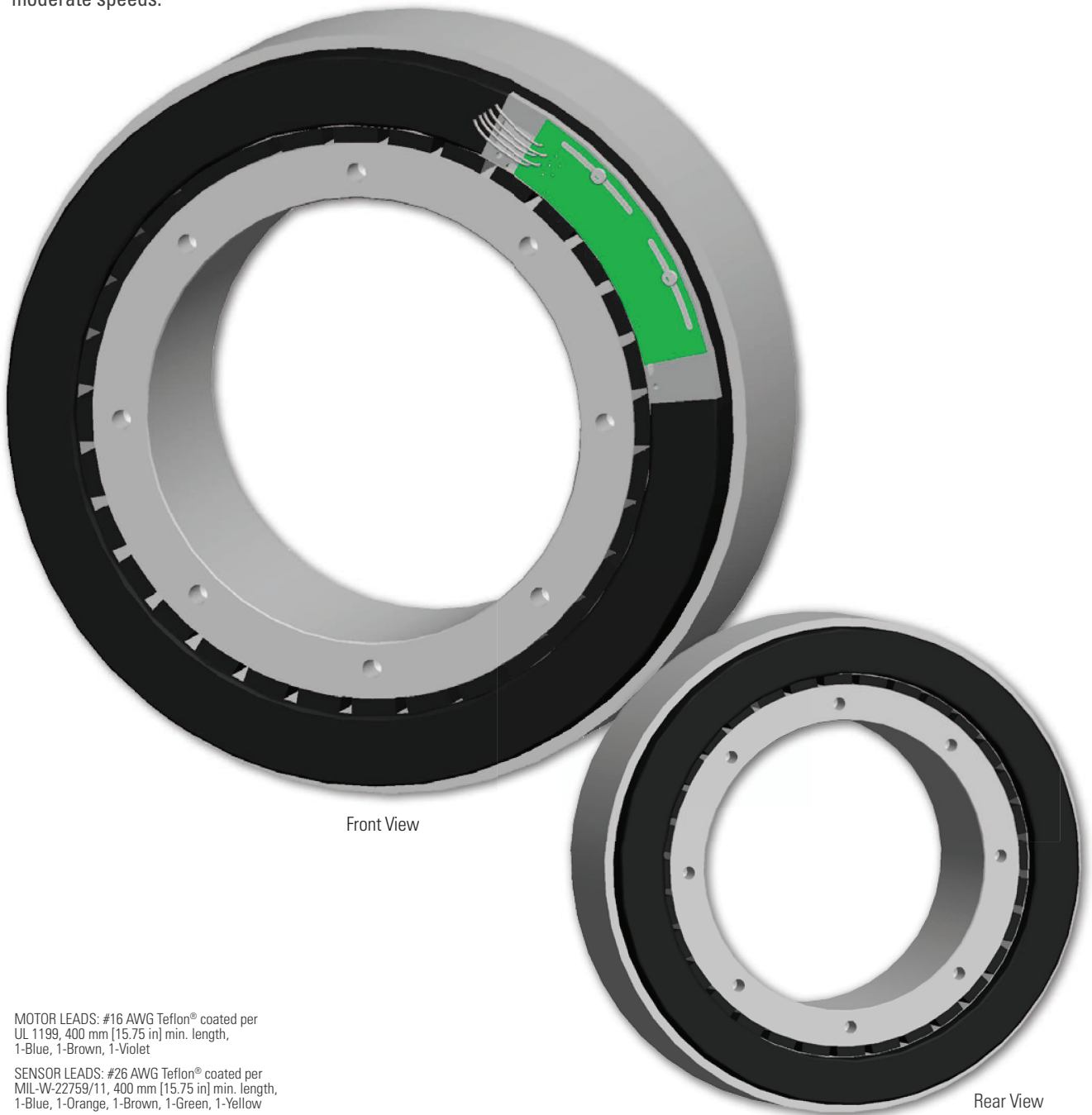


# KBM 79 Frameless Motors

The KBM(S)-79 series provides a classic torque motor footprint - large diameter with a short axial length. With a skewed stator, low cogging, and low harmonic distortion these motors produce extremely smooth rotation. In addition, the high pole count and excellent torque / volume ratio makes the KBM(S)-79 an ideal fit for direct drive applications requiring high torque at low to moderate speeds.

