	35.00	36.51	41.34	49.14	58.73	65.36	72.71
					Efficiency %	0.00	72.04	79.90	82.72	82.40	82.07	80.97
					Cos $\Phi$	0.097	0.356	0.567	0.691	0.774	0.803	0.827
					RPM	3595.5	3564.3	3529.5	3492.5	3454.8	3425.3	3390.9
					Torque (Nm)	0.00	9.99	20.18	30.60	41.24	47.83	54.62
					P1 (kW)	1.35	5.18	9.34	13.53	18.11	20.91	23.96

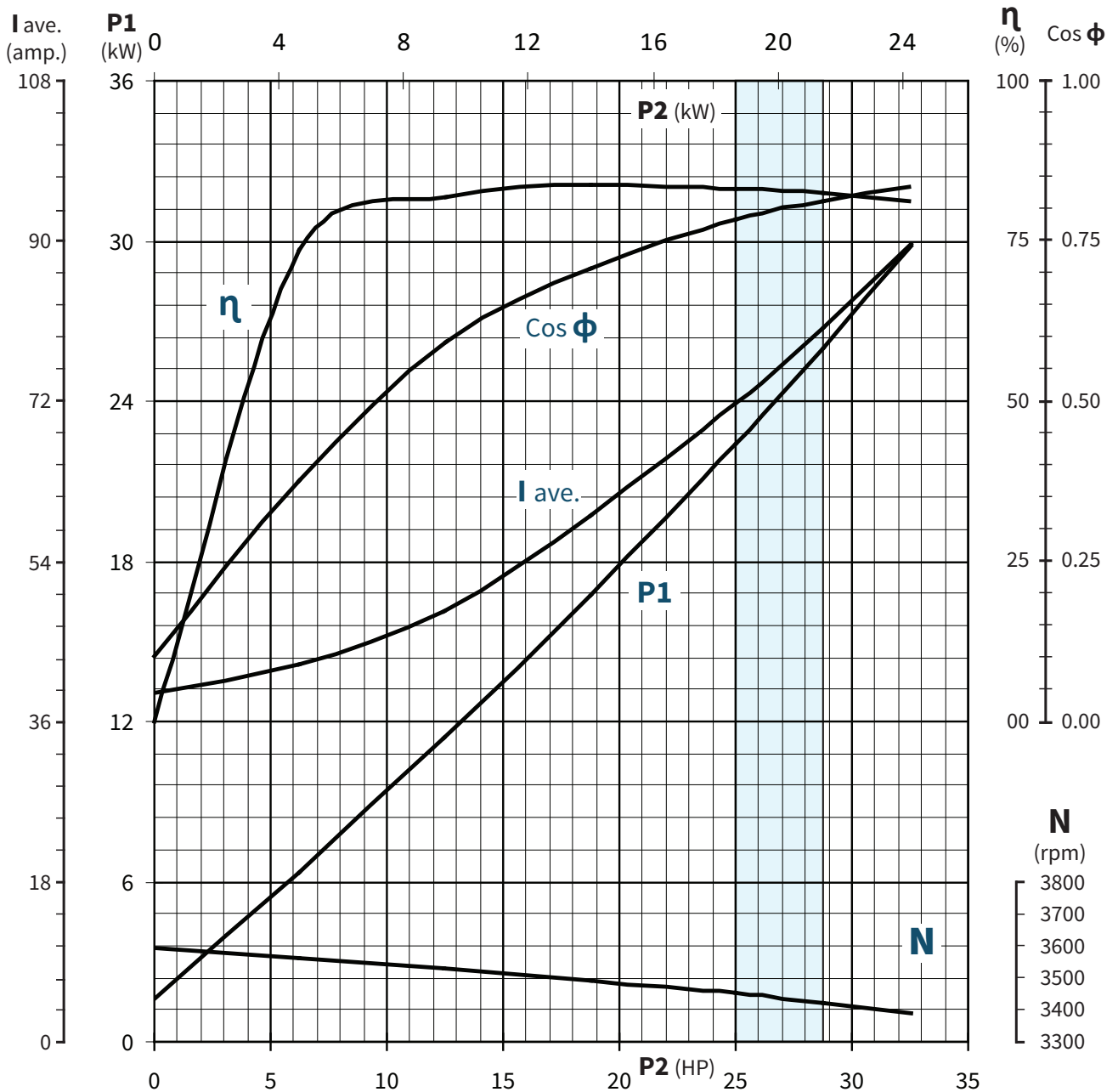
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>25</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	6.25	12.50	18.75	<b>25.00</b>	28.75	32.50
<b>18.5</b>	Motor Size (kW)	<b>Current (Amp.)</b>	39.29	42.41	48.31	59.24	<b>71.72</b>	80.30	89.65
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	73.60	81.99	83.72	<b>83.26</b>	82.47	81.30
<b>60</b>	Frequency (Hz)	<b>Cos <math>\phi</math></b>	0.101	0.375	0.591	0.708	<b>0.784</b>	0.813	0.835
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3593.7	3563.5	3529.4	3493.8	<b>3454.6</b>	3424.1	3392.2
		<b>Torque (Nm)</b>	0.00	12.49	25.23	38.23	<b>51.55</b>	59.81	68.25
		<b>P1 (kW)</b>	1.58	6.34	11.37	16.71	<b>22.40</b>	26.01	29.82

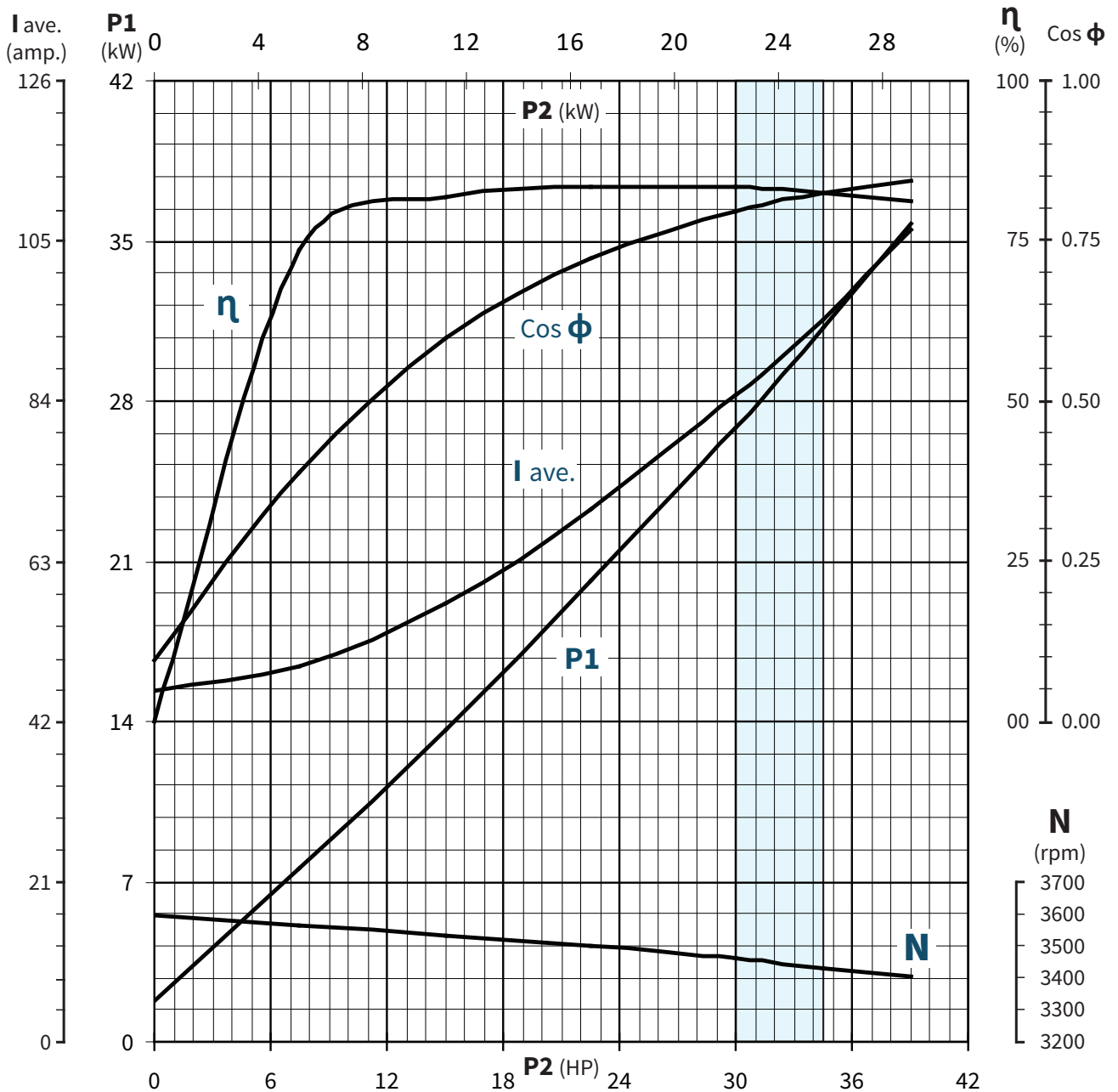
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>30</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	7.50	15.00	22.50	<b>30.00</b>	34.50	39.00
<b>22</b>	Motor Size (kW)	<b>Current (Amp.)</b>	46.04	49.09	57.42	69.87	<b>84.74</b>	94.77	106.39
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	73.54	81.81	83.30	<b>83.39</b>	82.54	81.34
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.095	0.389	0.598	0.724	<b>0.795</b>	0.826	0.844
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3593.6	3565.6	3533.3	3499.0	<b>3459.8</b>	3431.0	3400.9
		<b>Torque (Nm)</b>	0.00	14.98	30.24	45.81	<b>61.77</b>	71.63	81.69
		<b>P1 (kW)</b>	1.74	7.61	13.68	20.15	<b>26.84</b>	31.18	35.77

Motor Testing Tolerances According to NEMA Standard and IEC 60034-1

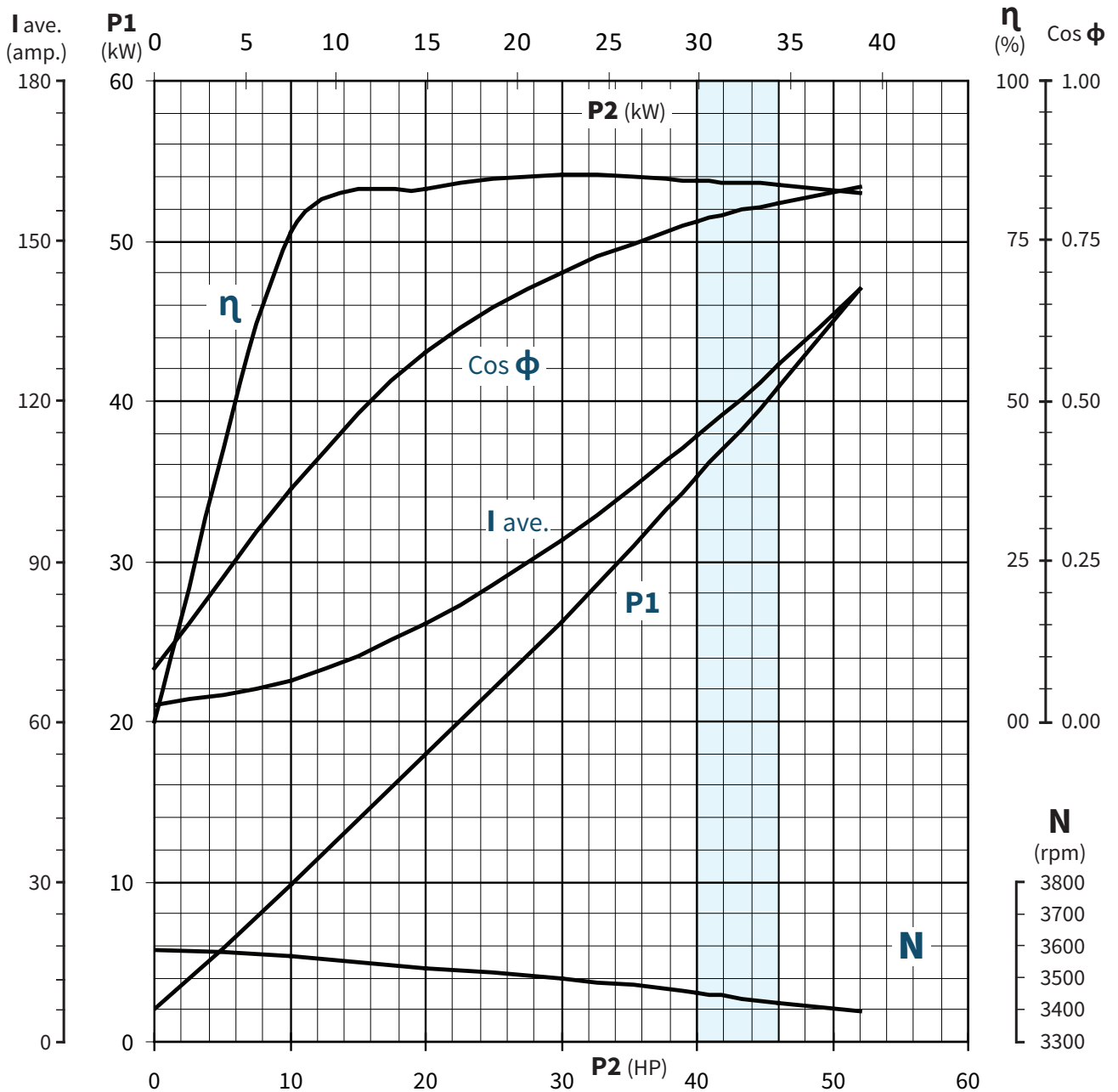




## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>40</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	10.00	20.00	30.00	<b>40.00</b>	46.00	52.00
<b>30</b>	Motor Size (kW)	<b>Current (Amp.)</b>	63.11	67.62	78.44	94.03	<b>113.60</b>	126.93	141.15
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	76.50	83.04	85.23	<b>84.54</b>	83.89	82.62
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.082	0.362	0.575	0.701	<b>0.780</b>	0.809	0.835
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3588.9	3565.7	3530.8	3495.2	<b>3454.6</b>	3424.1	3392.8
		<b>Torque (Nm)</b>	0.00	19.98	40.35	61.15	<b>82.49</b>	95.70	109.18
		<b>P1 (kW)</b>	2.06	9.75	17.97	26.26	<b>35.30</b>	40.91	46.95

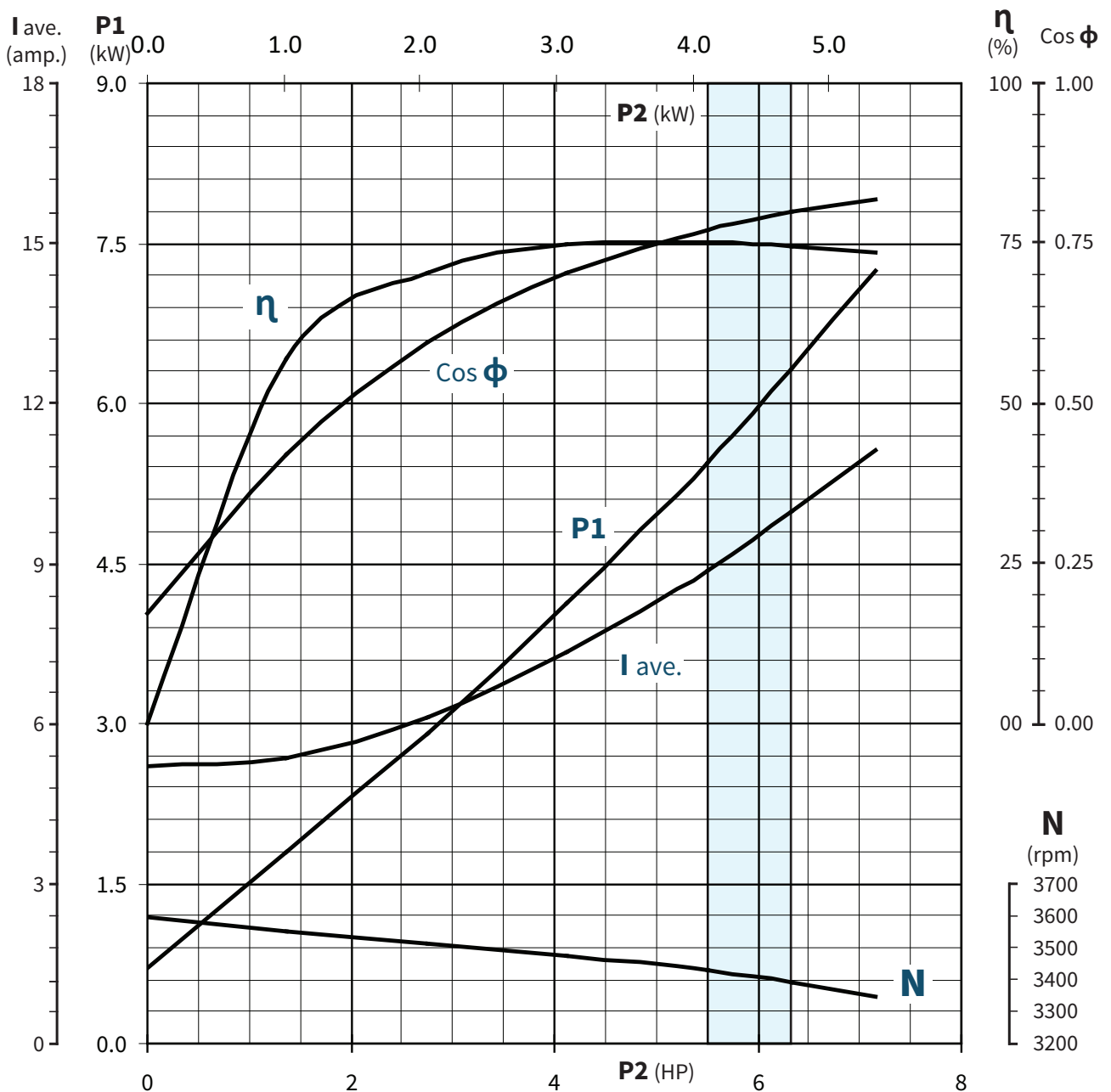
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>5.5</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	1.38	2.75	4.13	<b>5.50</b>	6.33	7.15
<b>4.1</b>	Motor Size (kW)	<b>Current (Amp.)</b>	5.18	5.36	6.13	7.34	<b>8.86</b>	9.96	11.13
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	56.99	70.50	74.69	<b>75.28</b>	74.54	73.57
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.172	0.421	0.596	0.705	<b>0.772</b>	0.798	0.818
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3592.1	3549.6	3514.5	3476.4	<b>3429.6</b>	3388.0	3345.9
		<b>Torque (Nm)</b>	0.00	2.76	5.57	8.45	<b>11.42</b>	13.30	15.22
		<b>P1 (kW)</b>	0.71	1.80	2.91	4.12	<b>5.45</b>	6.33	7.25

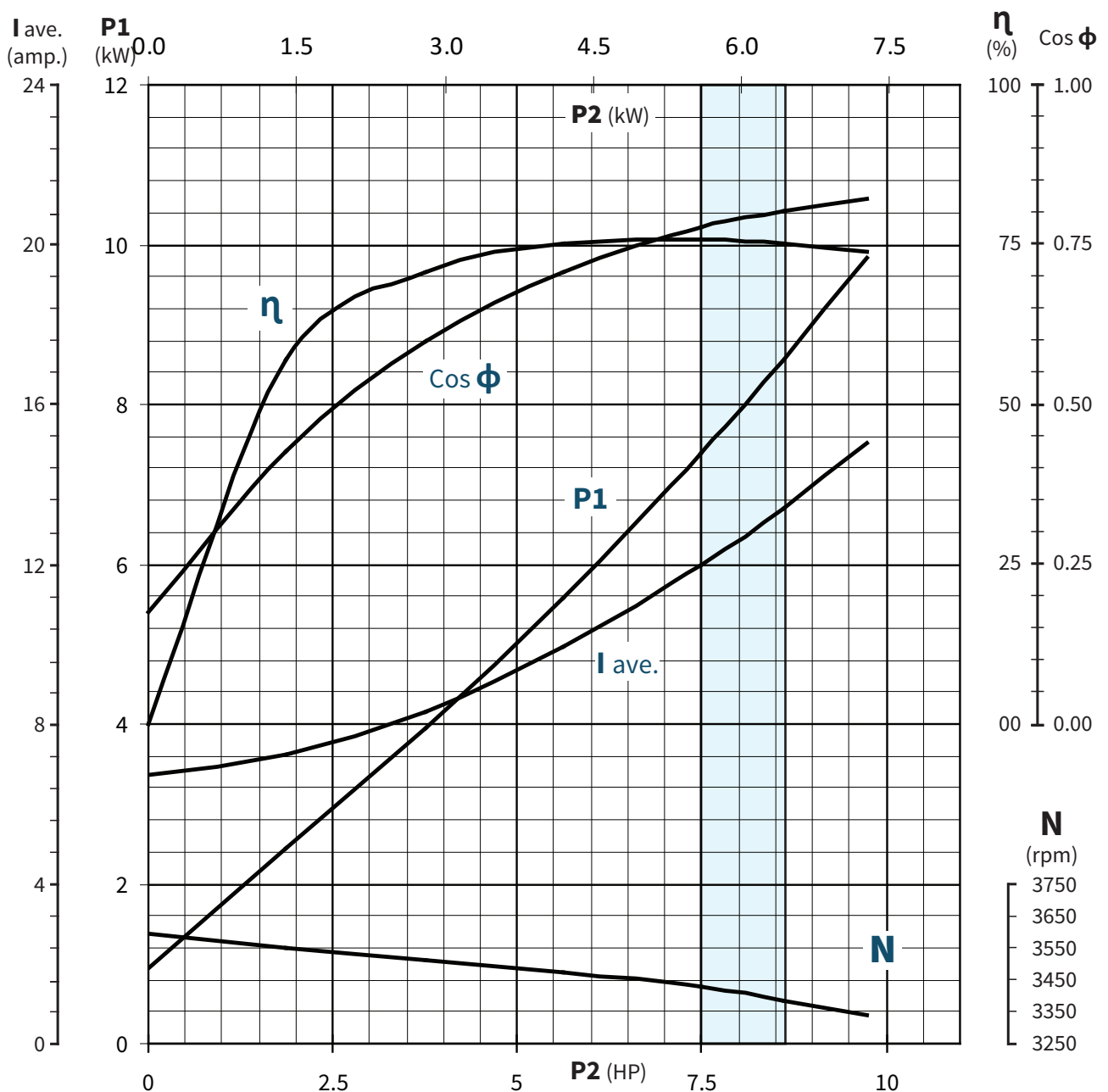
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>7.5</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	1.88	3.75	5.63	<b>7.50</b>	8.63	9.75
<b>5.5</b>	Motor Size (kW)	<b>Current (Amp.)</b>	6.74	7.22	8.29	9.92	<b>11.96</b>	13.40	15.03
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	57.09	70.82	75.07	<b>75.66</b>	75.25	73.92
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.175	0.426	0.598	0.707	<b>0.776</b>	0.801	0.822
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3591.4	3547.6	3512.5	3472.4	<b>3425.2</b>	3381.5	3337.8
		<b>Torque (Nm)</b>	0.00	3.77	7.61	11.54	<b>15.60</b>	18.17	20.81
		<b>P1 (kW)</b>	0.94	2.45	3.95	5.59	<b>7.40</b>	8.55	9.84

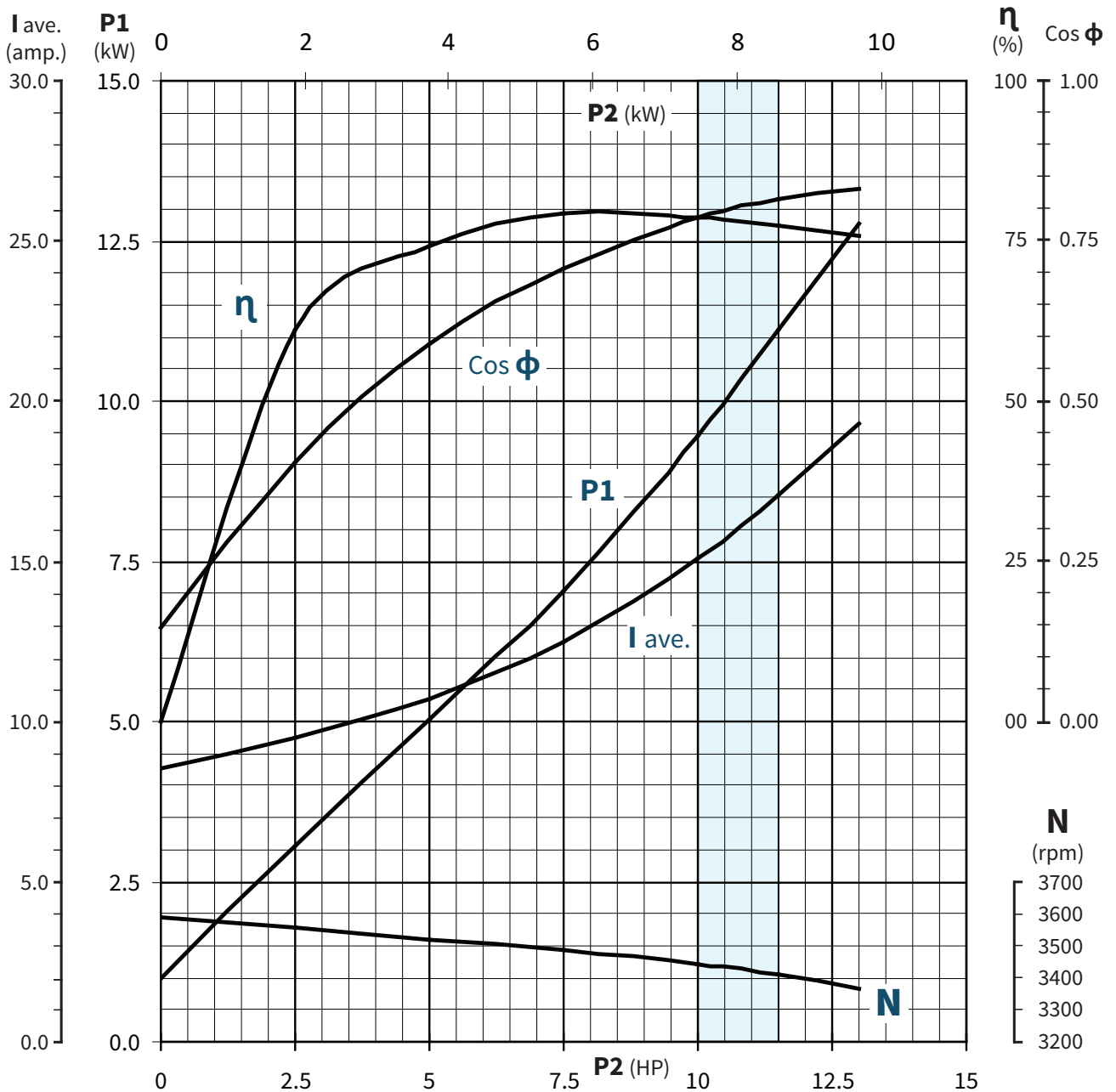
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>10</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	2.50	5.00	7.50	<b>10.00</b>	11.50	13.00
<b>7.5</b>	Motor Size (kW)	<b>Current (Amp.)</b>	8.53	9.47	10.70	12.50	<b>15.10</b>	17.09	19.33
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	61.15	74.30	79.36	<b>78.78</b>	77.29	75.88
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.147	0.404	0.589	0.708	<b>0.787</b>	0.815	0.830
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3588.7	3556.4	3519.7	3485.9	<b>3439.8</b>	3407.5	3366.2
		<b>Torque (Nm)</b>	0.00	5.01	10.12	15.33	<b>20.71</b>	24.04	27.51
		<b>P1 (kW)</b>	1.00	3.05	5.02	7.05	<b>9.47</b>	11.10	12.78

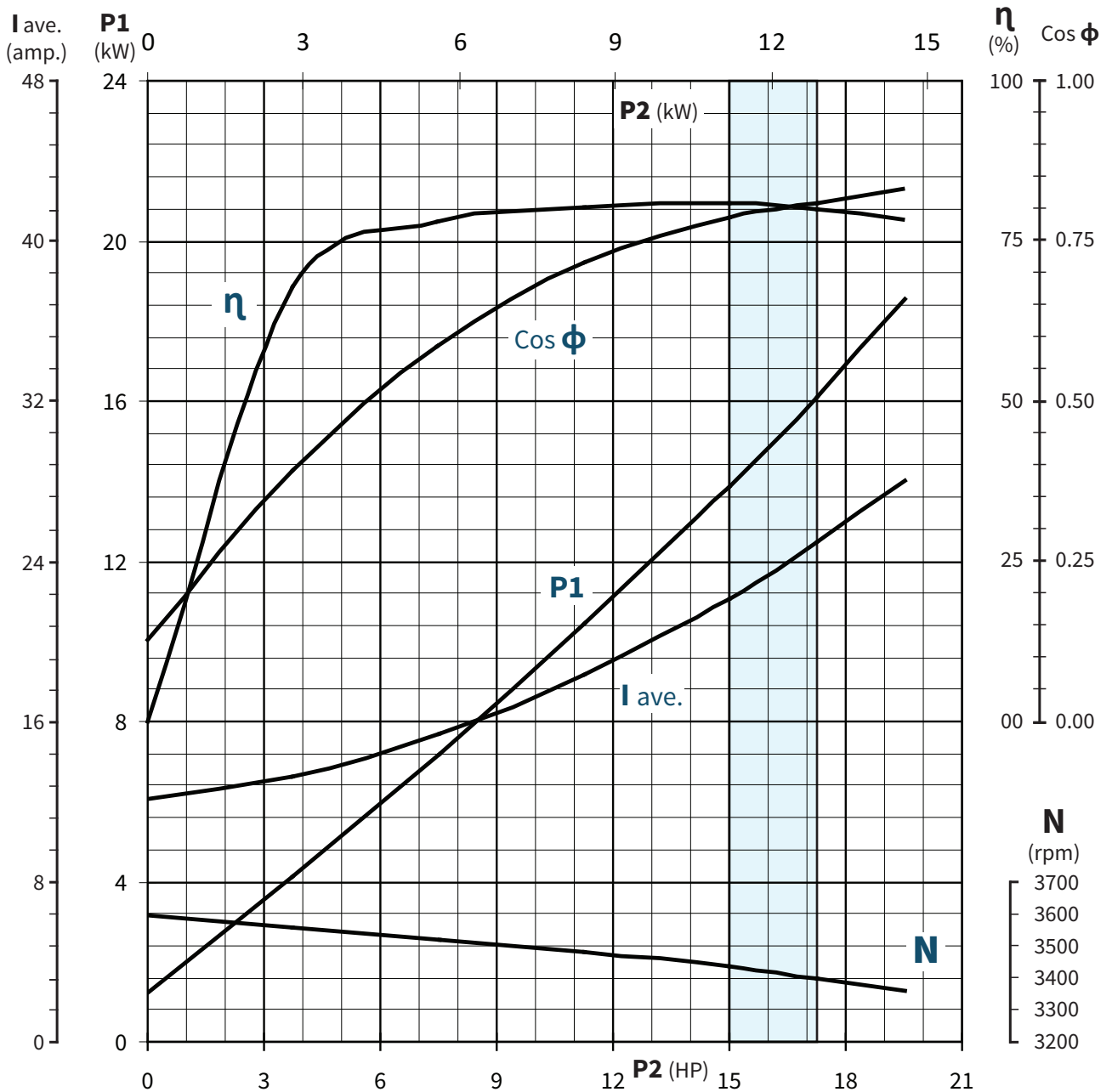
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>15</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	3.75	7.50	11.25	<b>15.00</b>	17.25	19.50
<b>11</b>	Motor Size (kW)	<b>Current (Amp.)</b>	12.16	13.23	15.38	18.34	<b>22.13</b>	24.95	28.02
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	67.90	77.92	80.31	<b>80.74</b>	80.03	78.42
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.128	0.391	0.586	0.715	<b>0.786</b>	0.809	0.831
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3591.9	3557.9	3518.5	3479.7	<b>3435.2</b>	3397.3	3360.8
		<b>Torque (Nm)</b>	0.00	7.51	15.18	23.03	<b>31.11</b>	36.17	41.33
		<b>P1 (kW)</b>	1.24	4.12	7.18	10.45	<b>13.86</b>	16.08	18.55

Motor Testing Tolerances According to NEMA Standard and IEC 60034-1

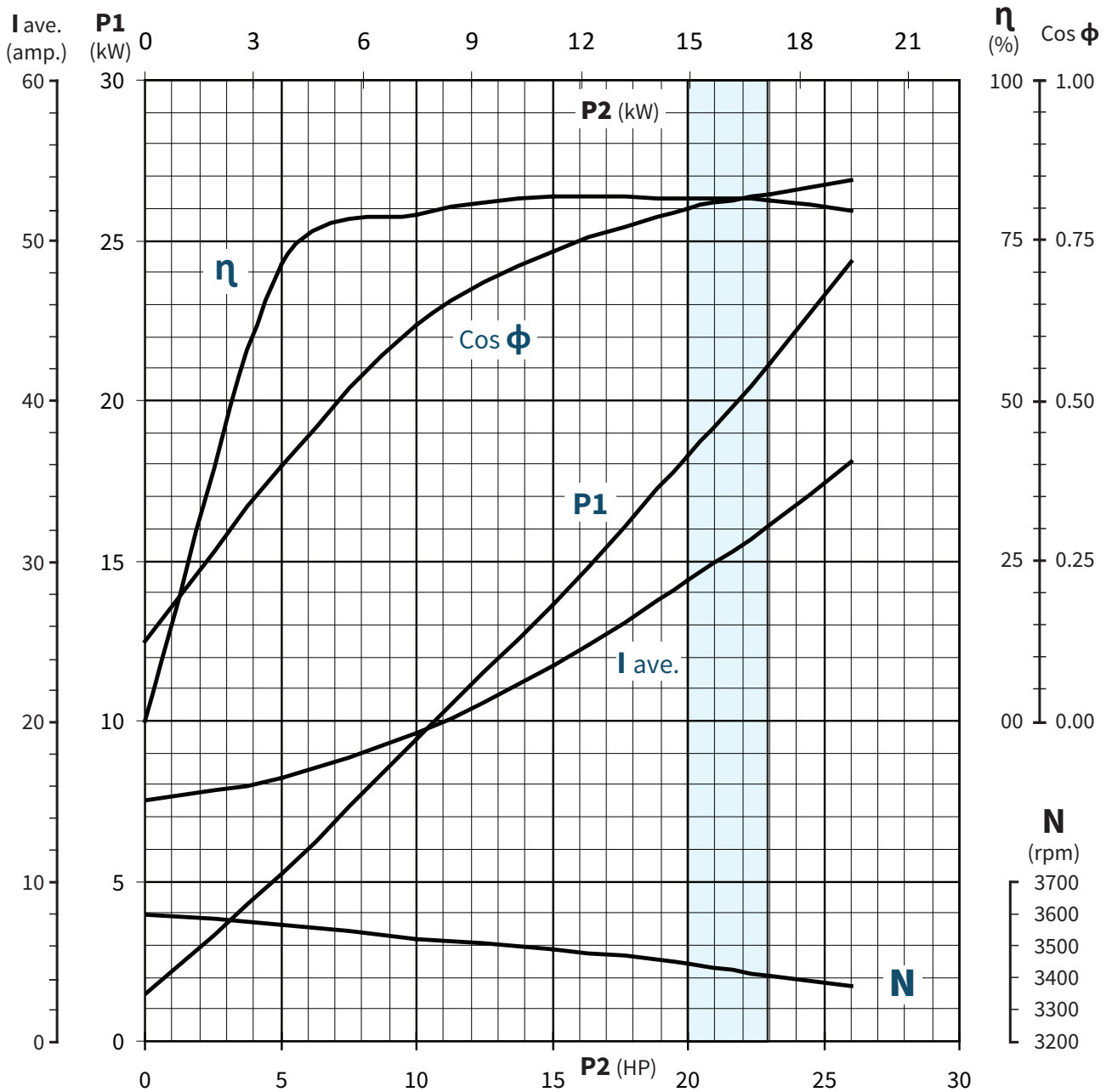




### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>20</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	5.00	10.00	15.00	<b>20.00</b>	23.00	26.00
<b>15</b>	Motor Size (kW)	<b>Current (Amp.)</b>	15.00	16.49	19.19	23.41	<b>28.77</b>	32.27	36.12
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	71.32	78.94	81.98	<b>81.57</b>	81.09	79.75
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.123	0.398	0.618	0.732	<b>0.798</b>	0.823	0.845
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3593.8	3565.0	3517.1	3483.5	<b>3440.4</b>	3405.2	3371.6
		<b>Torque (Nm)</b>	0.00	9.99	20.25	30.68	<b>41.41</b>	48.12	54.94
		<b>P1 (kW)</b>	1.47	5.23	9.45	13.65	<b>18.29</b>	21.16	24.32

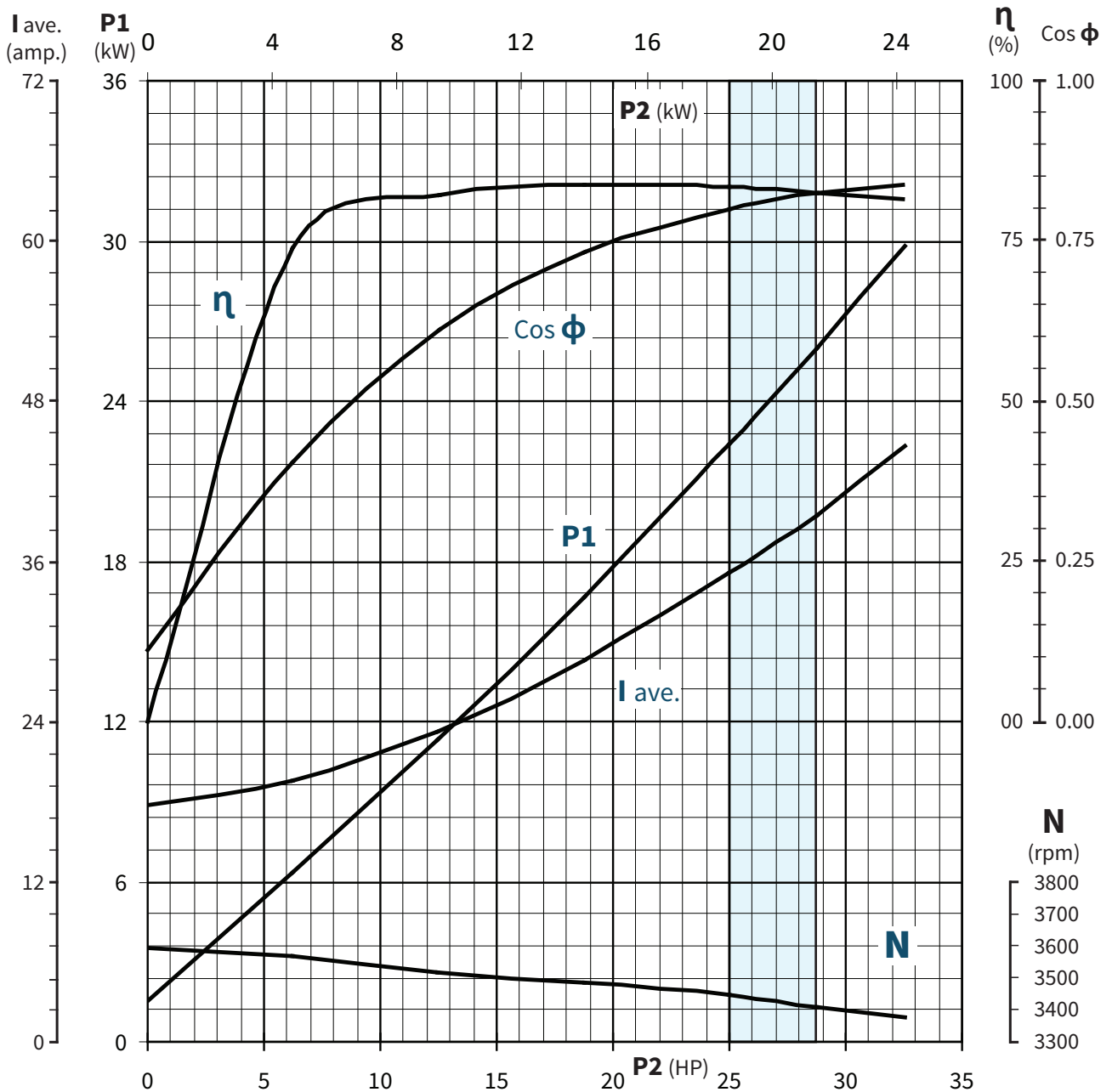
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>25</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	6.25	12.50	18.75	<b>25.00</b>	28.75	32.50
<b>18.5</b>	Motor Size (kW)	<b>Current (Amp.)</b>	17.69	19.56	23.28	28.54	<b>35.13</b>	39.48	44.60
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	73.89	82.16	83.81	<b>83.41</b>	82.55	81.41
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.110	0.405	0.612	0.734	<b>0.799</b>	0.826	0.838
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3593.9	3566.0	3519.6	3487.0	<b>3445.2</b>	3411.1	3378.6
		<b>Torque (Nm)</b>	0.00	12.49	25.30	38.31	<b>51.69</b>	60.04	68.53
		<b>P1 (kW)</b>	1.55	6.31	11.35	16.69	<b>22.36</b>	25.98	29.78

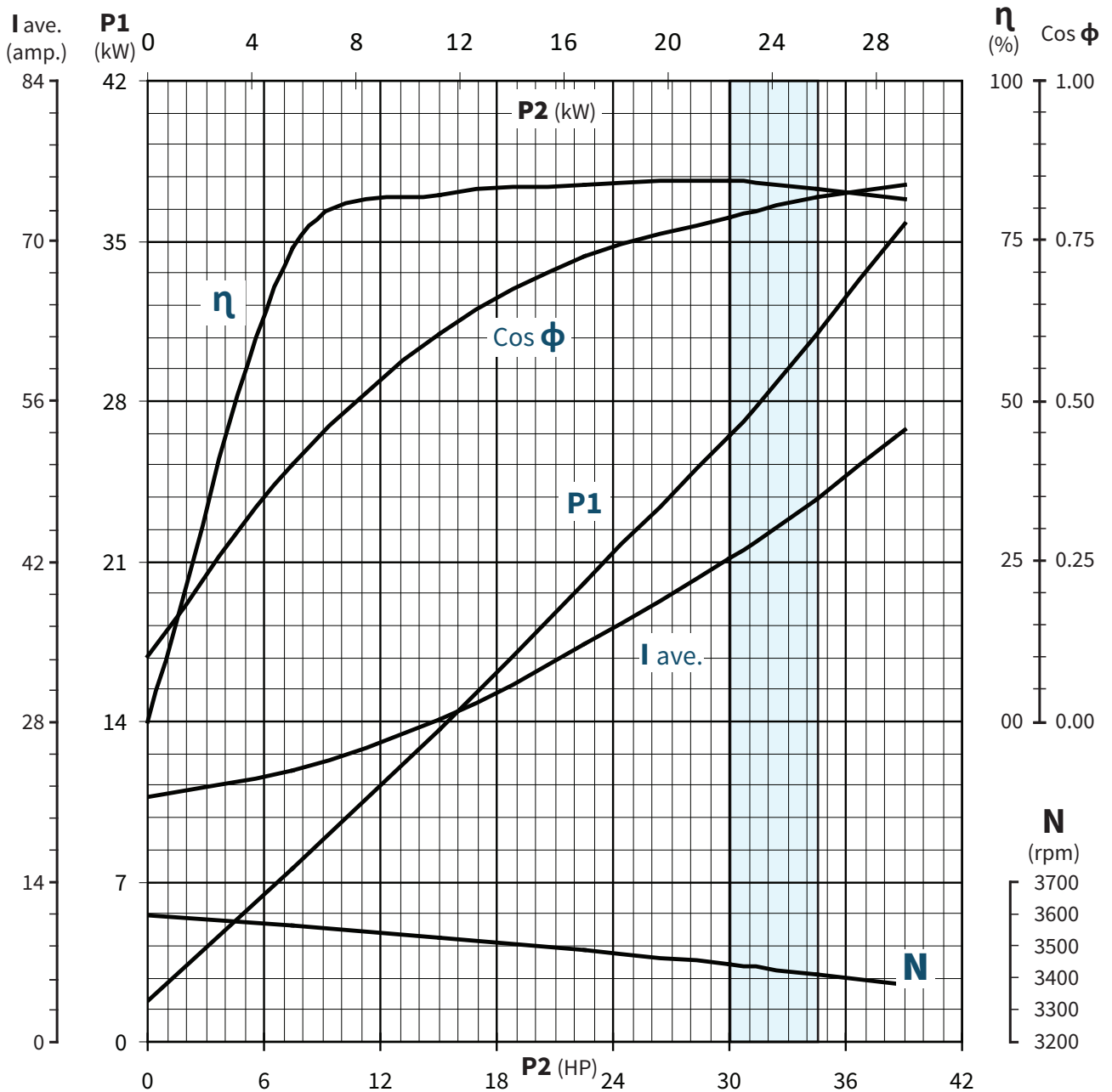
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>30</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	7.50	15.00	22.50	<b>30.00</b>	34.50	39.00
<b>22</b>	Motor Size (kW)	<b>Current (Amp.)</b>	21.45	23.69	28.24	34.71	<b>42.35</b>	47.49	53.50
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	73.91	82.22	83.72	<b>84.39</b>	83.16	81.45
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.103	0.401	0.605	0.725	<b>0.786</b>	0.818	0.838
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3596.5	3561.6	3523.8	3486.5	<b>3444.6</b>	3410.5	3376.3
		<b>Torque (Nm)</b>	0.00	15.00	30.32	45.97	<b>62.04</b>	72.06	82.29
		<b>P1 (kW)</b>	1.76	7.57	13.61	20.05	<b>26.52</b>	30.95	35.72

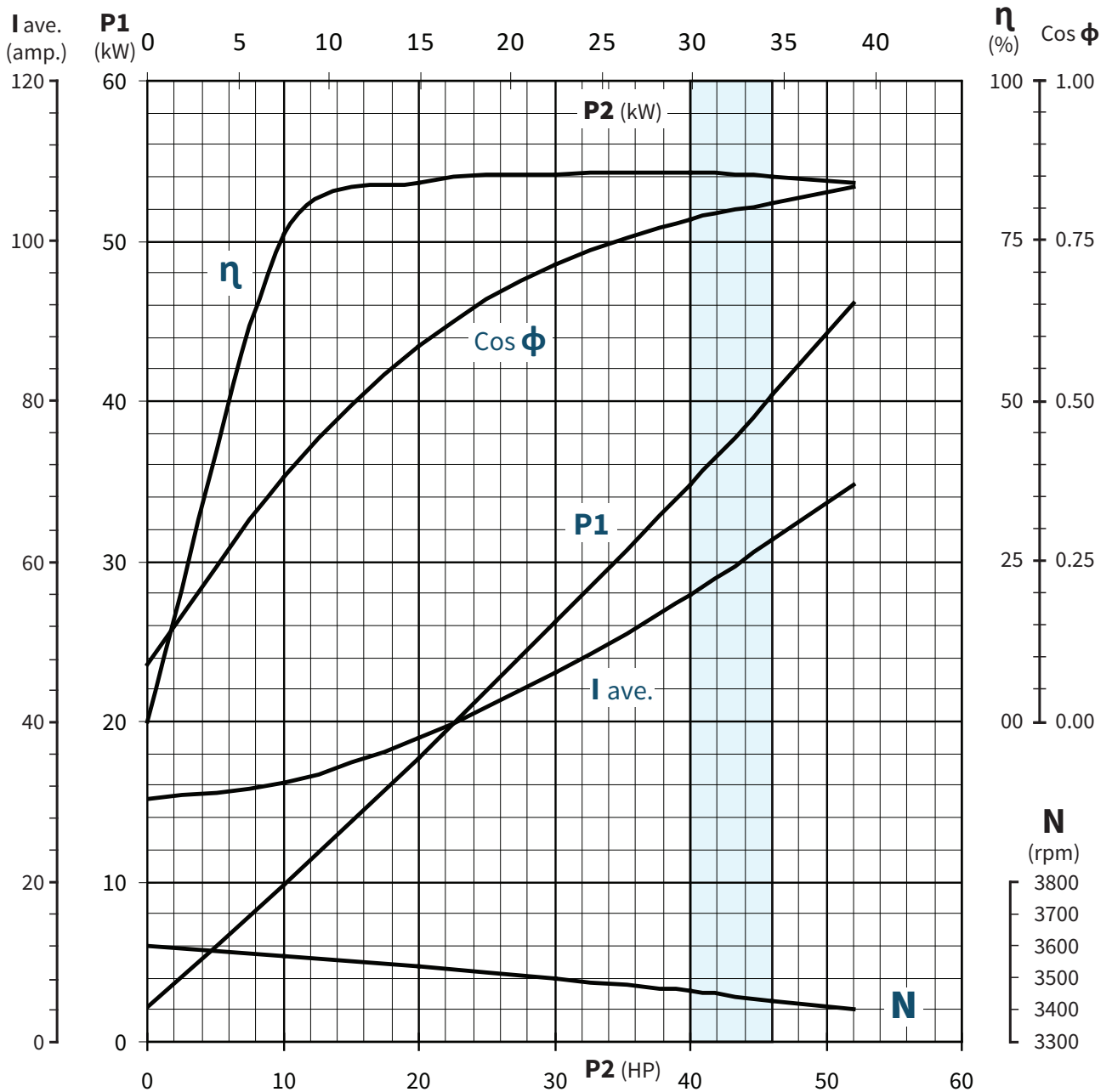
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>40</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	10.00	20.00	30.00	<b>40.00</b>	46.00	52.00
<b>30</b>	Motor Size (kW)	<b>Current (Amp.)</b>	30.26	32.28	38.02	46.15	<b>55.80</b>	62.63	69.49
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	76.12	84.20	85.49	<b>85.72</b>	84.90	84.11
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.090	0.381	0.585	0.712	<b>0.783</b>	0.810	0.833
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3596.5	3566.3	3532.6	3499.0	<b>3459.8</b>	3427.6	3405.1
		<b>Torque (Nm)</b>	0.00	19.98	40.33	61.08	<b>82.36</b>	95.60	108.79
		<b>P1 (kW)</b>	2.17	9.80	17.72	26.18	<b>34.81</b>	40.42	46.12

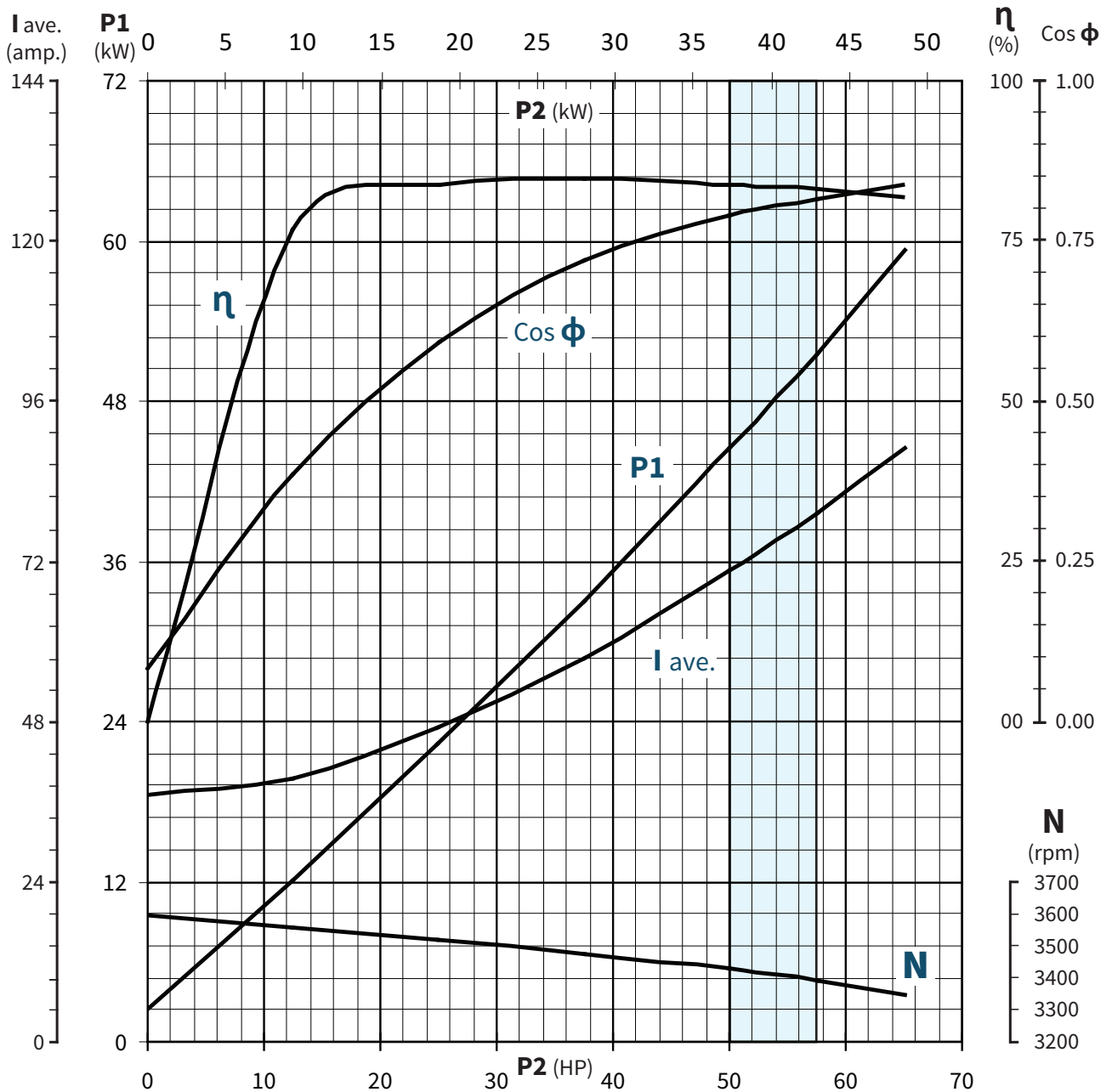
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>50</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	12.50	25.00	37.50	<b>50.00</b>	57.50	65.00
<b>37</b>	Motor Size (kW)	<b>Current (Amp.)</b>	36.90	39.58	47.09	57.48	<b>70.63</b>	79.25	89.00
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	76.81	83.82	84.85	<b>83.80</b>	83.26	81.70
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.083	0.385	0.593	0.720	<b>0.791</b>	0.816	0.837
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3595.7	3559.8	3519.8	3474.7	<b>3429.6</b>	3390.5	3347.9
		<b>Torque (Nm)</b>	0.00	25.01	50.60	76.88	<b>103.86</b>	120.81	138.31
		<b>P1 (kW)</b>	2.44	12.14	22.25	32.97	<b>44.51</b>	51.52	59.35