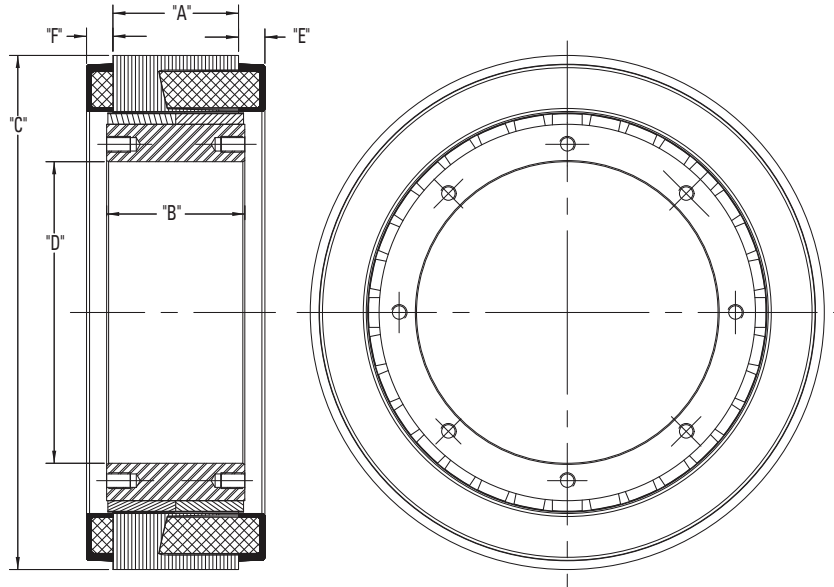


MOTOR LEADS: #16 AWG Teflon® coated per UL 1199, 400 mm [15.75 in] min. length, 1-Blue, 1-Brown, 1-Violet

SENSOR LEADS: #26 AWG Teflon® coated per MIL-W-22759/11, 400 mm [15.75 in] min. length, 1-Blue, 1-Orange, 1-Brown, 1-Green, 1-Yellow

# KBM 79 Outline Drawings

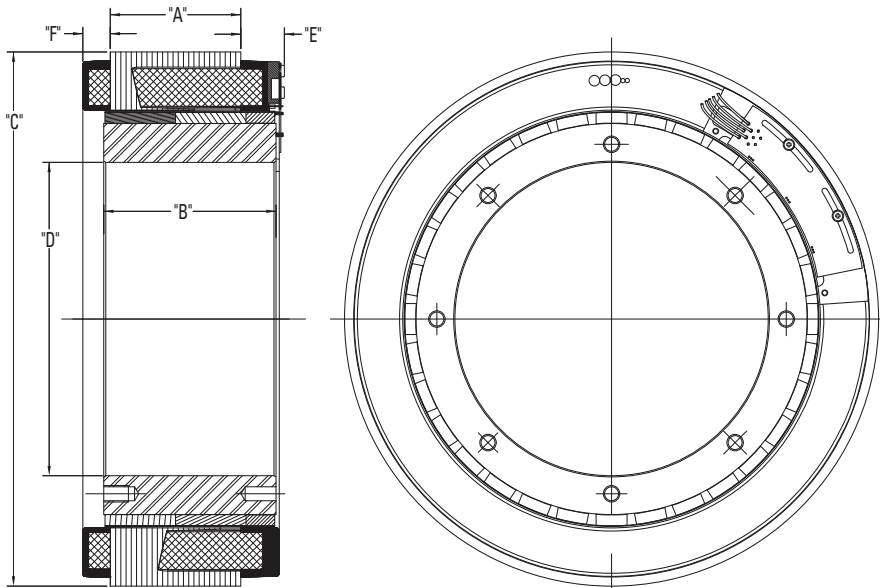
## KBM 79



Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBM-79X01	31.75 [1.250]	38.10 [1.500]	259.63 [10.221]	152.43 [6.001]	13.34 [.525]	13.34 [.525]
KBM-79X02	63.50 [2.500]	69.85 [2.750]	259.63 [10.221]	152.43 [6.001]	13.34 [.525]	13.34 [.525]
KBM-79X03	127.00 [5.000]	133.35 [5.250]	259.63 [10.221]	152.43 [6.001]	13.34 [.525]	13.34 [.525]

All dimensions are nominal. For more detailed and interactive 3D models with 2D product views, visit [www.kollmorgen.com/kbm](http://www.kollmorgen.com/kbm)