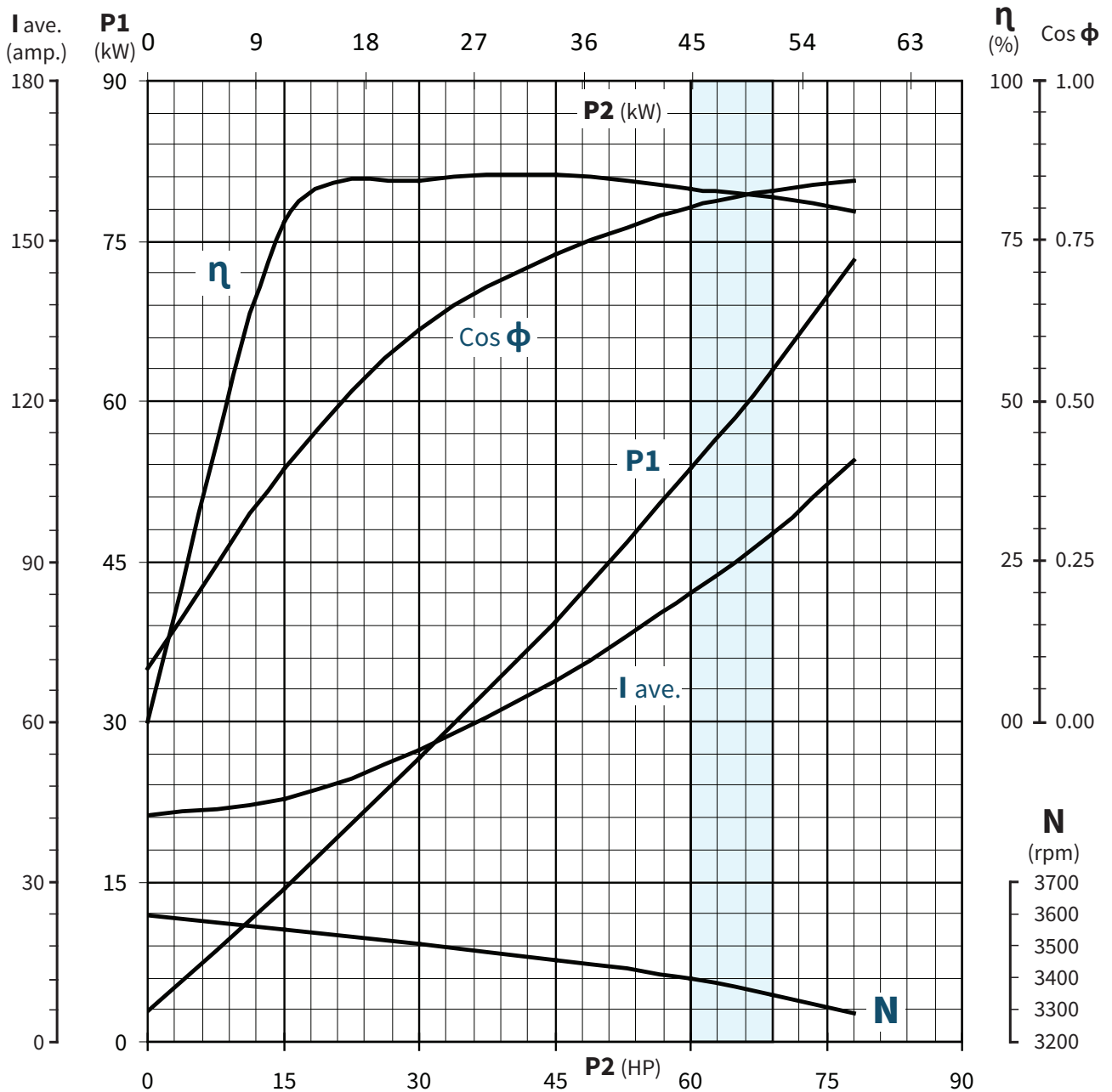
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>60</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	15.00	30.00	45.00	<b>60.00</b>	69.00	78.00
<b>45</b>	Motor Size (kW)	<b>Current (Amp.)</b>	42.29	45.50	54.53	67.75	<b>84.17</b>	95.31	108.96
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	78.14	84.45	85.31	<b>83.23</b>	81.96	79.51
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.084	0.395	0.610	0.729	<b>0.802</b>	0.827	0.843
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3594.3	3552.9	3505.4	3453.6	<b>3399.8</b>	3347.7	3291.3
		<b>Torque (Nm)</b>	0.00	30.08	60.97	92.82	<b>125.72</b>	146.83	168.83
		<b>P1 (kW)</b>	2.83	14.32	26.50	39.35	<b>53.78</b>	62.80	73.18

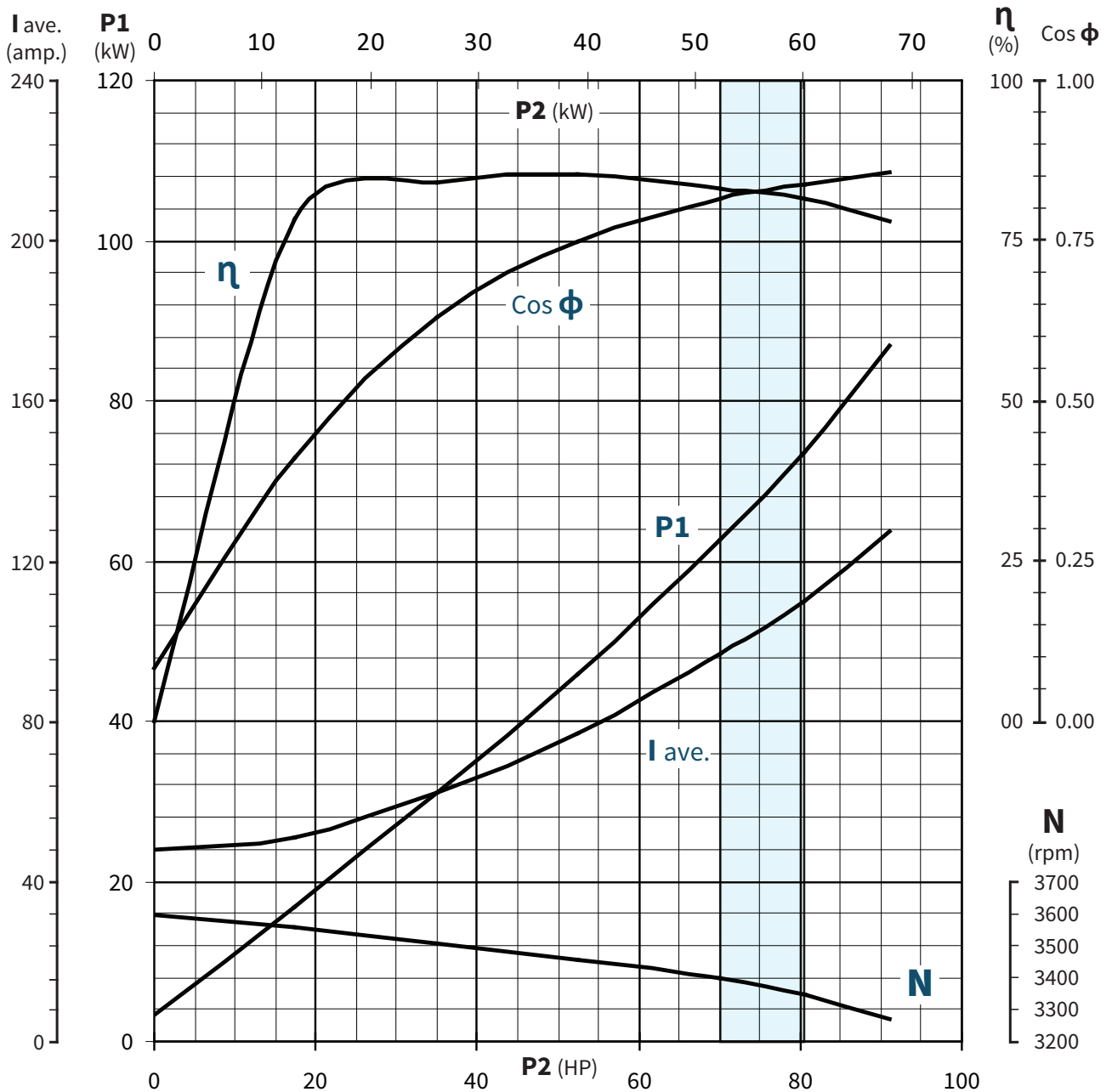
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



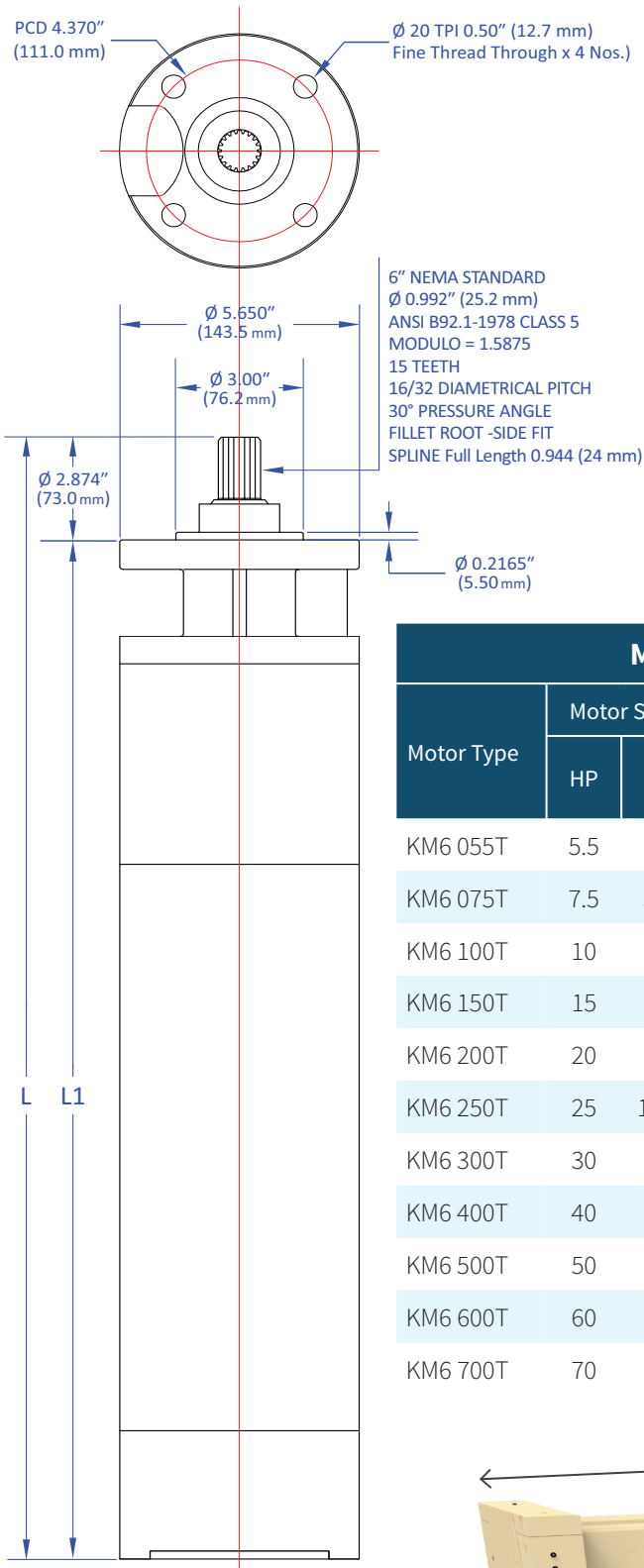
### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	130%
<b>70</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	17.50	35.00	52.50	<b>70.00</b>	80.50	91.00
<b>52</b>	Motor Size (kW)	<b>Current (Amp.)</b>	47.82	51.09	61.96	76.90	<b>96.71</b>	110.28	127.36
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	78.22	84.09	85.23	<b>83.26</b>	81.56	78.16
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.084	0.410	0.629	0.750	<b>0.814</b>	0.838	0.856
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3596.5	3554.1	3505.8	3456.0	<b>3400.2</b>	3344.1	3272.3
		<b>Torque (Nm)</b>	0.00	35.08	71.12	108.22	<b>146.66</b>	171.48	198.10
		<b>P1 (kW)</b>	3.20	16.69	31.05	45.95	<b>62.72</b>	73.63	86.86

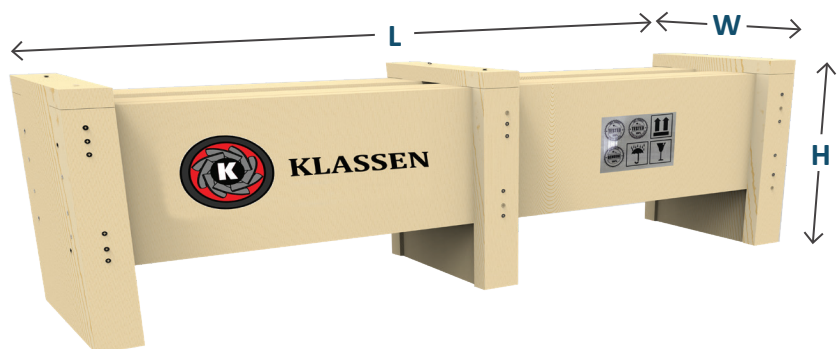
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Technical Data

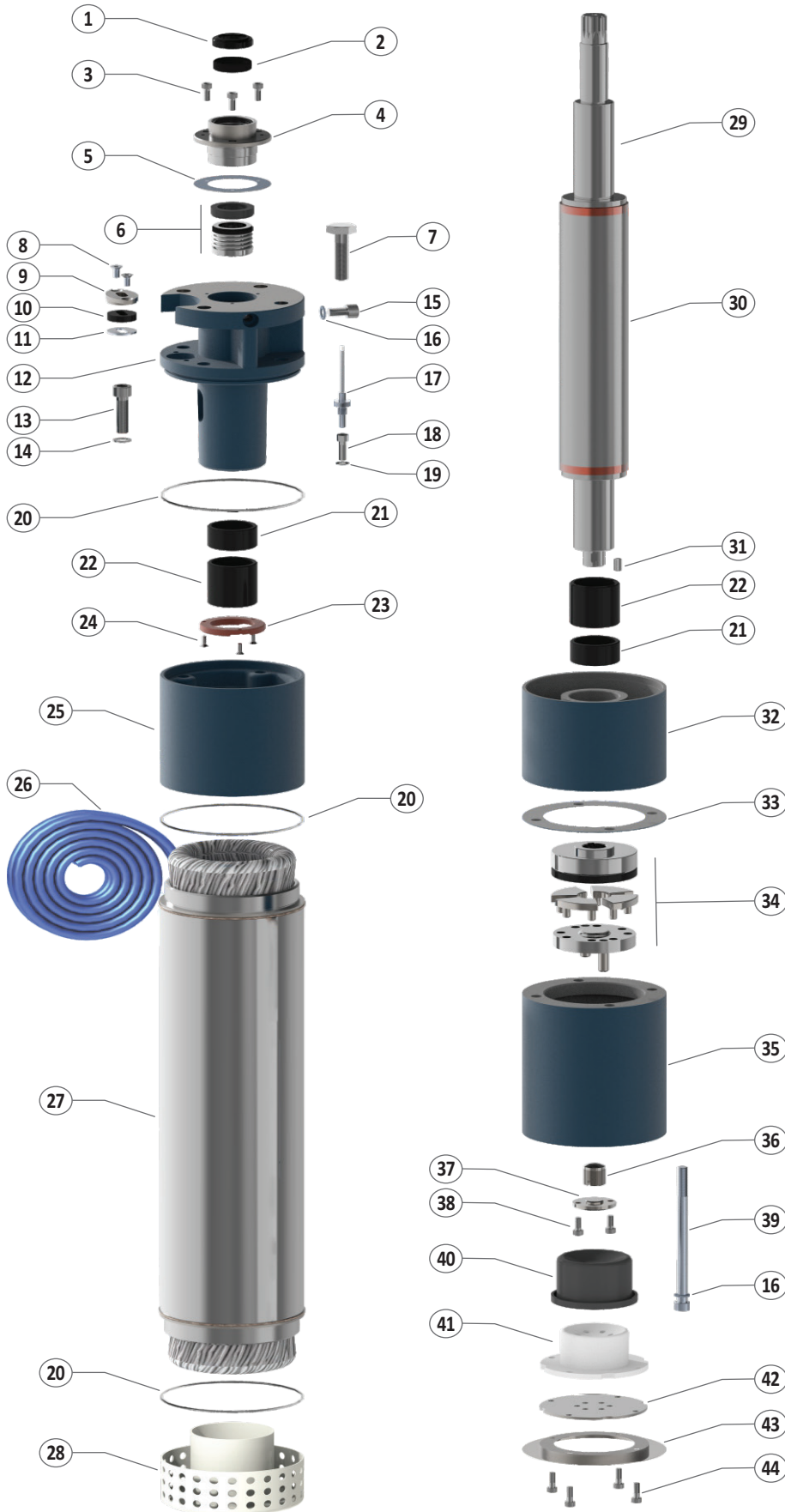


Motor Dimensions and Weights							
Motor Type	Motor Size		L Motor Length (inch)	L1 Motor Length (inch)	Packing Dimension W x H x L (inch)	Weight (Lbs)	
	HP	kW				Without Packing	With Packing
KM6 055T	5.5	4	30.9	28	10.0 x 14.0 x 35.6	122	141
KM6 075T	7.5	5.5	30.9	28	10.0 x 14.0 x 35.6	122	141
KM6 100T	10	7.5	32.9	30	10.0 x 14.0 x 35.6	133	152
KM6 150T	15	11	36.2	33.4	10.0 x 14.0 x 42.3	155	177
KM6 200T	20	15	39.8	36.9	10.0 x 14.0 x 42.3	175	197
KM6 250T	25	18.5	43.3	40.4	10.0 x 14.0 x 45.9	197	221
KM6 300T	30	22	46.7	43.8	10.0 x 14.0 x 50.2	217	243
KM6 400T	40	30	52	49.1	10.0 x 14.0 x 55.1	248	276
KM6 500T	50	37	52	49.1	10.0 x 14.0 x 55.1	248	276
KM6 600T	60	45	54.7	51.8	10.0 x 14.0 x 57.7	259	290
KM6 700T	70	52	57	54.1	10.0 x 14.0 x 60.6	276	307

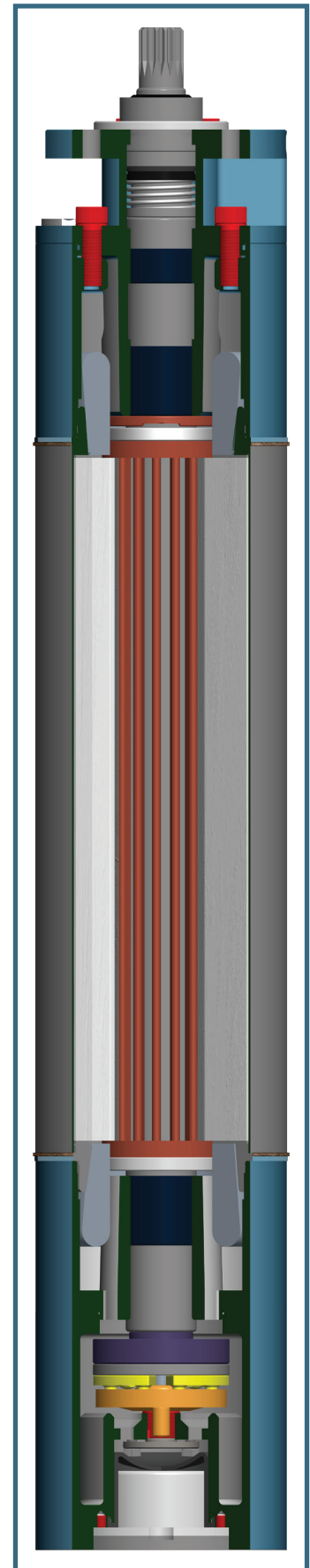




### Exploded View



### Cross-Sectional View



## Motor Parts List with Material & Quantity

Pos.	Item Code	Part Name	Material	Qty	Unit
1	60101480	Wiper Seal	NBR + Stainless Steel	1	Nr
2	60101475	Lip Seal / Oil Seal	NBR + Stainless Steel	1	Nr
3	60101075	Allen Bolt (Seal Support)	Stainless Steel	3	Nr
4	60101090	Seal Support KM6	Stainless Steel	1	Nr
5	60101095	O.Ring (Seal Support)	NBR	1	Nr
6	60101080	Mechanical Seal	Silicon Tungsten Carbide (WC) + NBR + Stainless Steel	1	Nr
7	60101110	Hex Bolt ½ Inch X 1½ Inch 20TPI	Stainless Steel	4	Nr
8	60101077	Screw (Tail Cable)	Stainless Steel	2	Nr
9	601011XX	Cable Top Plate (Tail Cable)	Stainless Steel	1	Nr
10	601011XX	Gasket Rubber (Tail Cable)	NBR	1	Nr
11	601011XX	Cable Washer (Tail Cable)	Stainless Steel	1	Nr
12	60101005	Upper Support / Top Piece (Double Flange)	Cast Iron	1	Nr
13	60161245	Allen Bolt M12 X 45	Stainless Steel	4	Nr
14	60101156	Washer Bonded / Dowty Seal M12	NBR + Carbon Steel	4	Nr
15	60101068	Allen Bolt (Top Piece)	Stainless Steel	2	Nr
16	60101157	Washer Bonded / Dowty Seal M10	NBR + Stainless Steel	6	Nr
17	60101485	PT100 Sensor (Optional)		1	Nr
18	60161250	Allen Bolt M8 X 20	Stainless Steel	1	Nr
19	60161267	Washer Bonded / Dowty Seal M8	NBR/Stainless Steel	1	Nr
20	60101065	O. Ring 3500	NBR	3	Nr
21	60101058	Carbon Bush Small (Lower & Upper)	Carbon	2	Nr
22	60101055	Carbon Bush Large (Lower & Upper)	Carbon	2	Nr
23	60101087	Upper Thrust Bearing	Brass	1	Nr
24	60101142	Screw (Upper Thrust) CSK M4X10	Stainless Steel	3	Nr
25	60101010	Upper Bearing Housing	Cast Iron	1	Nr
26	601011XX	Motor Tail Cable (03 Core)	Copper + Rubber	13	Ft
27	601013XX	Stator Stack (Assembly)	Silicon Steel (M800-50A) + SS304	1	Set
28	60101202	Winding Protection Cover (Lower)	LDPE	1	Nr
29	601063XX	Rotor Shaft	Stainless Steel (SS430)	1	Nr
30	60101350	Rotor Lamination (Assembly)	Silicon Steel (M800-50A)	1	Set
31	60101145	Key for Rotor Shaft	Stainless Steel	1	Nr
32	60101013	Lower Bearing Housing	Cast Iron	1	Nr
33	60101212	Gasket	Tesnit	1	Nr
34	601010XX	Thrust Bearing	Stainless Steel + Carbon	1	Nr
35	60101018	Thrust Support	Cast Iron	1	Nr
36	60101030	Adjustment Bolt (Thrust Bearing)	Stainless Steel	1	Nr
37	60161010	Lock Washer Adj. Bolt	Mild Steel	1	Nr
38	60161252	Bolt Allen M6 x 20	Stainless Steel	2	Nr
39	60101071	Bolt Allen M10x170	Carbon Steel 12,9	4	Nr
40	60101045	Diaphragm Rubber	NBR	1	Nr
41	60101216	Diaphragm Support	Polycarbonate	1	Nr
42	60101050	End Cover of Diaphragm	Stainless Steel	1	Nr
43	60101052	Cover for Thrust Support	Stainless Steel	1	Nr
44	60101143	Allen Bolt (Lower Thrust Plate)	Stainless Steel	4	Nr



# KM8

## 8" Borehole Submersible Electric Water Cooled Rewindable Motors

### Models Range

Standard: Double Flange

### Power Range

From: 40 HP (30 kW)

To: 175 HP (130 kW)

### Voltage Range

230 Volts @ 60 Hertz

460 Volts @ 60 Hertz

### Speed Range

2 Poles, 3600 RPM

### Construction Material

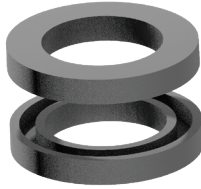
Standard: Cast Iron with NSF Certified Epoxy

Optional: Complete 316L Stainless Steel





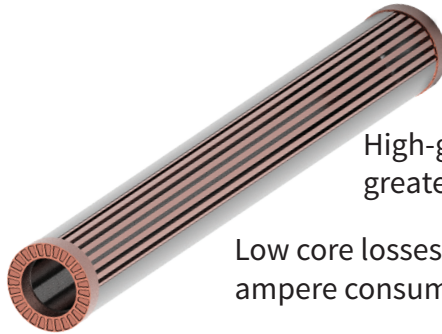
Sand Guard resists sand, clay and mud against entering the seal support, while remaining intact at 3500 RPM.



Lip / Oil Seal resist fine sand against entering to Mechanical Seal.



Silicon Tungsten Carbide Mechanical Seal for Optimum Protection in Sandy Wells.



Stator made of high-grade silicon steel sheet.

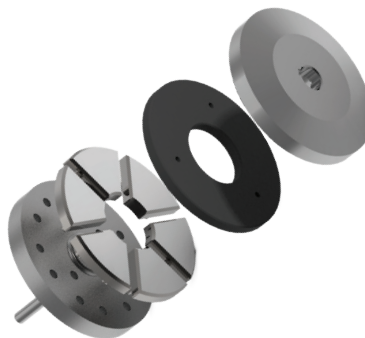
High-grade silicon steel sheet offers greater efficiency and reliability.

Low core losses, higher efficiency, lower ampere consumption and lower heat generation.

Fully machined and grinded throughout the length.

Integral / Single Piece Design ensure better dimensional accuracy.

High-grade Stainless Steel Shaft hardened to 40 HRC.



Robust Kingsbury type thrust bearing made of high grade material.

Water lubricated, low friction and highly durable

Customized thrust ratings available on client's demand.

## Salient Features

KM8 8” water-filled submersible electric motors have asynchronous three-phase rewindable stator and squirrel cage rotor.

The new series of 8” submersible electric motors KM8 has been designed and produced according to the market’s requirements. In design and material selection all efforts have been made to offer an energy-efficient product to our customers which stands for reliability, excellent quality, long and trouble-free life.

- Wet Stator Design
- High Grade Material
- High Thermal Capacity
- High Sand Resistance
- High Efficiency
- Long Service Life
- Easy Maintenance
- Rewindable
- Eco Friendly
- NSF and ISO Certified
- Industrial, Domestic, Commercial, Agriculture and Irrigation Purpose

## Technical Specification

<b>IP68</b>	degree of protection
<b>Y*</b>	insulation class
<b>50 °C</b>	ambient temperature
<b>+6% / -10%</b>	voltage tolerance
<b>Vertical/Horizontal</b>	mounting position
<b>16 cm/sec</b>	min. cooling flow rate speed
<b>150 m</b>	max. immersion depth
<b>14</b>	max. starts per hour
<b>Wooden crate</b>	packing

\* Higher insulation wire class are available on request.

## Specifications

**Winding:**  
Electrolytic Solid Copper wire wrapped in BOPET+BOPP Insulation rated for temperatures over 100 °C that allows more copper in the current slots. This technology allows the motor to run much cooler and achieve higher than normal horsepower ratings in standard frame sizes.

**Stator:**  
All motors include an increased Stator stack length and combined M800 low-loss electrical magnetic sheet for a cooler running motor.

**Rotor:**  
Increased stack length with M800 low-loss electrical magnetic sheet assembled and designed with the newest technology and high-grade copper bars.

**Spline Shaft:**  
AISI 430 stainless steel induction hardened and ground to operate in severe conditions. Dimensions according to international 8” NEMA standards.

**Shaft Bearing/Bush:**  
Dual Water lubricated guide bearings made of high-grade carbon, are fixed in upper and lower brackets for optimal operation in sandy wells and pump vibration control.

**Thrust Bearings:**  
All Klassen submersible motors have Kingsbury type thrust bearing. The thrust assembly consists of a high-quality carbon disc with hardened stainless steel shoes to handle necessary pump thrust loads. Available with an axial load capacity of 18000 Lbs.

**Seal Configuration:**  
Klassen offers a triple seal configuration that consists of two outer back to back lip seals in NBR with an inner Silicon Tungsten Carbide Seal for optimum protection in sandy wells.

**Pressure Equalizing System:**  
Pressure compensation is managed by using a suitably sized NBR bellow to allow for expansion of the internal water as it heats up - or - from external pressure due to the depth of submergence.

**Brackets:**  
High resistance cast iron upper and lower bearing housing with epoxy coating.

**Filler Fluid:**  
Water mixed with non-toxic antifreeze provide cooling and lubrication, also protect and prevent inside parts from corrosion.

**Connection:**  
Connected through rubber sheathed cable. Available in Delta & WYE (Star) configuration.

*Note: All specifications are subject to change without any prior notice.*

# 8” Borehole Submersible Motors

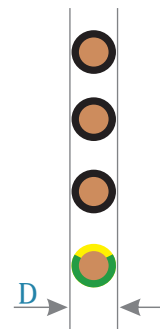
# KM8

## Electrical Data @ 60 Hz - Three Phase - 230/460 Volt - 2 Pole

	Motor Type	Motor Size		Thrust Load (lbs)	RPM	Full Load Current (Amps)	S.F Load Current (Amps)	Starting Current (Amps)	Cos Φ at Full Load	Efficiency at Full Load (%)	Service Factor
		HP	kW								
<b>230V</b>	KM8 0400T	40	30	18000	3480	107.3	121.5	649.0	0.83	84.2	1.15
	KM8 0500T	50	37	18000	3485	130.6	147.7	801.3	0.84	85.3	1.15
	KM8 0600T	60	45	18000	3475	157.7	179.5	1056.9	0.83	85.6	1.15
<b>3 Phase - 460V - 60 Hz</b>	KM8 0400T	40	30	18000	3490	54.3	61.4	328.2	0.82	84.4	1.15
	KM8 0500T	50	37	18000	3495	66.1	74.7	405.6	0.83	85.5	1.15
	KM8 0600T	60	45	18000	3485	78.8	89.8	528.4	0.83	85.8	1.15
	KM8 0750T	75	56	18000	3485	95.6	109.1	572.9	0.85	86.6	1.15
	KM8 1000T	100	75	18000	3480	130.1	148.0	777.0	0.83	86.4	1.15
	KM8 1250T	125	93	18000	3480	159.5	182.0	955.5	0.85	86.2	1.15
	KM8 1500T	150	112	18000	3480	192.6	219.6	1152.8	0.84	86.7	1.15
	KM8 1750T	175	130	18000	3500	230.7	261.1	1370.8	0.82	86.7	1.15

## Size & Dimensions Motor Leads @ 60 Hz - 230/460 Volt

Sr. No.	Volt	Motor Size		Lead Size Nos. x Cross Section (mm <sup>2</sup> )	Dimension Dia (inch)	Cable Length (Feet)	Qty (Nr.)	
		HP	kW					
<b>DOL</b>	1	460V	40 ~ 50	30 ~ 37	1 x 10 / 16	0.24 / 0.41	16	3
	2	230V	40	30	1 x 16	0.41	16	3
		460V	60 ~ 75	45 ~ 56				
	3	230V	50 ~ 60	37 ~ 45	1 x 25	0.46	16	3
460V		100 ~ 125	75 ~ 93					
4	460V	150 ~ 175	112 ~ 130	1 x 35	0.50	16	3	
<b>SD</b>	5	460V	40 ~ 125	30 ~ 93	1 x 16	0.41	16	6
	6	460V	150 ~ 175	110 ~ 130	1 x 25	0.46	16	6



\* Additional core 1 x 10 mm<sup>2</sup> 16 feet for earthing.

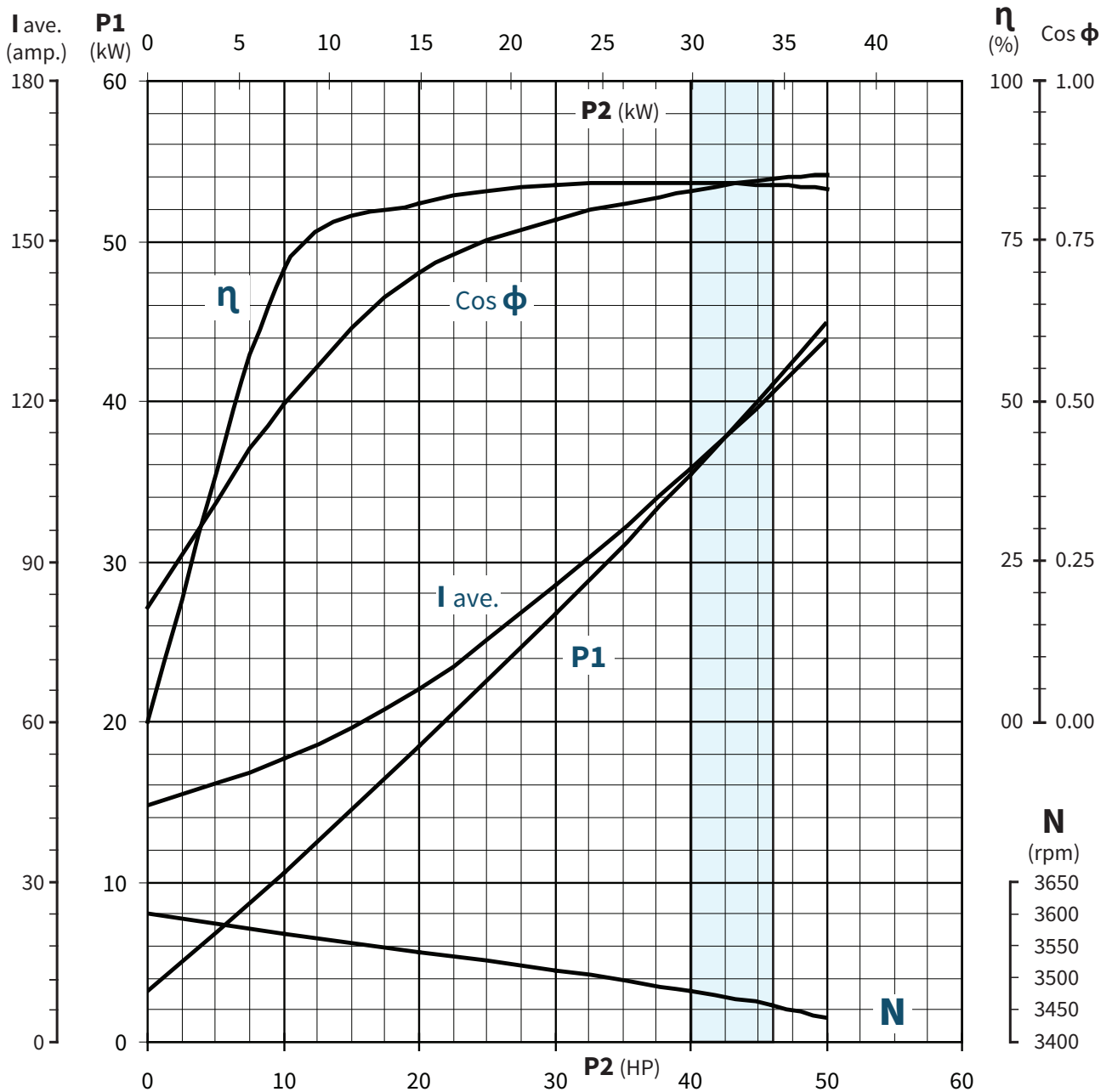




## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>40</b>	Motor Size (HP)	HP (P2)	0.00	10.00	20.00	30.00	<b>40.00</b>	46.00	50.00
<b>30</b>	Motor Size (kW)	Current (Amp.)	44.40	53.30	66.00	85.50	<b>107.32</b>	121.49	131.59
<b>230</b>	Volt	Efficiency %	0.00	70.63	80.80	83.81	<b>84.20</b>	83.71	83.26
<b>60</b>	Frequency (Hz)	Cos $\Phi$	0.178	0.497	0.702	0.784	<b>0.829</b>	0.847	0.855
<b>2</b>	Poles (Nrs)	RPM	3599.7	3568.8	3539.2	3511.6	<b>3480.4</b>	3458.6	3437.7
		Torque (Nm)	0.00	19.96	40.26	60.86	<b>81.87</b>	94.75	103.61
		P1 (kW)	3.15	10.56	18.47	26.70	<b>35.44</b>	40.99	44.80

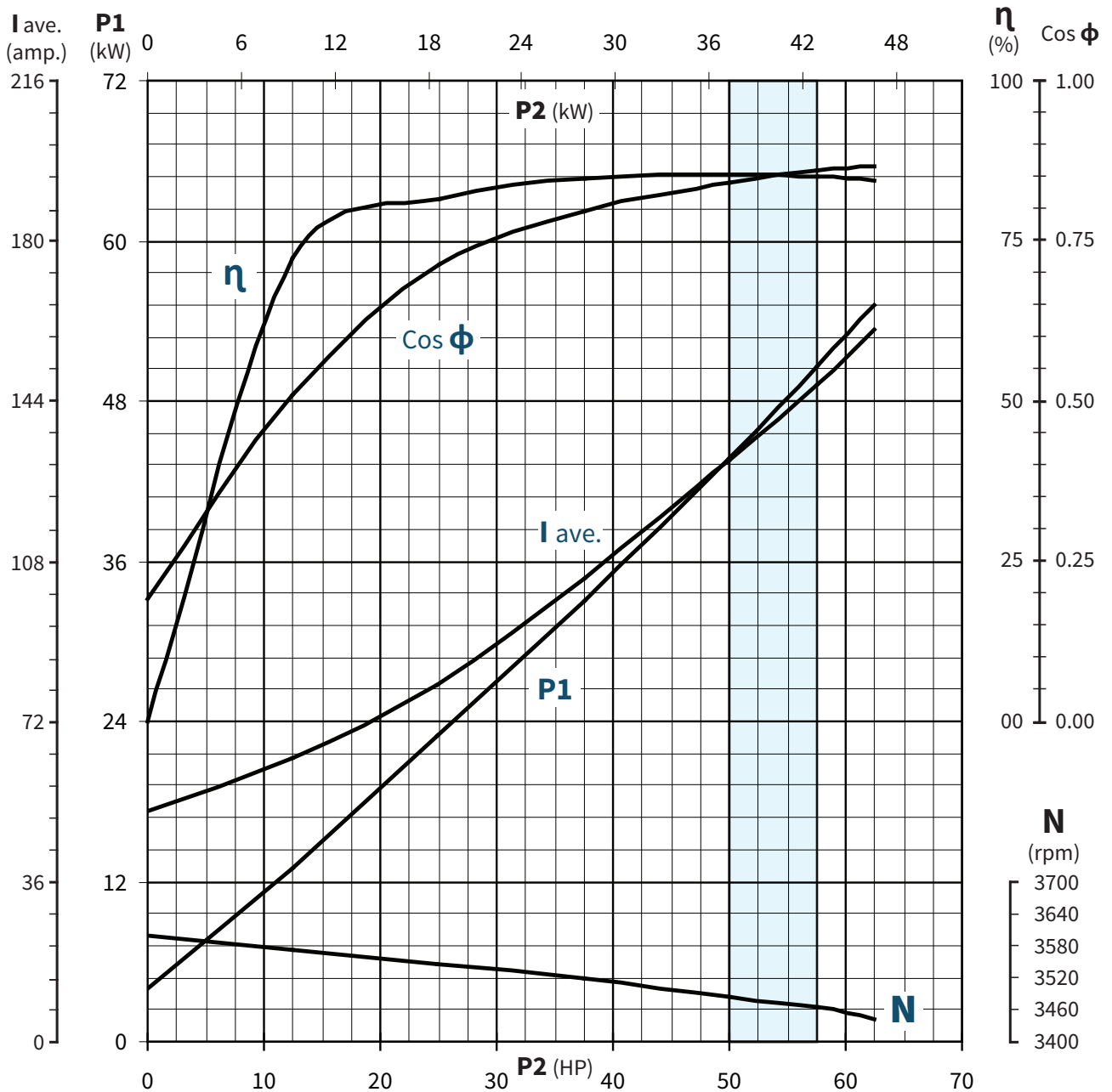
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>50</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	12.50	25.00	37.50	<b>50.00</b>	57.50	62.50
<b>37</b>	Motor Size (kW)	<b>Current (Amp.)</b>	51.87	63.66	80.40	104.03	<b>130.55</b>	147.65	159.94
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	72.18	81.52	84.81	<b>85.28</b>	84.90	84.44
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.190	0.509	0.714	0.796	<b>0.841</b>	0.859	0.867
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.8	3571.1	3544.2	3516.6	<b>3485.4</b>	3463.6	3442.7
		<b>Torque (Nm)</b>	0.00	24.94	50.25	75.97	<b>102.19</b>	118.26	129.33
		<b>P1 (kW)</b>	3.93	12.92	22.88	32.99	<b>43.74</b>	50.52	55.22

Motor Testing Tolerances According to NEMA Standard and IEC 60034-1

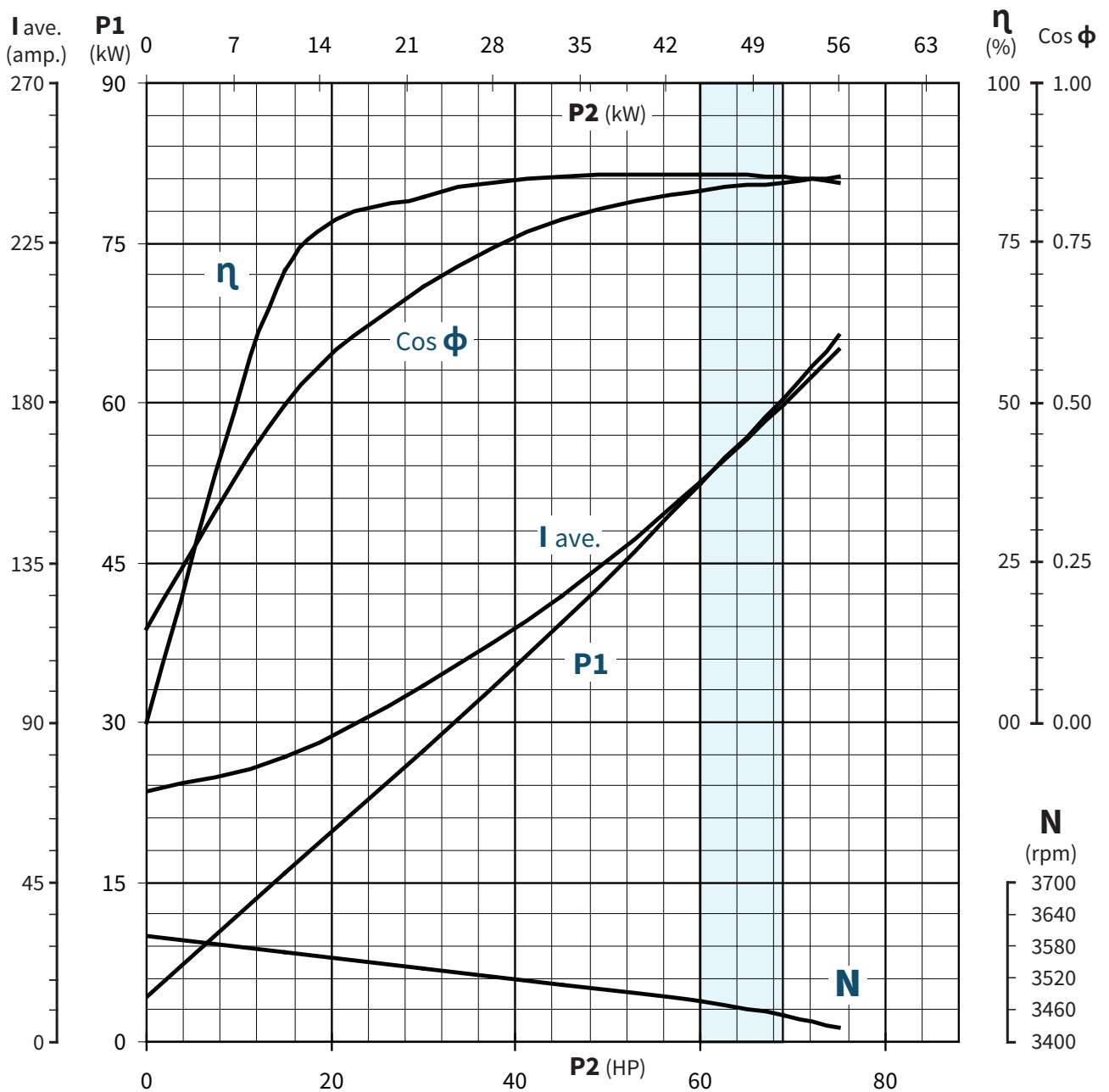




## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>60</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	15.00	30.00	45.00	<b>60.00</b>	69.00	75.00
<b>45</b>	Motor Size (kW)	<b>Current (Amp.)</b>	70.55	80.00	100.26	125.57	<b>157.68</b>	179.52	195.12
<b>230</b>	Volt	<b>Efficiency %</b>	0.00	70.70	82.10	85.36	<b>85.63</b>	85.26	84.40
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.147	0.496	0.682	0.786	<b>0.832</b>	0.844	0.853
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3598.9	3567.7	3535.9	3507.5	<b>3475.4</b>	3451.3	3428.6
		<b>Torque (Nm)</b>	0.00	29.95	60.44	91.40	<b>122.99</b>	142.42	155.83
		<b>P1 (kW)</b>	4.14	15.83	27.26	39.33	<b>52.27</b>	60.37	66.29

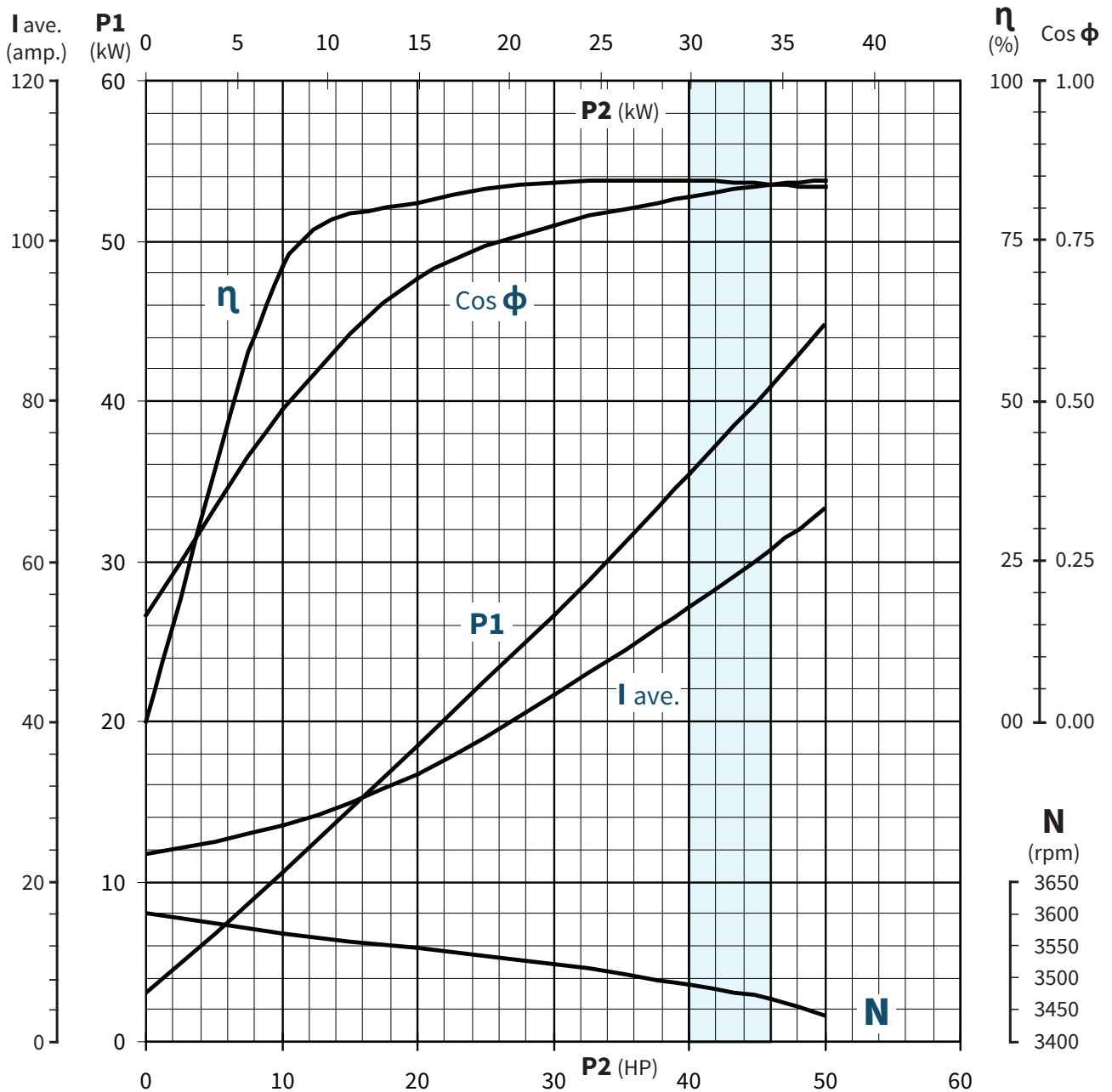
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>40</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	10.00	20.00	30.00	<b>40.00</b>	46.00	50.00
<b>30</b>	Motor Size (kW)	<b>Current (Amp.)</b>	23.44	27.13	33.45	43.27	<b>54.27</b>	61.44	66.52
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	70.98	81.00	83.98	<b>84.37</b>	83.86	83.41
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.167	0.486	0.691	0.773	<b>0.818</b>	0.836	0.844
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.9	3569.4	3546.5	3521.1	<b>3490.2</b>	3467.3	3440.1
		<b>Torque (Nm)</b>	0.00	19.96	40.17	60.69	<b>81.64</b>	94.51	103.54
		<b>P1 (kW)</b>	3.12	10.51	18.42	26.65	<b>35.37</b>	40.92	44.72

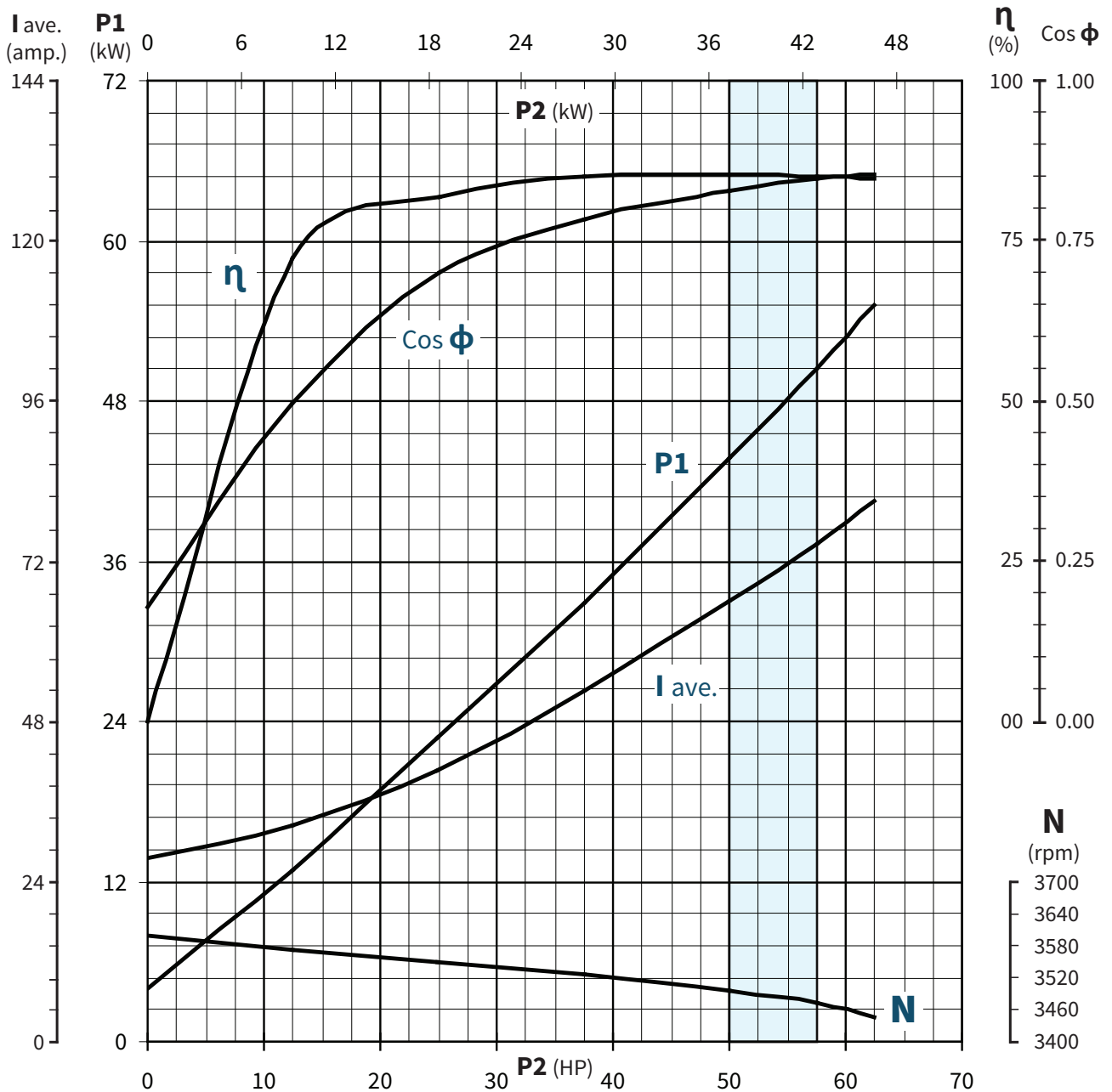
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>50</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	12.50	25.00	37.50	<b>50.00</b>	57.50	62.50
<b>37</b>	Motor Size (kW)	<b>Current (Amp.)</b>	27.56	32.51	40.79	52.70	<b>66.09</b>	74.74	80.96
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	72.40	81.73	84.98	<b>85.45</b>	85.05	84.56
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.178	0.497	0.702	0.784	<b>0.829</b>	0.847	0.855
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.8	3572.6	3550.9	3525.3	<b>3495.4</b>	3472.5	3445.3
		<b>Torque (Nm)</b>	0.00	24.92	50.15	75.78	<b>101.90</b>	117.96	129.23
		<b>P1 (kW)</b>	3.91	12.88	22.82	32.92	<b>43.65</b>	50.43	55.14

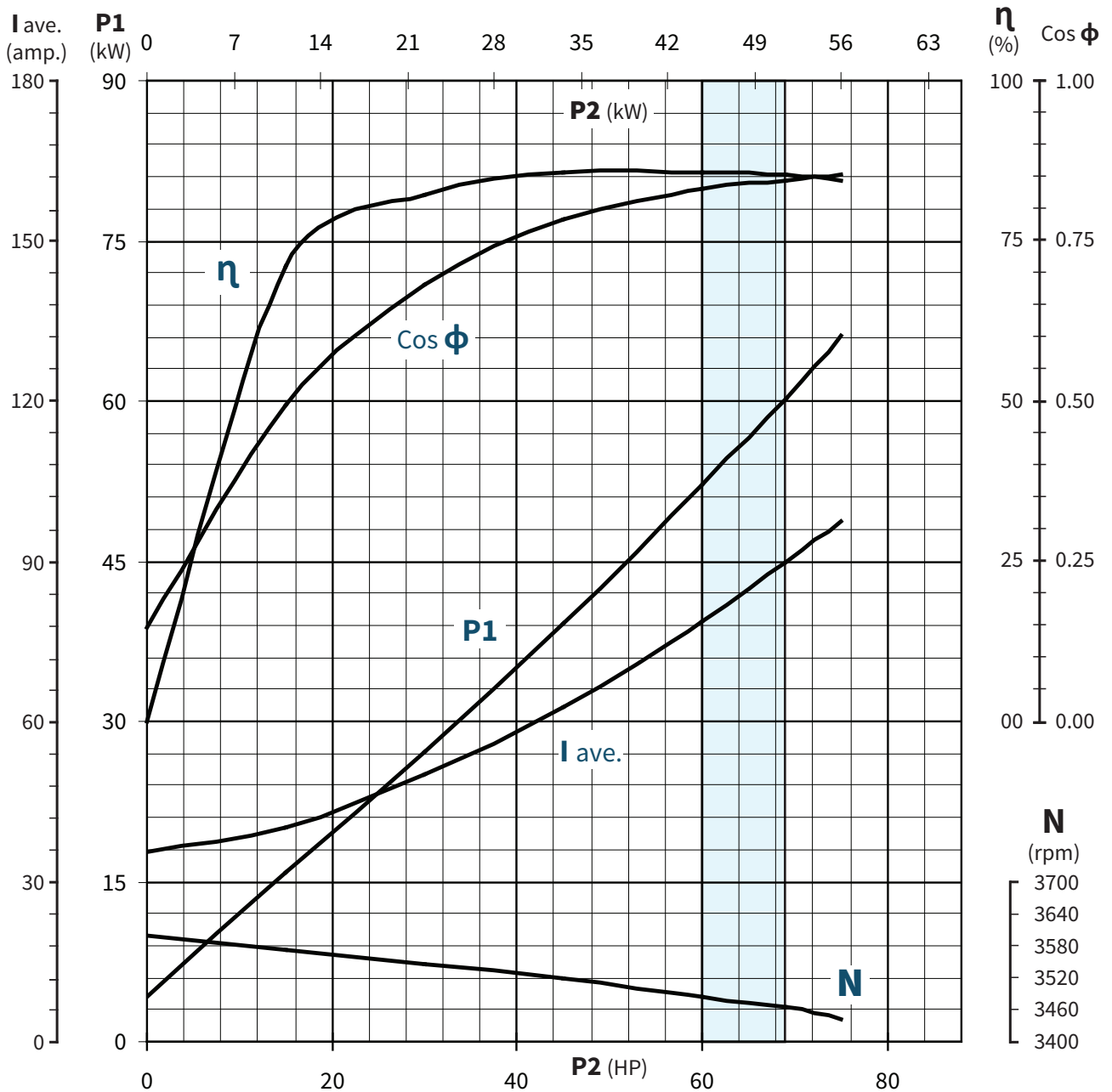
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>60</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	15.00	30.00	45.00	<b>60.00</b>	69.00	75.00
<b>45</b>	Motor Size (kW)	<b>Current (Amp.)</b>	35.40	40.00	50.10	62.76	<b>78.81</b>	89.75	97.56
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	70.91	82.31	85.53	<b>85.78</b>	85.39	84.50
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.146	0.495	0.681	0.785	<b>0.831</b>	0.843	0.852
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.8	3572.6	3545.9	3518.5	<b>3485.4</b>	3463.2	3441.5
		<b>Torque (Nm)</b>	0.00	29.91	60.27	91.11	<b>122.63</b>	141.93	155.25
		<b>P1 (kW)</b>	4.12	15.78	27.19	39.25	<b>52.18</b>	60.28	66.21

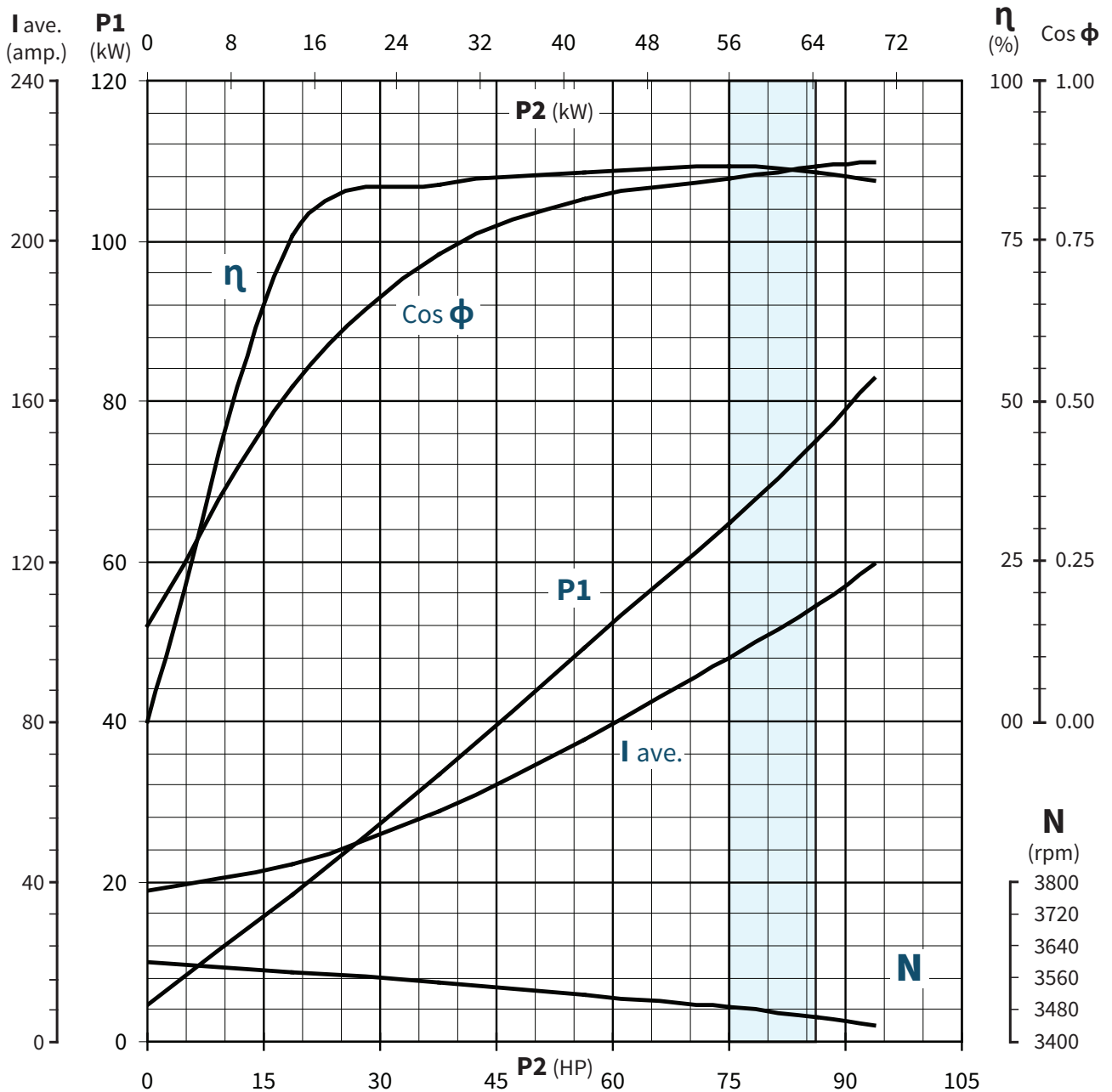
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

75	Motor Size (HP)	Load	0%	25%	50%	75%	100%	115%	125%
		HP (P2)	0.00	18.75	37.50	56.25	<b>75.00</b>	86.25	93.75
56	Motor Size (kW)	Current (Amp.)	37.64	44.32	57.54	75.63	<b>95.65</b>	109.13	119.13
460	Volt	Efficiency %	0.00	75.85	83.81	85.55	<b>86.58</b>	85.55	84.42
60	Frequency (Hz)	Cos $\Phi$	0.151	0.522	0.728	0.814	<b>0.848</b>	0.865	0.873
2	Poles (Nrs)	RPM	3599.8	3572.6	3545.9	3518.5	<b>3485.4</b>	3463.2	3441.5
		Torque (Nm)	0.00	37.39	75.34	113.89	<b>153.29</b>	177.42	194.06
		P1 (kW)	4.53	18.44	33.38	49.05	<b>64.62</b>	75.21	82.84

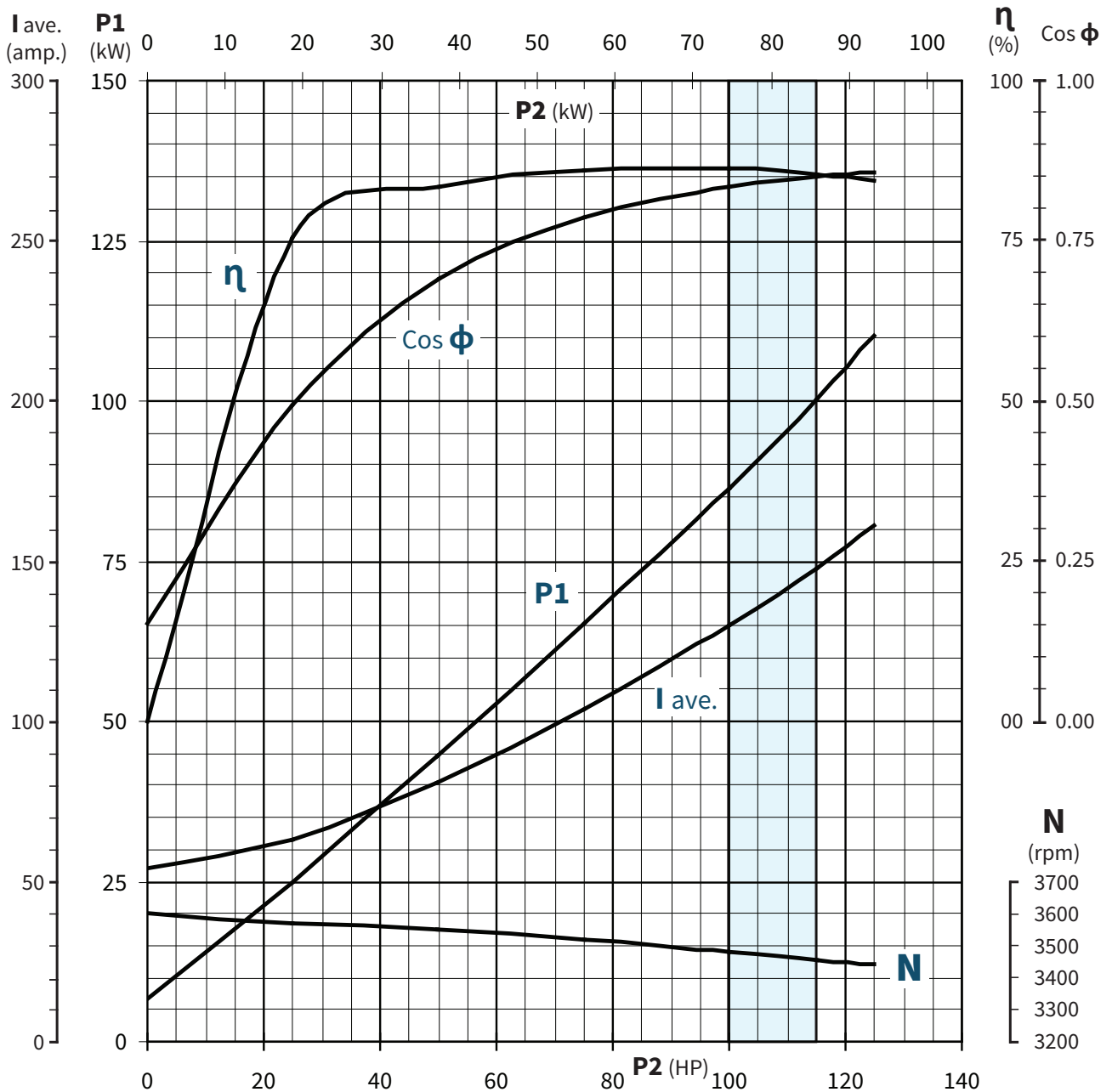
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>100</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	25.00	50.00	75.00	<b>100.00</b>	115.00	125.00
<b>75</b>	Motor Size (kW)	<b>Current (Amp.)</b>	53.87	62.91	81.14	104.08	<b>130.07</b>	147.99	161.46
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	75.44	83.48	85.84	<b>86.42</b>	85.50	84.50
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.153	0.493	0.691	0.786	<b>0.833</b>	0.851	0.858
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.7	3572.3	3547.6	3519.1	<b>3480.1</b>	3457.9	3439.1
		<b>Torque (Nm)</b>	0.00	49.85	100.40	151.82	<b>204.70</b>	236.92	258.93
		<b>P1 (kW)</b>	6.57	24.72	44.68	65.18	<b>86.32</b>	100.34	110.35

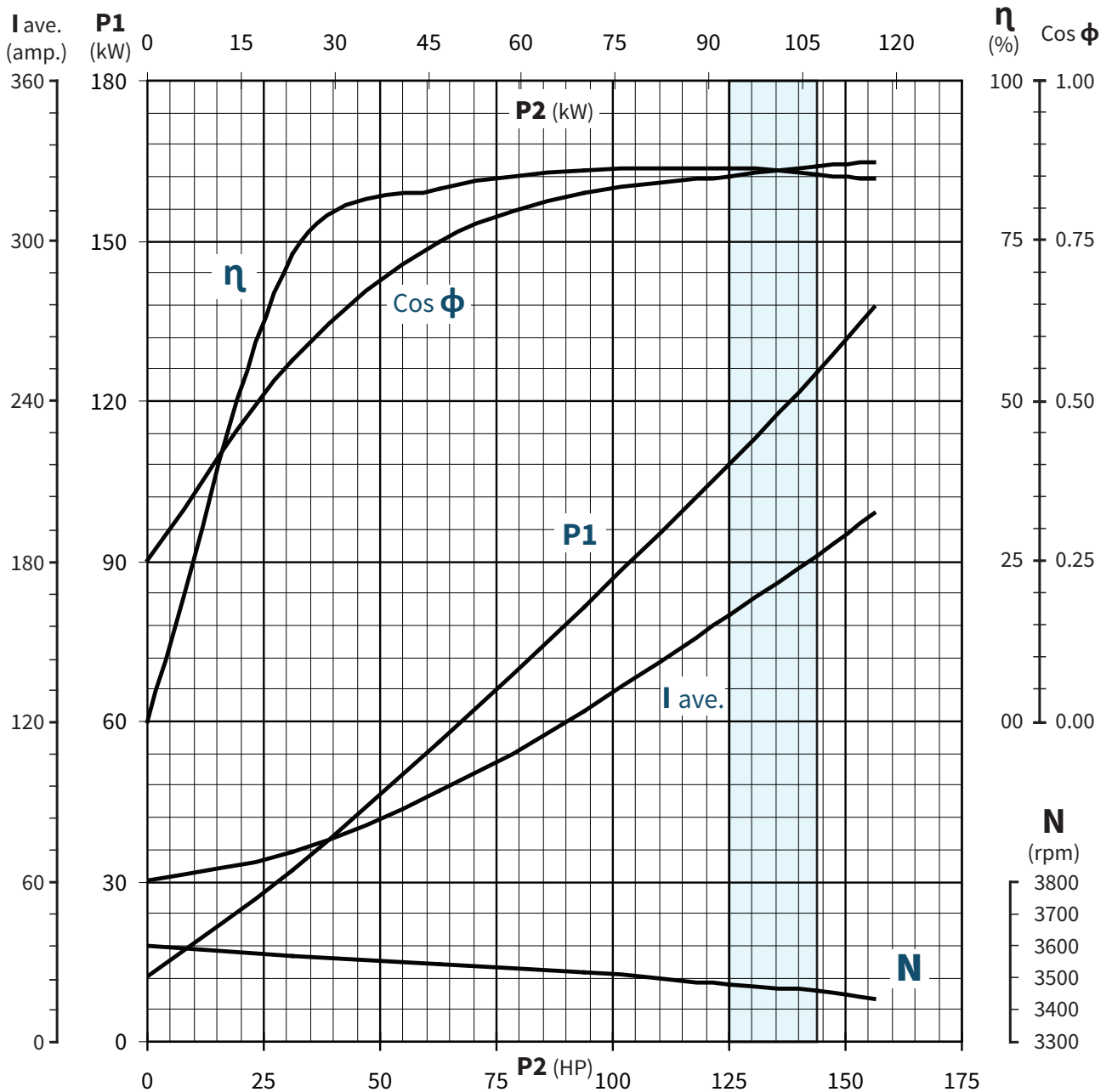
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>125</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	31.25	62.50	93.75	<b>125.00</b>	143.75	156.25
<b>93</b>	Motor Size (kW)	<b>Current (Amp.)</b>	60.20	70.88	94.12	124.11	<b>159.47</b>	182.00	197.73
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	73.03	82.99	85.84	<b>86.25</b>	85.50	84.77
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.253	0.565	0.749	0.824	<b>0.851</b>	0.865	0.873
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.9	3570.5	3542.8	3514.5	<b>3480.3</b>	3458.1	3432.3
		<b>Torque (Nm)</b>	0.00	62.35	125.67	190.03	<b>255.86</b>	296.13	324.30
		<b>P1 (kW)</b>	12.14	31.92	56.18	81.48	<b>108.12</b>	125.43	137.50

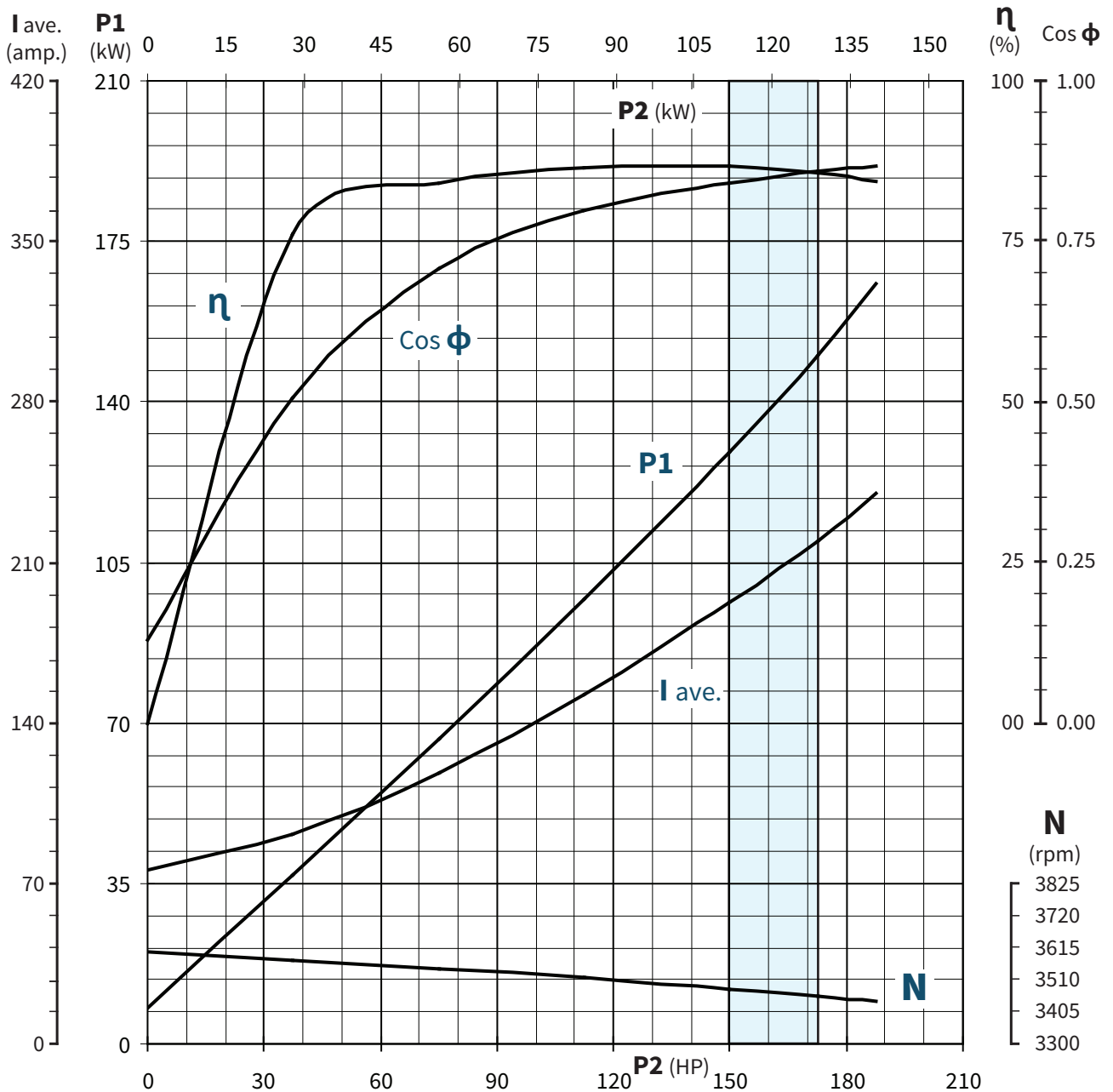
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>150</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	37.50	75.00	112.50	<b>150.00</b>	172.50	187.50
<b>112</b>	Motor Size (kW)	<b>Current (Amp.)</b>	75.47	91.30	118.25	152.35	<b>192.59</b>	219.58	240.17
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	76.12	83.98	86.54	<b>86.72</b>	85.63	84.43
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.129	0.505	0.707	0.799	<b>0.841</b>	0.859	0.866
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.4	3572.0	3547.3	3518.8	<b>3479.8</b>	3457.6	3438.8
		<b>Torque (Nm)</b>	0.00	74.79	150.62	227.75	<b>307.08</b>	355.41	388.42
		<b>P1 (kW)</b>	7.76	36.75	66.62	96.98	<b>129.04</b>	150.28	165.67

Motor Testing Tolerances According to NEMA Standard and IEC 60034-1

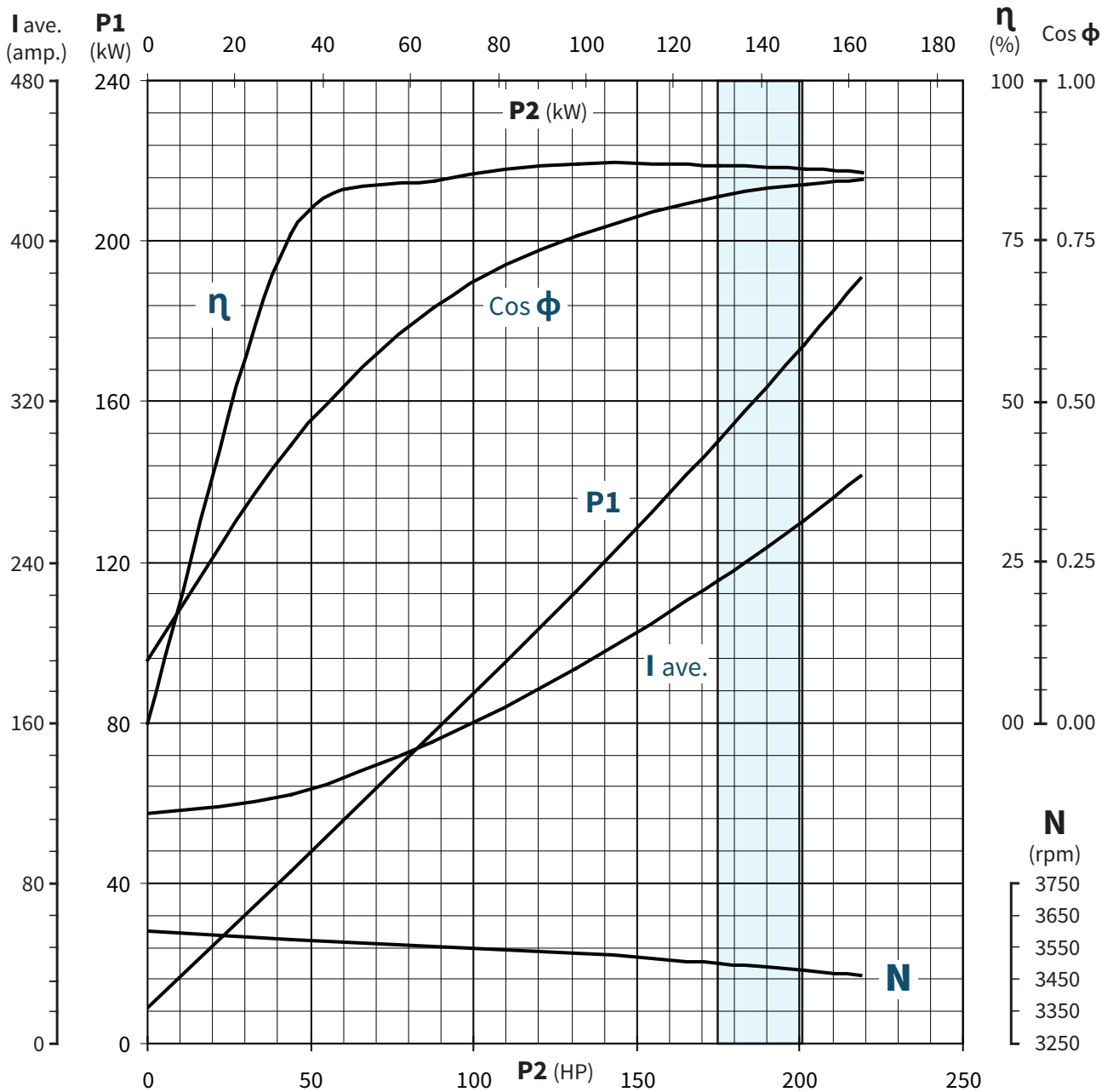




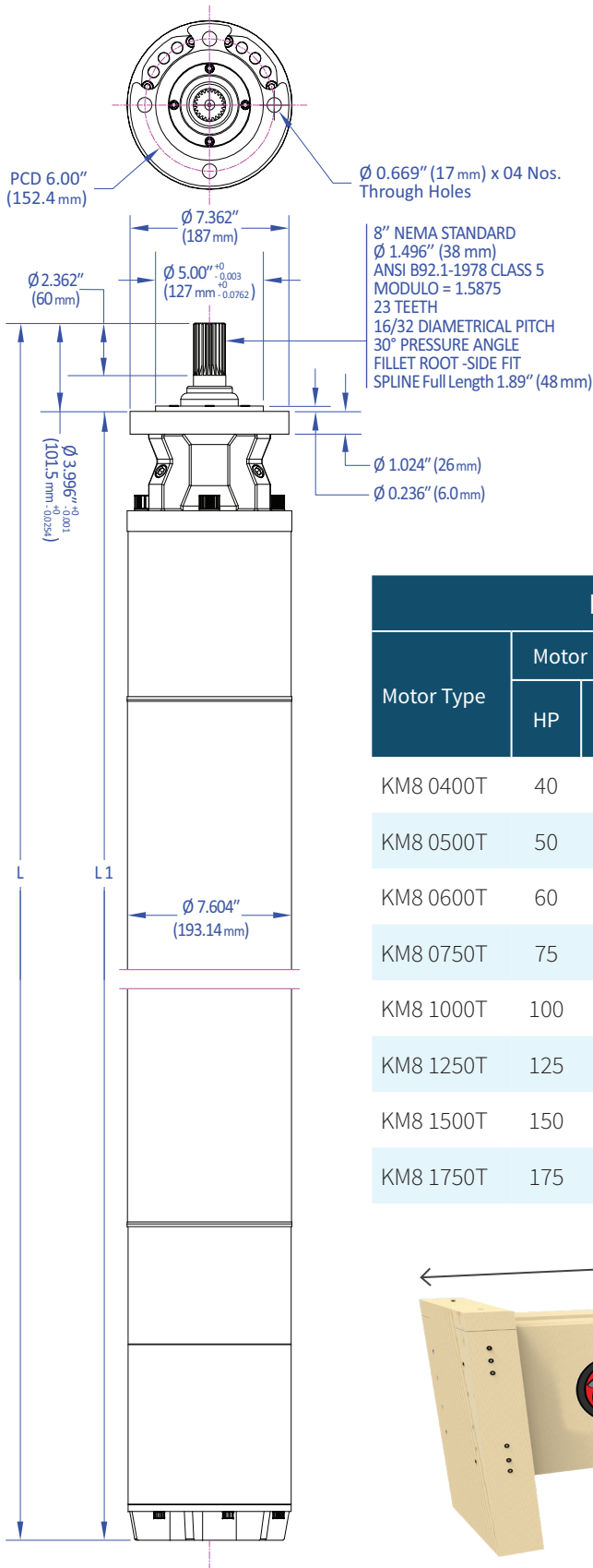
### Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>175</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	43.75	87.50	131.25	<b>175.00</b>	201.25	218.75
<b>130</b>	Motor Size (kW)	<b>Current (Amp.)</b>	114.47	124.36	150.45	186.65	<b>230.71</b>	261.11	282.68
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	76.22	84.28	86.86	<b>86.72</b>	86.12	85.56
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.097	0.432	0.646	0.758	<b>0.819</b>	0.838	0.847
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3600.0	3575.9	3554.4	3528.9	<b>3499.9</b>	3480.7	3464.9
		<b>Torque (Nm)</b>	0.00	87.16	175.37	264.95	<b>356.20</b>	411.89	449.75
		<b>P1 (kW)</b>	8.85	42.82	77.45	112.72	<b>150.54</b>	174.33	190.72

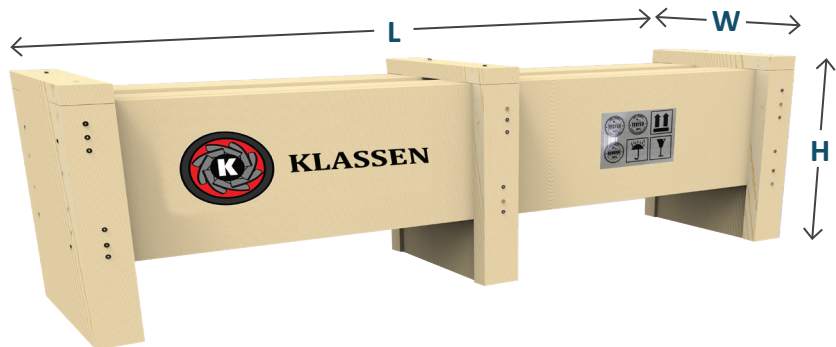
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



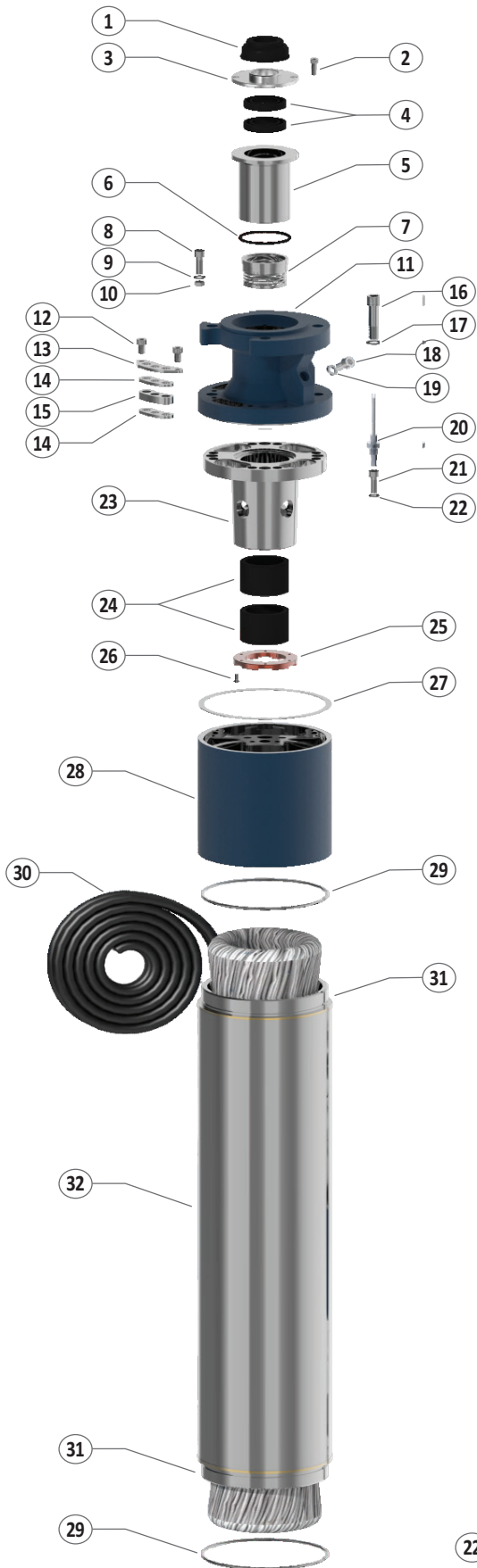
## Motor Technical Data



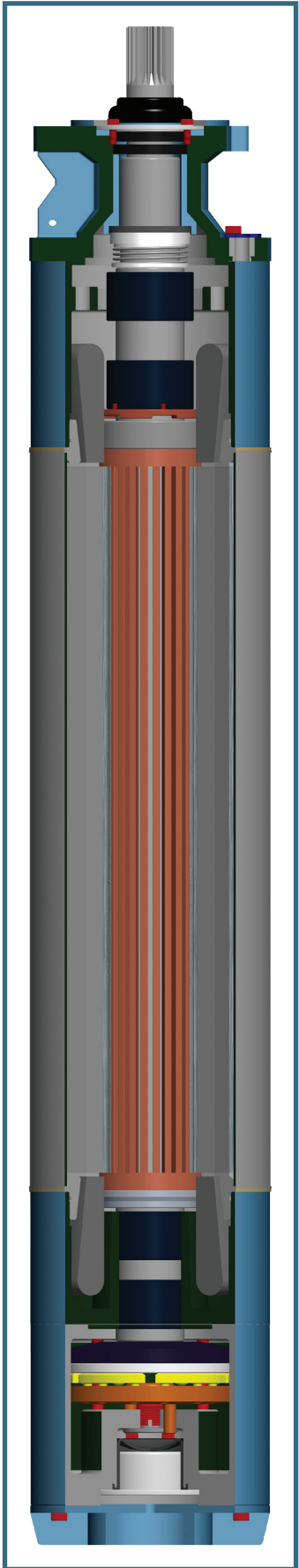
Motor Dimensions and Weights							
Motor Type	Motor Size		L Motor Length (inch)	L1 Motor Length (inch)	Packing Dimension W x H x L (inch)	Weight (Lbs)	
	HP	kW				Without Packing	With Packing
KM8 0400T	40	30	49.4	45.4	12 x 15.8 x 55.4	383	413
KM8 0500T	50	37	52.6	48.6	12 x 15.8 x 58.5	418	448
KM8 0600T	60	45	55.3	51.3	12 x 15.8 x 61.3	448	494
KM8 0750T	75	56	59.3	55.3	12 x 15.8 x 65.2	498	534
KM8 1000T	100	75	64.4	60.4	12 x 15.8 x 70.4	555	597
KM8 1250T	125	93	72.2	68.2	12 x 15.8 x 78.2	636	682
KM8 1500T	150	112	76.2	72.2	12 x 15.8 x 82.2	684	734
KM8 1750T	175	130	76.2	72.2	12 x 15.8 x 82.2	687	738



### Exploded View



### Cross-Sectional View



## Motor Parts List with Material & Quantity

Pos.	Item Code	Part Name	Material	Qty	Unit
1	60161050	Sand Guard	Rubber	1	Nr
2	60161252	Bolt Allen M6 x 20	Stainless Steel	14	Nr
3	60161085	Mechanical Seal Cover	Stainless Steel	1	Nr
4	60161127	Oil Seal 38x60x10	NBR	2	Nr
5	60161125	Bush Seal Support	Cast Iron	1	Nr
6	60161220	O-Ring 65x2,5	NBR	1	Nr
7	60161275	Mechanical Seal Complete	Silicon Tungsten Carbide (WC) + NBR + Stainless Steel	1	Nr
8	60161254	Bolt Allen M8 x 35	Stainless Steel	1	Nr
9	60161263	Spring Washer M8	Stainless Steel	1	Nr
10	60161262	Nut Hex M8	Stainless Steel	1	Nr
11	60161065	Top Piece / Upper Support Double Flange	Cast Iron	1	Nr
12	60161253	Bolt Allen M8 x 25	Stainless Steel	2	Nr
13	60161150	Cable Top Cover Plate	Carbon Steel	2	Nr
14	60161092	Washer nylon	Nylon	2	Nr
15	60161095	Gasket Rubber	NBR	1	Nr
16	60161255	Bolt Allen M16 x 65	Stainless Steel	4	Nr
17	60161272	Washer Bonded / Dowty Seal M16	NBR / Stainless Steel	4	Nr
18	60101068	Bolt Allen M10 x 16	Stainless Steel	2	Nr
19	60101157	Washer Bonded / Dowty Seal M10	NBR / Stainless Steel	8	Nr
20	60101485	PT 100 Sensor	Stainless Steel	1	Nr
21	60161250	Bolt Allen M8x20	Stainless Steel	14	Nr
22	60161267	Washer Bonded / Dowty Seal M8	NBR/Stainless Steel	1	Nr
23	60161080	Upper Bearing Housing	Cast Iron	1	Nr
24	60161020	Carbon Bush	Carbon	4	Nr
25	60161105	Upper Thrust Bearing	Brass	1	Nr
26	60101142	Screw CSK M4x10	Stainless Steel	6	Nr
27	60161042	Gasket Top Piece	Tesnit	1	Nr
28	60161315	Upper Threaded Socket	Cast Iron	1	Nr
29	60161215	O-Ring 165x2,5	NBR	2	Nr
30A	601611XX	Cable Tail (1x10mm2/16mm2/25mm2/35mm2)	PVC + Copper	48	Ft
30B	60101197	Cable for Earth 1x10 mm2	PVC + Copper	16	Ft
31	60161594	Flange (200-140-46)	Stainless Steel	2	Nr
32	601616XX	Stator Stack (Assembly)	Silicon Steel (50C800) + SS304	1	Set
33	601063XX	Rotor Shaft	Stainless Steel (SS430)	1	Nr
34	60161660	Rotor Lamination (Including Shaft + Copper Bars + End Ring)	Silicon Steel (50C800) + Stainless Steel + Copper	1	Set
35	60101145	Key for End Shaft	Stainless Steel	1	Nr
36	60161320	Lower Bearing Housing	Cast Iron	1	Nr
37	60161280K	Thrust Bearing	Stainless Steel / Carbon	1	Set
38	60161040	Gasket Thrust Support	Tesnit	1	Nr
39	60161070	Thrust Support	Cast Iron	1	Nr
40	60161000	Adjustment Bolt	Stainless Steel	1	Nr
41	60161010	Lock Washer Adj. Bolt	MS	1	Nr
42	60161260	Bolt Allen M10x190	Carbon Steel 12,9	6	Nr
43	60101045	Diaphragm Rubber	NBR	1	Nr
44	60161130	Diaphragm Support	Cast Iron	1	Nr
45	60161037	Bottom Plate	Cast Iron	1	Nr



# KM10

## 10" Borehole Submersible Electric Water Cooled Rewindable Motors

### Models Range

Standard: Double Flange

### Power Range

From: 75 HP (56 kW)

To: 270 HP (200 kW)

### Voltage Range

230 Volts @ 60 Hertz

460 Volts @ 60 Hertz

### Speed Range

2 Poles, 3600 RPM

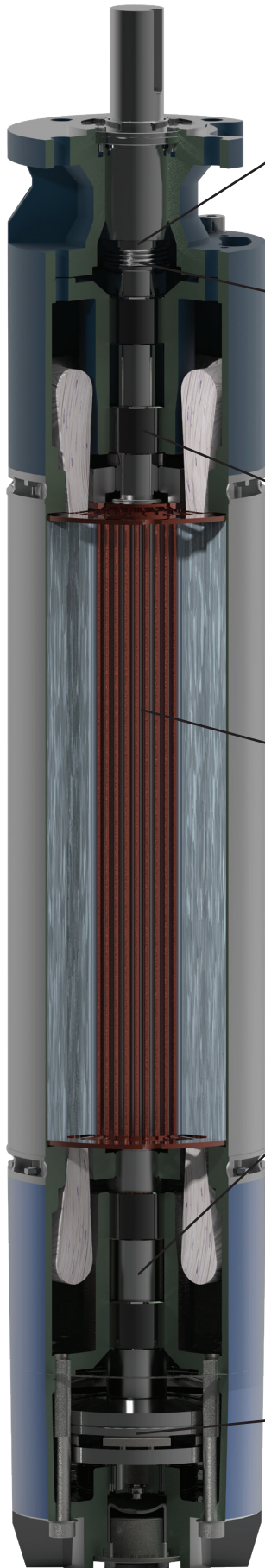
### Construction Material

Standard: Cast Iron with NSF Certified Epoxy

Optional: Complete 316L Stainless Steel







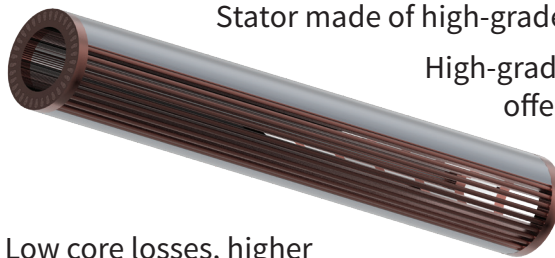
Lip / Oil Seal resist fine sand against entering to Mechanical Seal.



Silicon Tungsten Carbide Mechanical Seal for Optimum Protection in Sandy Wells.



The upper portion with double carbon bearing gives greater stability and vibration-free operation of the motor.



Stator made of high-grade silicon steel sheet.

High-grade silicon steel sheet offers greater efficiency and reliability.

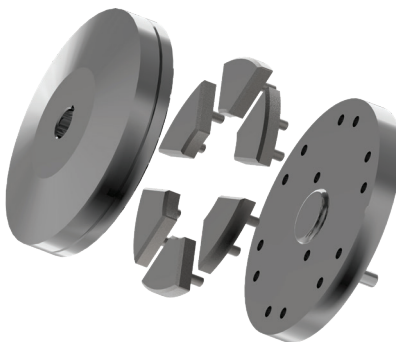
Low core losses, higher efficiency, lower ampere consumption and lower heat generation.



High-grade Stainless Steel Shaft hardened to 40 HRC.

Fully machined and grinded throughout the length.

Integral / Single Piece Design ensure better dimensional accuracy.



Robust Kingsbury type thrust bearing made of high grade material.

Water lubricated, low friction and highly durable

Customized thrust ratings available on client's demand.



## Salient Features

KM10 10” water-filled submersible electric motors have asynchronous three-phase rewindable stator and squirrel cage rotor.

The new series of 10” submersible electric motors KM10 has been designed and produced according to the market’s requirements. In design and material selection all efforts have been made to offer an energy-efficient product to our customers which stands for reliability, excellent quality, long and trouble-free life.

- Wet Stator Design
- High Grade Material
- High Thermal Capacity
- High Sand Resistance
- High Efficiency
- Long Service Lif
- Easy Maintenance
- Rewindable
- Eco Friendly
- NSF and ISO Certified
- Industrial, Domestic, Comercial, Agriculture and Irrigation Purpose

## Technical Specification

<b>IP68</b>	degree of protection
<b>Y*</b>	insulation class
<b>50 °C</b>	ambient temperature
<b>+6% / -10%</b>	voltage tolerance
<b>Vertical/Horizontal</b>	mounting position
<b>16 cm/sec</b>	min. cooling flow rate speed
<b>150 m</b>	max. immersion depth
<b>10</b>	max. starts per hour
<b>Wooden crate</b>	packing

\* Higher insulation wire class are available on request.

## Specifications

**Winding:**  
Electrolytic Solid Copper wire wrapped in BOPET+BOPP Insulation rated for temperatures over 100 °C that allows more copper in the current slots. This technology allows the motor to run much cooler and achieve higher than normal horsepower ratings in standard frame sizes.

**Stator:**  
All motors include an increased Stator stack length and combined M800 low-loss electrical magnetic sheet for a cooler running motor.

**Rotor:**  
Increased stack length with M800 low-loss electrical magnetic sheet assembled and designed with the newest technology and high-grade copper bars.

**Spline Shaft:**  
AISI 430 stainless steel induction hardened and ground to operate in severe conditions. Dimensions according to international 8” NEMA standards.

**Shaft Bearing/Bush:**  
Dual Water lubricated guide bearings made of high-grade carbon, are fixed in upper and lower brackets for optimal operation in sandy wells and pump vibration control.

**Thrust Bearings:**  
All Klassen submersible motors have Kingsbury type thrust bearing. The thrust assembly consists of a high-quality carbon disc with hardened stainless steel shoes to handle necessary pump thrust loads. Available with an axial load capacity of 18000 Lbs.

**Seal Configuration:**  
Klassen offers a triple seal configuration that consists of two outer back to back lip seals in NBR with an inner Silicon Tungsten Carbide Seal for optimum protection in sandy wells.

**Pressure Equalizing System:**  
Pressure compensation is managed by using a suitably sized NBR bellow to allow for expansion of the internal water as it heats up - or - from external pressure due to the depth of submergence.

**Brackets:**  
High resistance cast iron upper and lower bearing housing with epoxy coating.

**Filler Fluid:**  
Water mixed with non-toxic antifreeze provide cooling and lubrication, also protect and prevent inside parts from corrosion.

**Connection:**  
Connected through rubber sheathed cable. Available in Delta & WYE (Star) configuration.

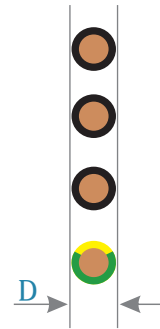
*Note: All specifications are subject to change without any prior notice.*

## Electrical Data @ 60 Hz - Three Phase - 460 Volt - 2 Pole

Motor Type	Motor Size		Thrust Load (lbs)	RPM	Full Load Current (Amps)	S.F Load Current (Amps)	Starting Current (Amps)	Cos Φ at Full Load	Efficiency at Full Load (%)	Service Factor	
	HP	kW									
3 Phase - 460V - 60 Hz	KM10 0750T	75	56	18000	3490	99.2	113.2	509.4	0.83	85.7	1.15
	KM10 1000T	100	75	18000	3500	131.4	149.9	689.4	0.83	85.9	1.15
	KM10 1250T	125	93	18000	3495	163.1	186.3	894.1	0.83	86.2	1.15
	KM10 1500T	150	112	18000	3500	195.1	222.9	1038.7	0.83	86.4	1.15
	KM10 1750T	175	130	18000	3500	227.5	257.9	1232.3	0.83	86.9	1.15
	KM10 2000T	200	150	18000	3500	257.9	292.9	1433.1	0.83	87.1	1.15
	KM10 2500T	250	186	18000	3495	321.1	367.2	1911.4	0.84	86.6	1.15
	KM10 2700T	270	200	18000	3490	344.6	394.4	2070.4	0.85	86.7	1.15

## Size & Dimensions Motor Leads @ 60 Hz - 460 Volt

Sr. No.	Volt	Motor Size		Lead Size Nos. x Cross Section (mm <sup>2</sup> )	Dimension Dia (inch)	Cable Length (Feet)	Qty (Nr.)	
		HP	kW					
DOL	1	460V	75	56	1 x 16	0.41	16	3
	2	460V	100	75	1 x 25	0.46	16	3
	3	460V	125 ~ 150	93 ~ 112	1 x 35	0.50	16	3
	4	460V	175 ~ 270	130 ~ 200	1 x 70	0.68	16	3
SD	5	460V	75 ~ 100	56 ~ 75	1 x 10 / 16	0.24 / 0.41	16	6
	6	460V	125	93	1 x 16	0.41	16	6
	7	460V	150 ~ 200	112 ~ 150	1 x 25	0.46	16	6
	8	460V	250 ~ 270	186 ~ 200	1 x 35	0.50	16	6



\* Additional core 1 x 10 mm<sup>2</sup> 16 feet for earthing.

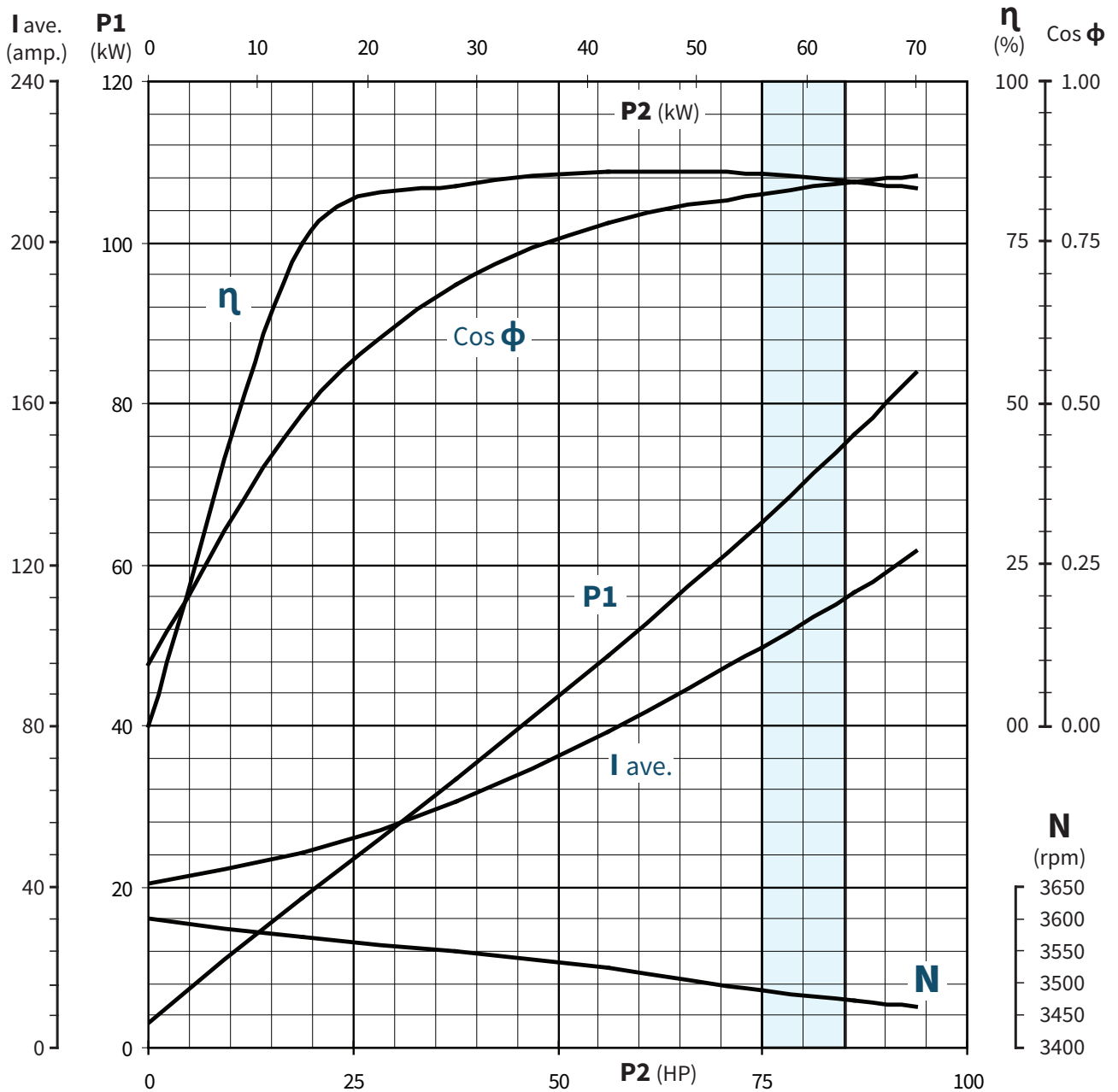




## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>75</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	18.75	37.50	56.25	<b>75.00</b>	86.25	93.75
<b>56</b>	Motor Size (kW)	<b>Current (Amp.)</b>	40.71	48.44	61.02	78.37	<b>99.18</b>	113.20	123.36
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	75.00	83.86	86.05	<b>85.72</b>	84.53	83.44
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.094	0.483	0.686	0.781	<b>0.826</b>	0.844	0.853
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.9	3572.4	3548.2	3523.5	<b>3490.2</b>	3474.8	3462.7
		<b>Torque (Nm)</b>	0.00	37.39	75.29	113.73	<b>153.08</b>	176.82	192.87
		<b>P1 (kW)</b>	3.05	18.65	33.36	48.77	<b>65.27</b>	76.12	83.82

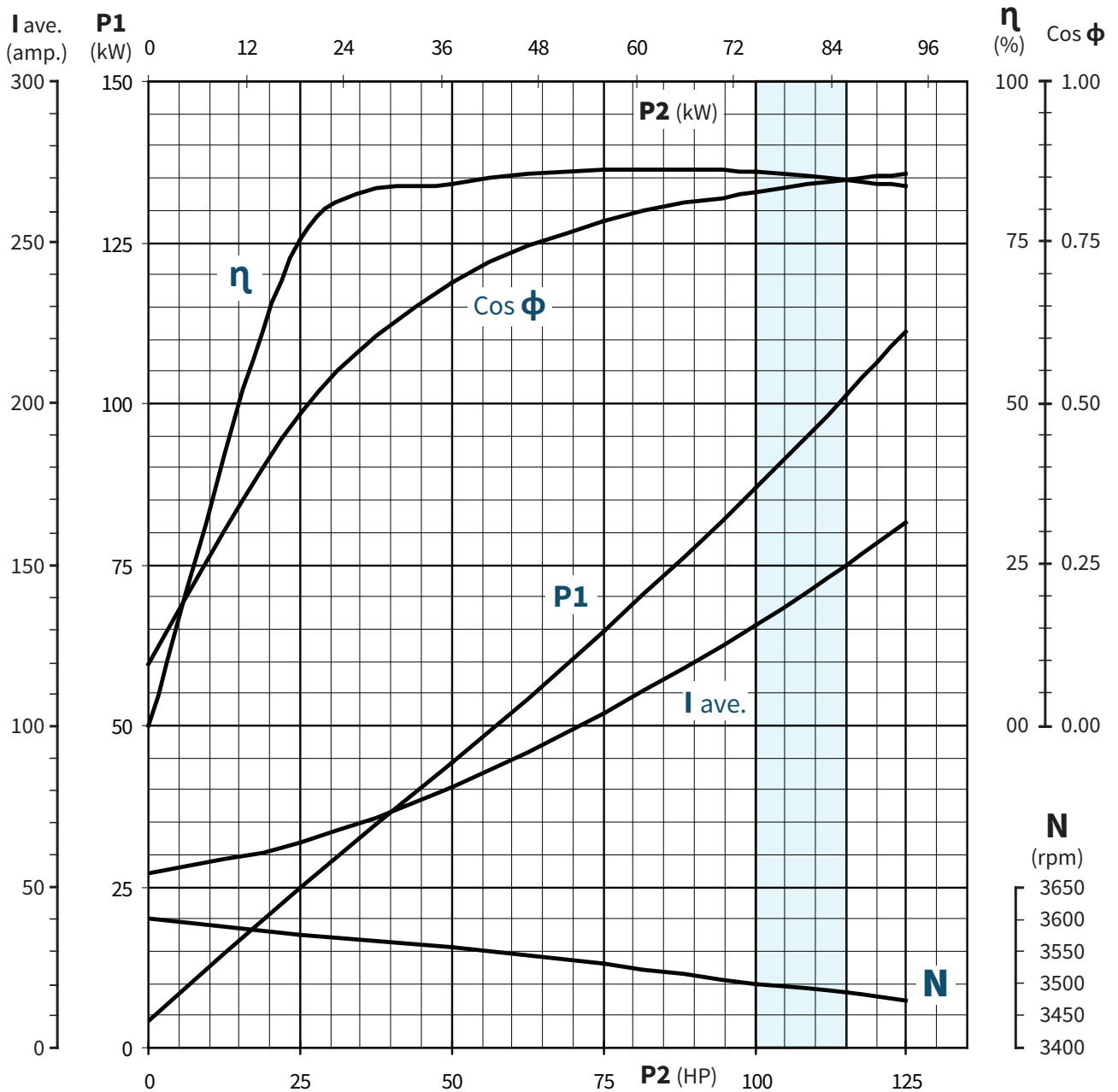
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>100</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	25.00	50.00	75.00	<b>100.00</b>	115.00	125.00
<b>75</b>	Motor Size (kW)	<b>Current (Amp.)</b>	53.84	63.95	80.94	103.78	<b>131.45</b>	149.88	163.13
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	75.44	84.05	86.42	<b>85.92</b>	84.82	83.84
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.096	0.485	0.688	0.783	<b>0.829</b>	0.847	0.856
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3600.0	3576.2	3555.7	3531.9	<b>3499.8</b>	3484.6	3472.5
		<b>Torque (Nm)</b>	0.00	49.80	100.17	151.27	<b>203.55</b>	235.10	256.43
		<b>P1 (kW)</b>	4.12	24.72	44.38	64.74	<b>86.82</b>	101.14	111.23

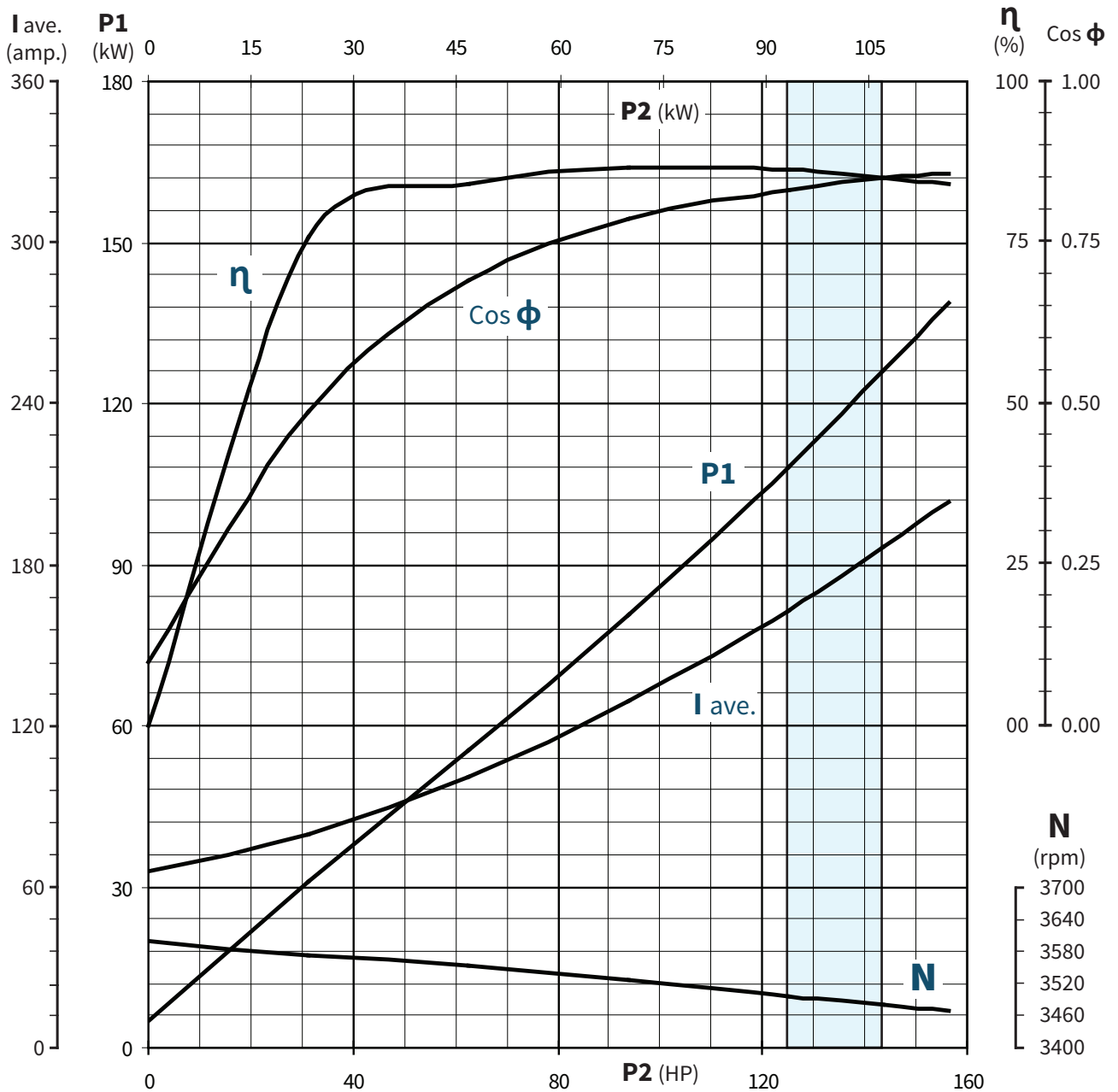
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

Motor Size (HP)	Motor Size (kW)	Volt	Frequency (Hz)	Poles (Nrs)	Load	0%	25%	50%	75%	100%	115%	125%
<b>125</b>					HP (P2)	0.00	31.25	62.50	93.75	<b>125.00</b>	143.75	156.25
<b>93</b>					Current (Amp.)	65.55	79.40	100.73	129.06	<b>163.11</b>	186.26	203.06
<b>460</b>					Efficiency %	0.00	75.64	84.05	86.53	<b>86.25</b>	85.12	83.99
					Cos $\Phi$	0.098	0.487	0.691	0.786	<b>0.832</b>	0.849	0.858
<b>60</b>					RPM	3599.8	3572.5	3551.4	3527.2	<b>3495.1</b>	3479.9	3468.5
<b>2</b>					Torque (Nm)	0.00	62.31	125.37	189.34	<b>254.78</b>	294.27	320.91
					P1 (kW)	5.12	30.82	55.47	80.82	<b>108.12</b>	125.99	138.78

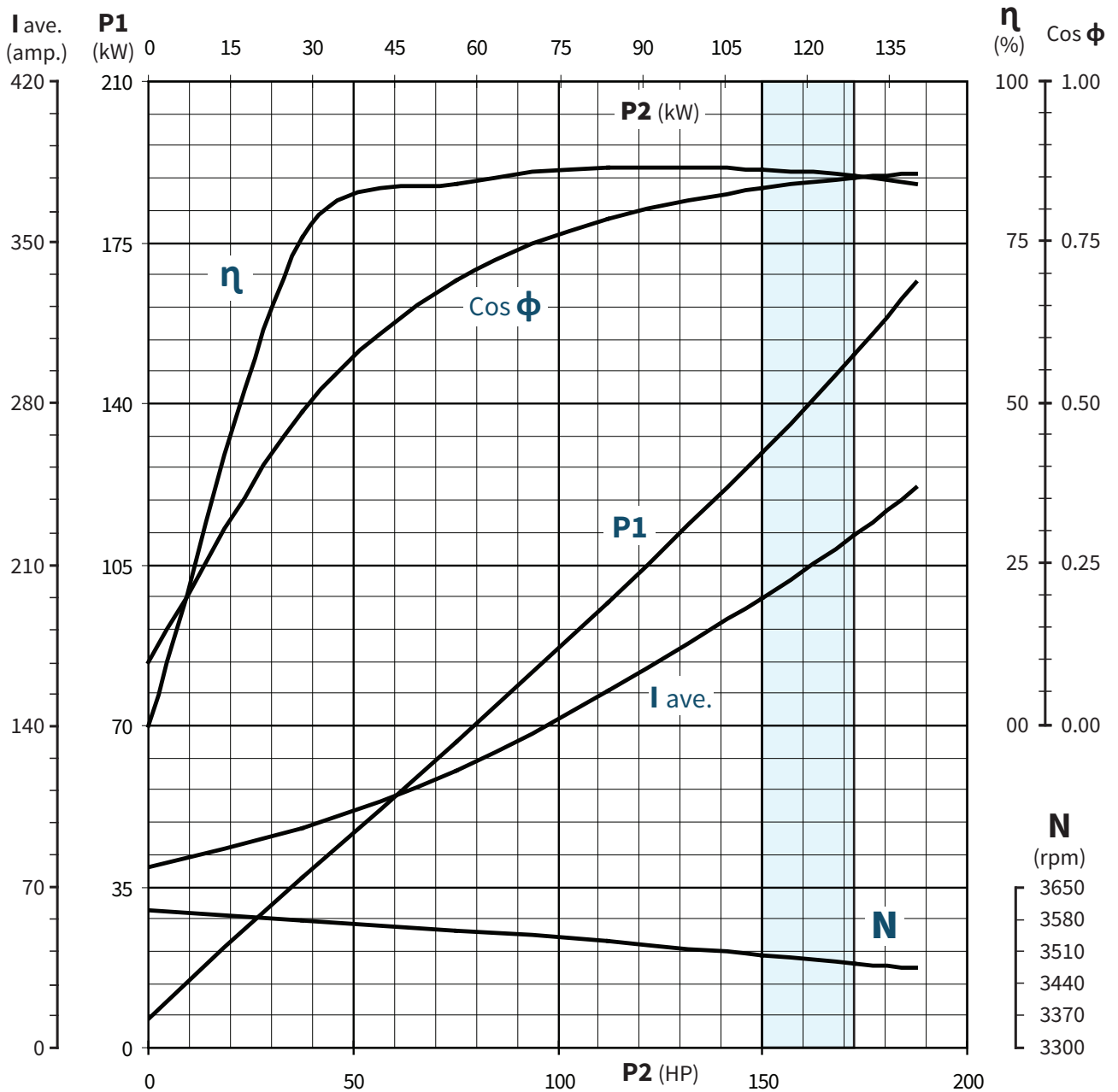
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>150</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	37.50	75.00	112.50	<b>150.00</b>	172.50	187.50
<b>110</b>	Motor Size (kW)	<b>Current (Amp.)</b>	78.32	95.11	120.75	154.80	<b>195.08</b>	222.91	243.38
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	75.77	84.14	86.57	<b>86.43</b>	85.35	84.19
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.099	0.487	0.691	0.786	<b>0.833</b>	0.849	0.857
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.8	3576.1	3555.2	3531.9	<b>3499.8</b>	3484.5	3472.1
		<b>Torque (Nm)</b>	0.00	74.70	150.28	226.91	<b>305.32</b>	352.66	384.70
		<b>P1 (kW)</b>	6.18	36.92	66.49	96.94	<b>129.47</b>	150.78	166.14

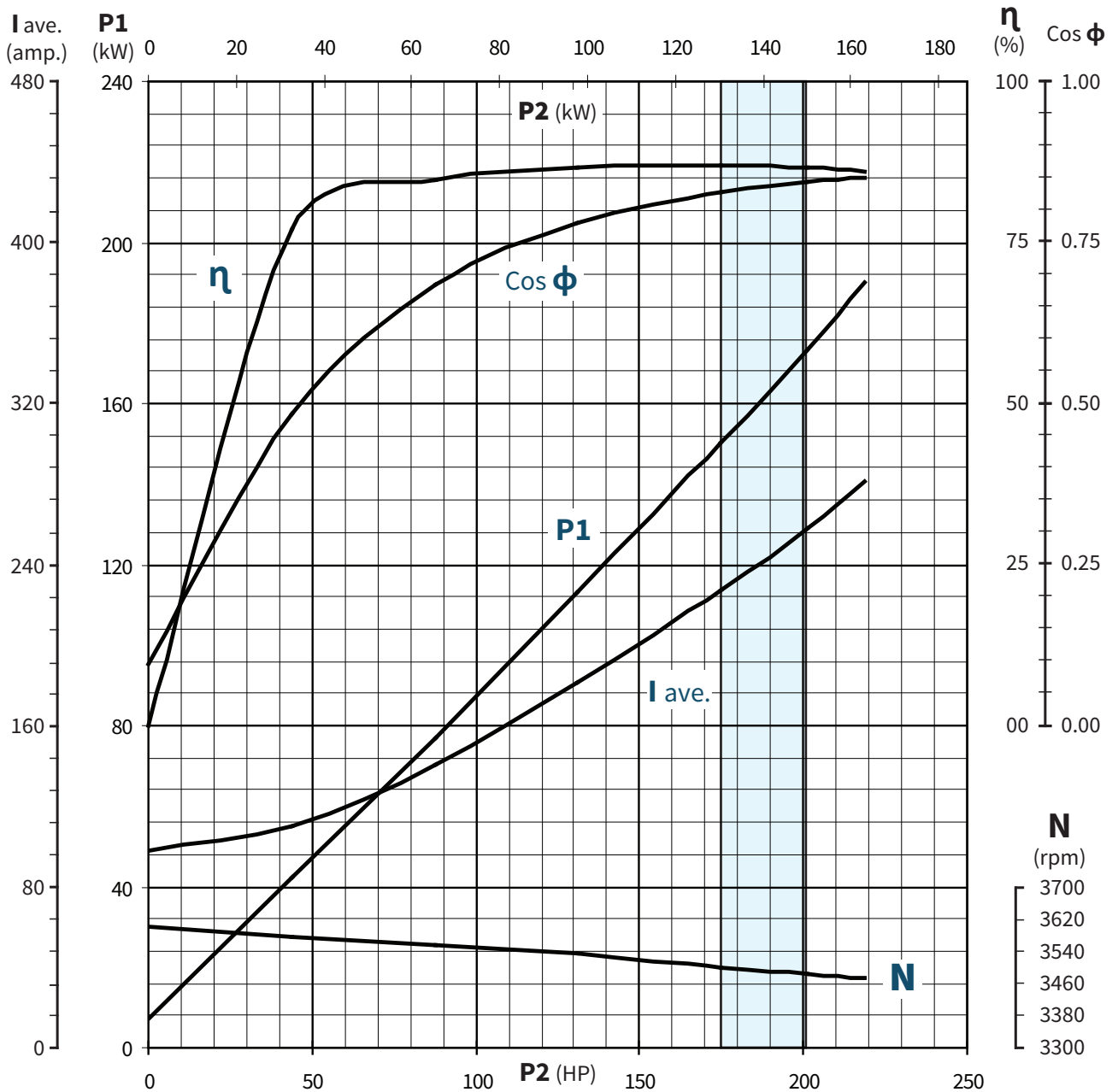
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>175</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	43.75	87.50	131.25	<b>175.00</b>	201.25	218.75
<b>130</b>	Motor Size (kW)	<b>Current (Amp.)</b>	97.46	109.93	141.11	181.57	<b>227.46</b>	257.90	280.80
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	77.12	84.62	86.66	<b>86.90</b>	86.57	85.83
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.095	0.483	0.686	0.781	<b>0.829</b>	0.844	0.850
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.7	3576.2	3555.5	3532.4	<b>3500.2</b>	3485.0	3472.3
		<b>Torque (Nm)</b>	0.00	87.15	175.31	264.69	<b>356.17</b>	411.38	448.79
		<b>P1 (kW)</b>	7.38	42.32	77.14	112.98	<b>150.23</b>	173.42	190.12

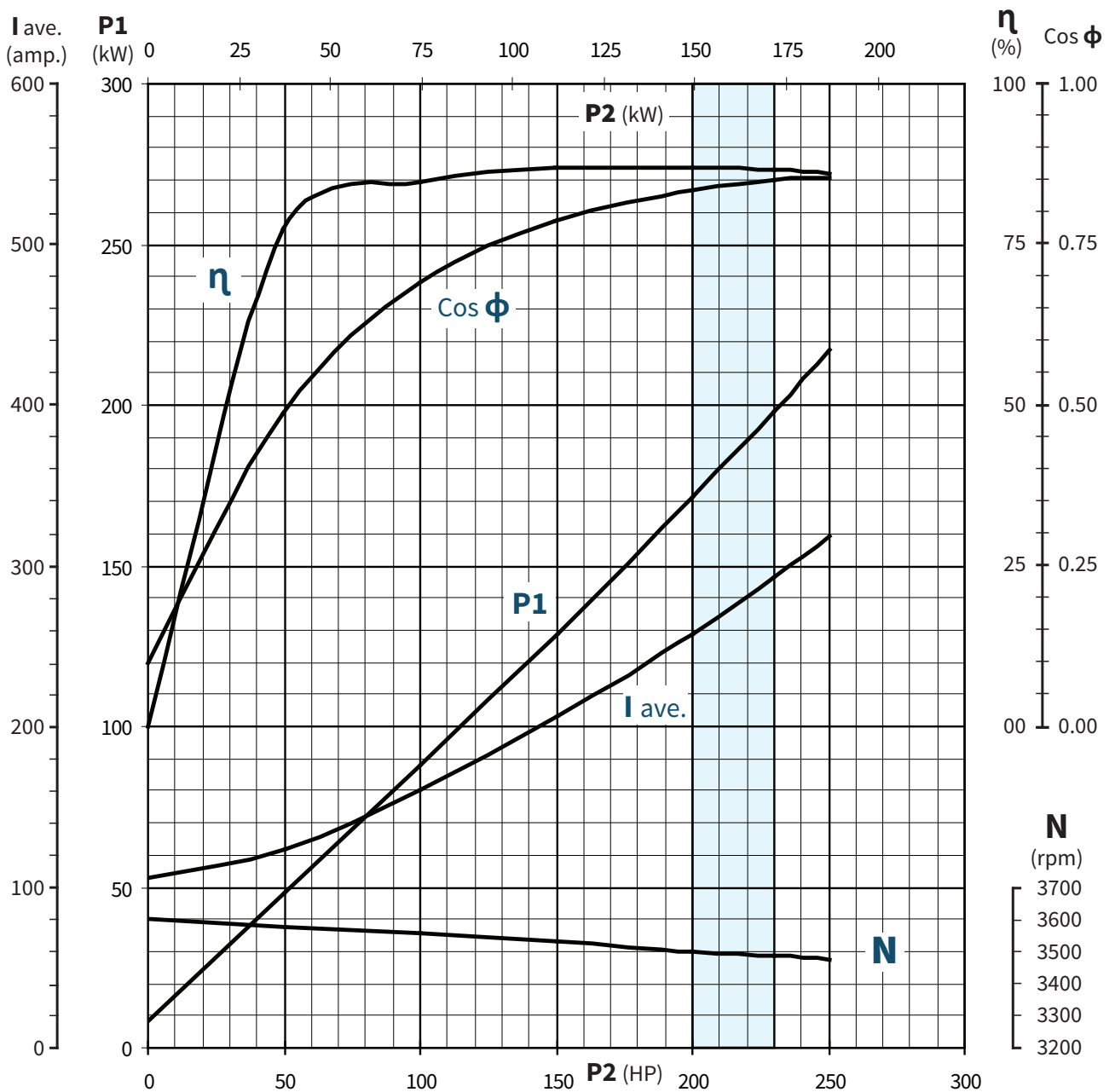
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>200</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	50.00	100.00	150.00	<b>200.00</b>	230.00	250.00
<b>150</b>	Motor Size (kW)	<b>Current (Amp.)</b>	105.64	123.94	159.90	205.90	<b>257.94</b>	292.93	318.92
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	77.37	84.72	86.78	<b>87.05</b>	86.60	85.87
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.100	0.488	0.691	0.786	<b>0.834</b>	0.849	0.855
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.9	3576.4	3555.7	3532.4	<b>3500.4</b>	3485.2	3472.5
		<b>Torque (Nm)</b>	0.00	99.59	200.35	302.50	<b>407.03</b>	470.12	512.87
		<b>P1 (kW)</b>	8.42	48.21	88.05	128.94	<b>171.39</b>	198.14	217.20

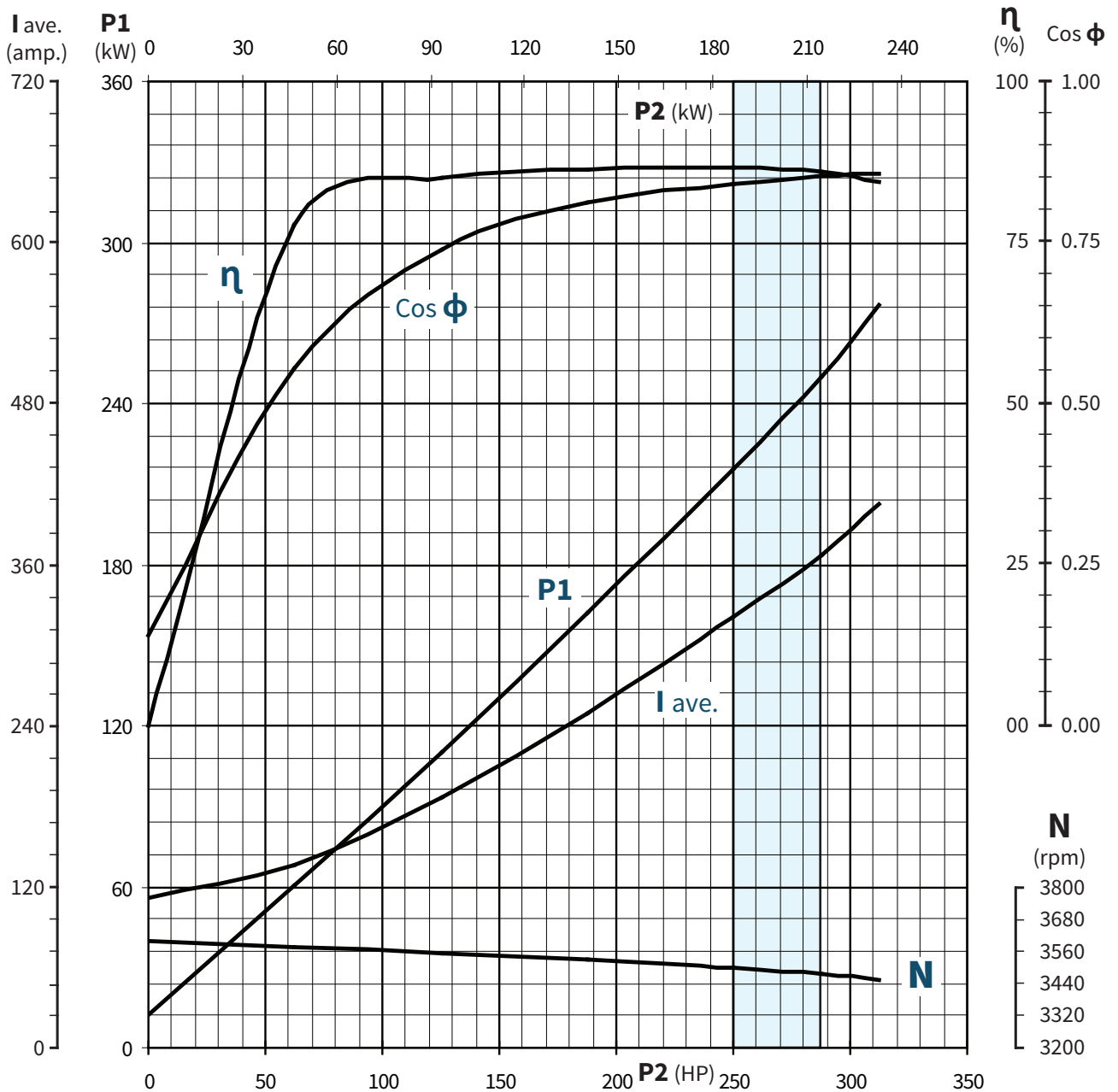
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>250</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	62.50	125.00	187.50	<b>250.00</b>	287.50	312.50
<b>186</b>	Motor Size (kW)	<b>Current (Amp.)</b>	111.74	136.24	186.73	249.76	<b>321.12</b>	367.21	405.37
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	77.64	84.91	86.46	<b>86.58</b>	85.84	84.25
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.139	0.553	0.738	0.813	<b>0.842</b>	0.854	0.857
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.8	3575.3	3551.6	3527.3	<b>3495.3</b>	3475.1	3449.8
		<b>Torque (Nm)</b>	0.00	124.53	250.72	378.68	<b>509.52</b>	589.36	645.31
		<b>P1 (kW)</b>	12.38	60.05	109.82	161.78	<b>215.42</b>	249.85	276.72

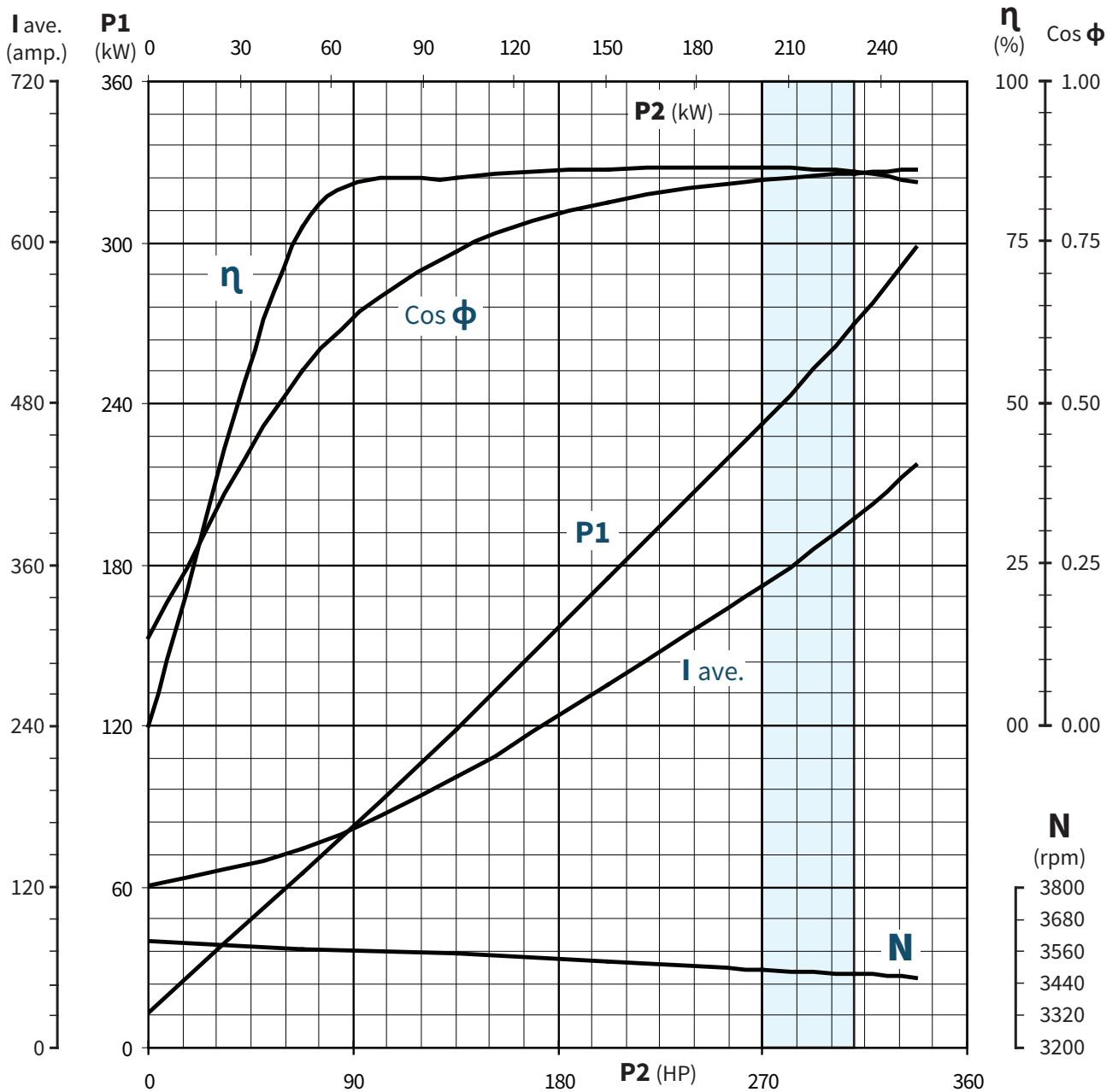
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



## Motor Performance Curve

		Load	0%	25%	50%	75%	100%	115%	125%
<b>270</b>	Motor Size (HP)	<b>HP (P2)</b>	0.00	67.50	135.00	202.50	<b>270.00</b>	310.50	337.50
<b>200</b>	Motor Size (kW)	<b>Current (Amp.)</b>	121.10	147.60	202.02	270.17	<b>344.60</b>	394.36	434.12
<b>460</b>	Volt	<b>Efficiency %</b>	0.00	77.54	84.88	86.43	<b>86.72</b>	85.92	84.37
<b>60</b>	Frequency (Hz)	<b>Cos <math>\Phi</math></b>	0.138	0.552	0.737	0.812	<b>0.846</b>	0.858	0.863
<b>2</b>	Poles (Nrs)	<b>RPM</b>	3599.8	3569.5	3547.8	3523.3	<b>3490.4</b>	3474.3	3461.6
		<b>Torque (Nm)</b>	0.00	134.71	271.07	409.41	<b>551.01</b>	636.65	694.55
		<b>P1 (kW)</b>	13.32	64.94	118.65	174.78	<b>232.27</b>	269.58	298.42

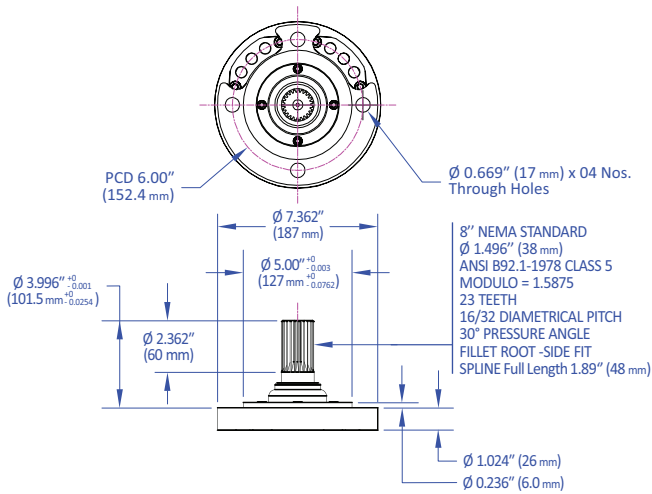
Motor Testing Tolerances According to NEMA Standard and IEC 60034-1



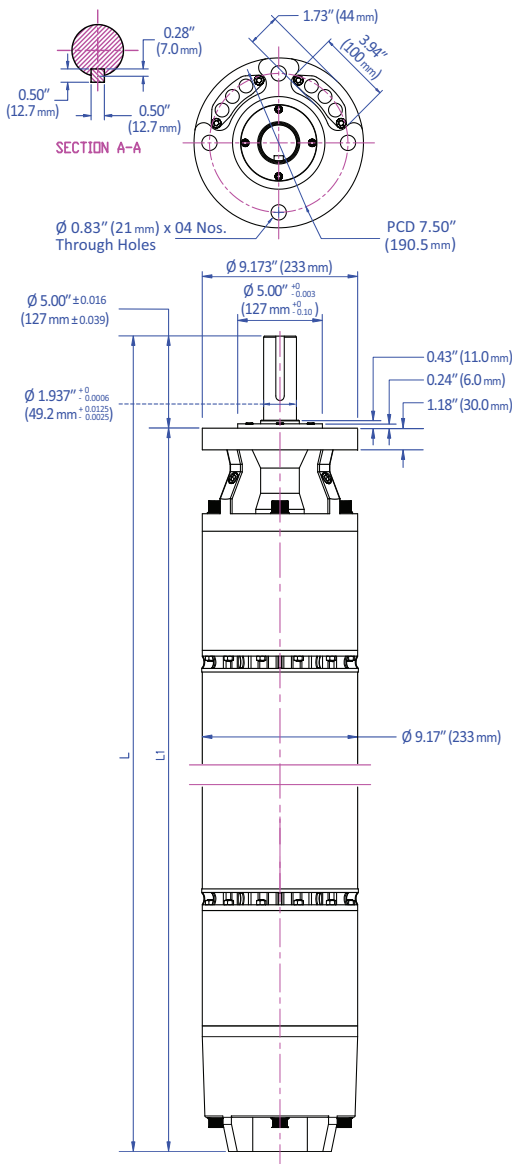


## Motor Technical Data

### 10" x 8" NEMA Spline Shaft

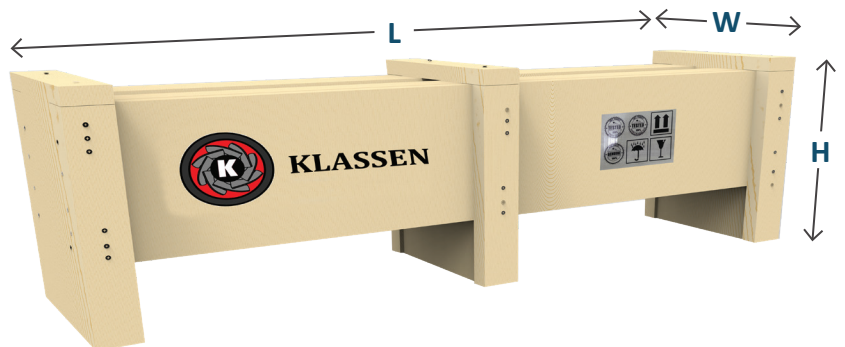


### 10" x 10" Key way Shaft

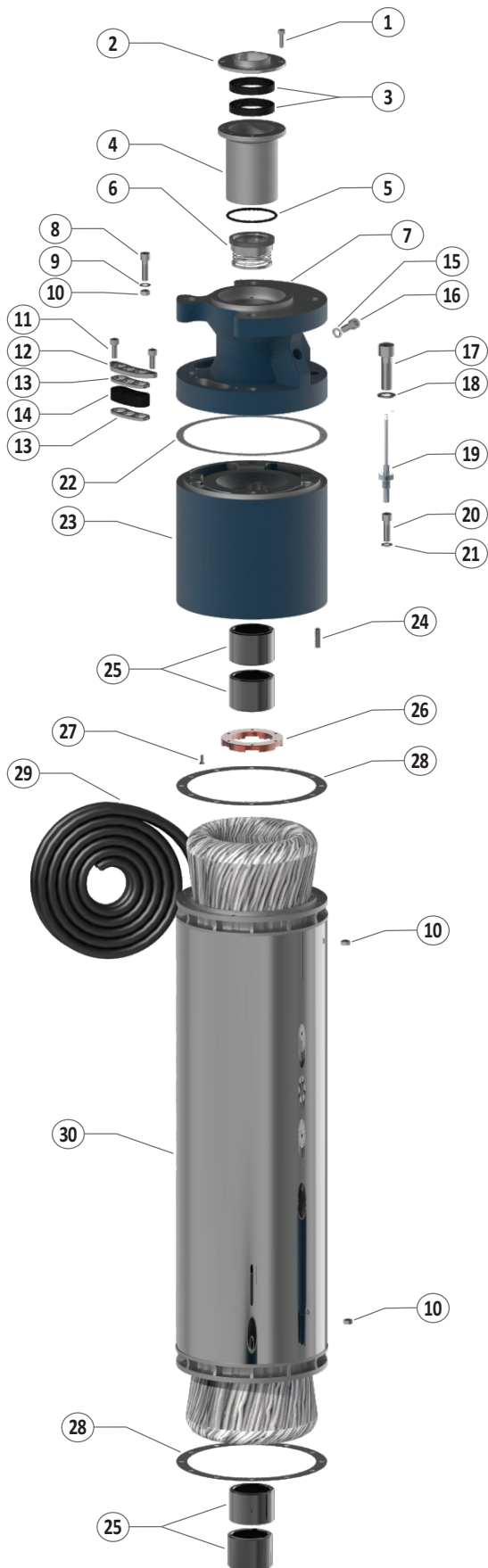


### Motor Dimensions and Weights

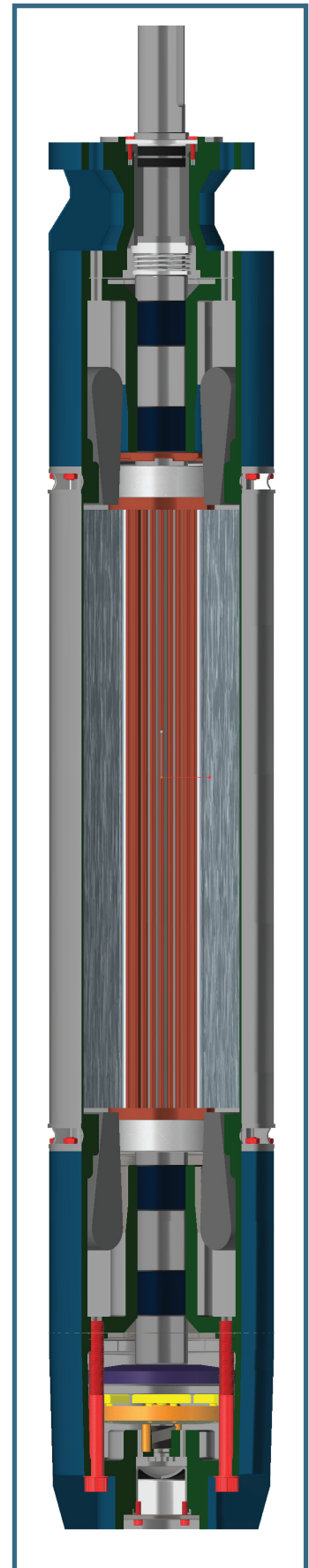
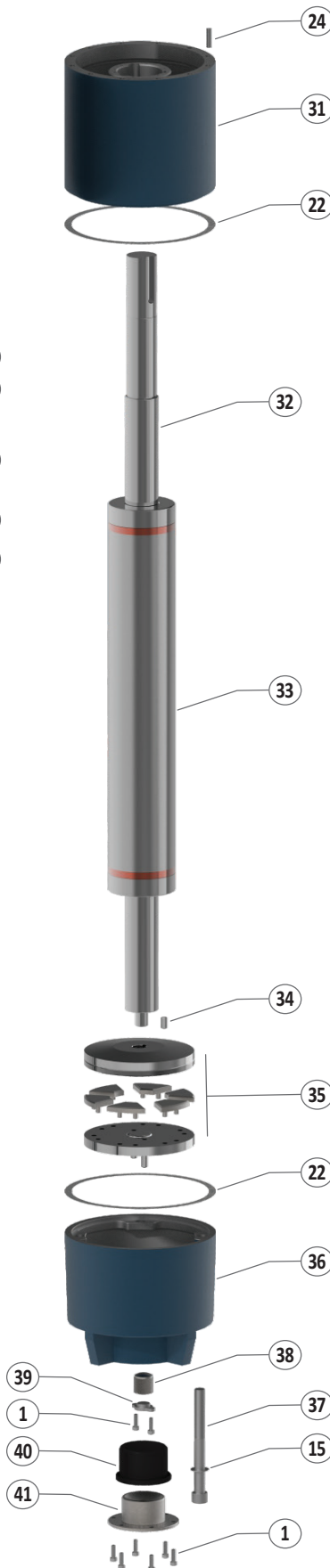
Motor Type	Motor Size		L Motor Length (inch)	L1 Motor Length (inch)	Packing Dimension W x H x L (inch)	Weight (Lbs)	
	HP	kW				Without Packing	With Packing
KM10 0750T	75	56	50.6	45.6	14 x 17.8 x 56.6	404	444
KM10 1000T	100	75	60.5	55.5	14 x 17.8 x 66.5	558	598
KM10 1250T	125	93	60.5	55.5	14 x 17.8 x 66.5	690	740
KM10 1500T	150	112	64.4	59.4	14 x 17.8 x 70.4	759	809
KM10 1750T	175	130	72.3	67.3	14 x 17.8 x 78.3	850	917
KM10 2000T	200	150	72.3	67.3	14 x 17.8 x 78.3	850	917
KM10 2500T	250	186	80.1	75.1	14 x 17.8 x 86.1	1012	1083
KM10 2700T	270	200	84.1	79.1	14 x 17.8 x 90.1	1209	1279



## Exploded View



## Cross-Sectional View



## Motor Parts List with Material & Quantity

Pos.	Item Code	Part Name	Material	Qty	Unit
1	60161252	Bolt Allen M6 x 20	Stainless Steel	12	Nr
2	60161085	Mechanical Seal Cover	Stainless Steel	1	Nr
3	60161127	Oil Seal 38x60x10	NBR	2	Nr
4	60161125	Bush Seal Support	Cast Iron	1	Nr
5	60161115	O-Ring 65x2,5	NBR	1	Nr
6	60161275	Mechanical Seal Complete	Silicon Tungsten Carbide (WC) + NBR + Stainless Steel	1	Nr
7	60271000	Top Piece / Upper Support Double Flange	Cast Iron	1	Nr
8	60161254	Bolt Allen M8 x 35	Stainless Steel	1	Nr
9	60161263	Spring Washer M8	Stainless Steel	1	Nr
10	60161262	Nut Hex M8	Stainless Steel	25	Nr
11	60161253	Bolt Allen M8 x 25	Stainless Steel	2	Nr
12	60161150	Cable Top Cover Plate	Carbon Steel	2	Nr
13	60271165	Washer nylon	Nylon	2	Nr
14	60271180	Gasket Rubber	NBR	1	Nr
15	60101157	Washer Bonded / Dowty Seal M10	NBR / Stainless Steel	2	Nr
16	60101068	Bolt Allen M10 x 16	Stainless Steel	2	Nr
17	60161255	Bolt Allen M16 x 75	Stainless Steel	4	Nr
18	60161272	Washer Bonded / Dowty Seal M16	NBR / Stainless Steel	8	Nr
19	60101485	PT 100 Sensor	Stainless Steel	1	Nr
20	60161250	Bolt Allen M8x20	Stainless Steel	14	Nr
21	60161267	Washer Bonded / Dowty Seal M8	NBR/Stainless Steel	1	Nr
22	60271150	Gasket Upper & Lower	Tesnit	2	Nr
23	60161080	Upper Bearing Housing	Cast Iron	1	Nr
24	60271170	Stud Bolt M8x35	Stainless Steel	24	Nr
25	60271100	Carbon Bush	Carbon	4	Nr
26	60271030	Upper Thrust Bearing	Brass	1	Nr
27	60101142	Screw CSK M4x10	Stainless Steel	6	Nr
28	60271152	Gasket Stator	Tesnit	2	Nr
29A	601011XX	Cable Tail (1x16mm2/1x25mm2/1x35mm2)	PVC + Copper	48	Ft
29B	60101185	Cable Tail 1x10 mm2 (For Earthing)	PVC + Copper	16	Ft
30	602712XX	Stator Stack (Assembly)	Silicon Steel (50C800) + SS304	1	Set
31	60271040	Lower Bearing Housing	Cast Iron	1	Nr
32	602713XX	Motor Shaft	Stainless Steel (SS430)	1	Nr
33	60271330	Rotor Lamination (Including Shaft + Copper Bars + End Ring)	Silicon Steel (50C800) + Stainless Steel + Copper	1	Set
34	60101145	Key for End Shaft	Stainless Steel	1	Nr
35	60271050	Thrust Bearing Complete	Stainless Steel / Carbon	1	Set
36	60271020	Thrust Support	Cast Iron	1	Nr
37	60271142	Bolt Allen M16x180	Stainless Steel	4	Nr
38	60271140	Adjustment Bolt	Stainless Steel	1	Nr
39	60161010	Lock Washer Adj. Bolt	MS	1	Nr
40	60271130	Diaphragm Rubber	NBR	1	Nr
41	60271135	Diaphragm Support	Cast Iron	1	Nr

## Sensor Features

PT100s, also known as Platinum Resistance Transducers, or RTDs (Resistance Temperature Detectors), offer a cost-effective and precise approach to temperature measurement. This is achieved through the direct relationship between the PT100 chip's resistance and the temperature being measured.

Klassen standard PT100s are available in configurations using either 2 or 3 wires. The accuracy of temperature measurement improves as the number of wires increases. Therefore, PT100s with 3 wire configurations provide more precise readings compared to those with 2 wires. When PT100s are utilized alongside a suitable measuring instrument, they effectively indicate the actual temperature of the sensor, regardless of its location, with a small tolerance for accuracy.

**Temperature Range:** PT100 -58 °F to +392 °F

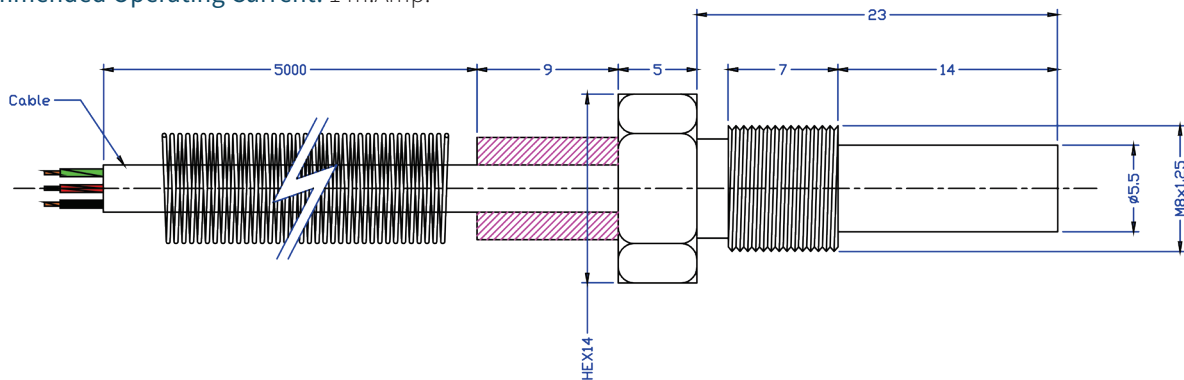
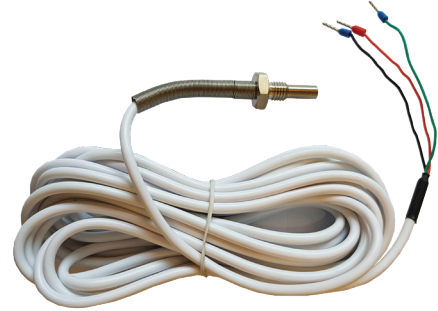
**Accuracy Class:** Class B

**Nominal Resistance:** 100 Ohms at 32 °F (The resistance will change by 0.3851 ohms of each 33.8 °F change in temperature, and the tolerance of a Class B Device is +/- 0.0012 ohms)

**Standard Sheath Material:** Ceramic with SS304 Cover Tube

**Wire Temperature Rating:** 482 °F

**Recommended Operating Current:** 1 m.Amp.



## Cable for Sensor

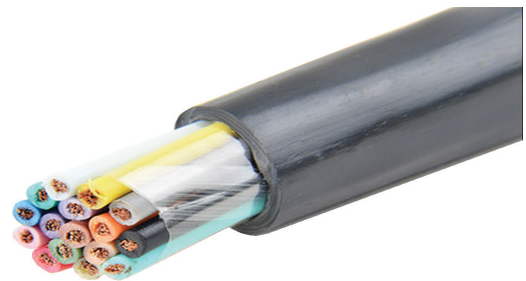
**Usage:** Multiwire cable specially developed for borehole submersible motor's temperature sensors.

**Packing:** 328 or 1640 feet coil.

**Insulation:** PE

**Sheath:** Standard Grey High Temp PVC (Other materials and colors are available upon request)

**Screen:** Overall Aluminum/Polyester Laminate.



Nearest AWG	No. of Cores	Conductors Nos./Dia (mm)	Insulation Thickness (mm)	Nominal Wire to Wire Capacitance (pf/m)	Nominal Dia (mm)
24	3	7/0.20 TC	0.30	80	4.7
24	6	7/0.20 TC	0.30	80	5.5
24	12	7/0.20 TC	0.30	80	7.5



Certified to  
NSF/ANSI/CAN 61



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Effective from March, 2023 Replaces all previous versions.