## KBMS 79

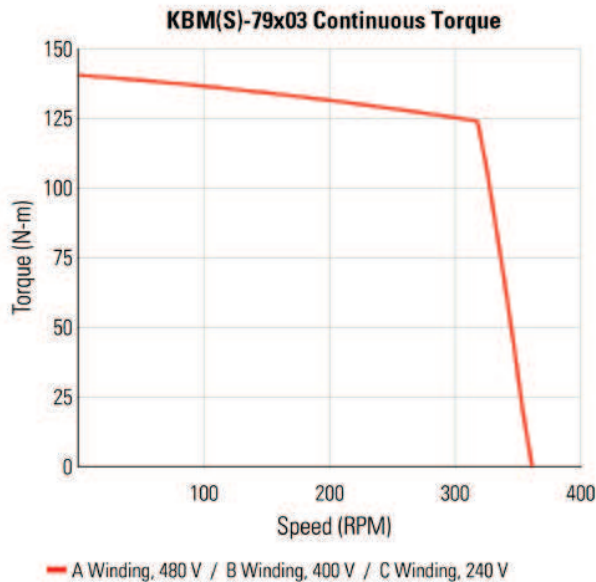
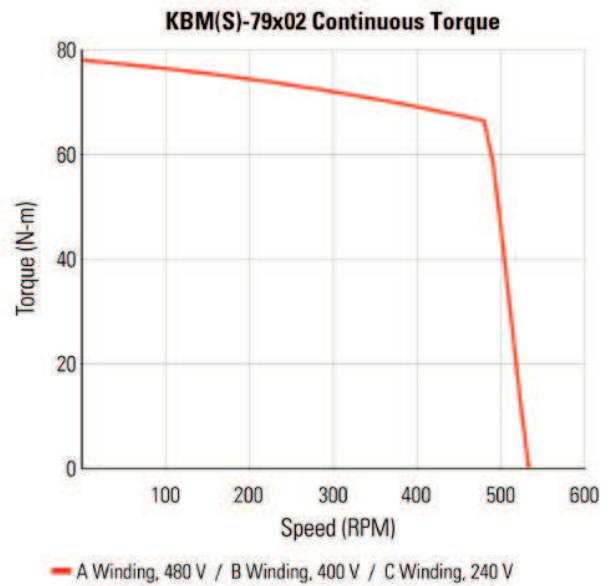
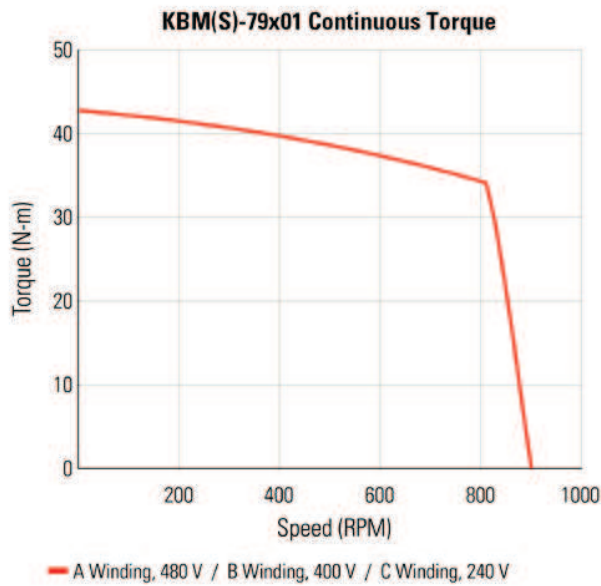


Model Number	"A" mm[inch]	"B" mm[inch]	Ø "C" mm[inch]	Ø "D" mm[inch]	"E" MAX mm[inch]	"F" MAX mm[inch]
KBMS-79X01	31.75 [1.250]	52.07 [2.050]	259.63 [10.221]	152.43 [6.001]	21.20 [.835]	13.34 [.525]
KBMS-79X02	63.50 [2.500]	83.82 [3.300]	259.63 [10.221]	152.43 [6.001]	21.20 [.835]	13.34 [.525]
KBMS-79X03	127.00 [5.000]	147.07 [5.790]	259.63 [10.221]	152.43 [6.001]	21.20 [.835]	13.34 [.525]

All dimensions are nominal. For more detailed and interactive 3D models with 2D product views, visit [www.kollmorgen.com/kbm](http://www.kollmorgen.com/kbm)

# KBM 79 Performance Curves

Continuous duty capability for 130°C rise in a 25°C ambient using recommended AKD servo drive and sinusoidal commutation.



# KBM 79 Performance Data

## KBM(S) Frameless Motor Series

KBM(S)-79XXX PERFORMANCE DATA & MOTOR PARAMETERS											
Motor Parameter	Symbol	Units	KBM(S)-79X01-X			KBM(S)-79X02-X			KBM(S)-79X03-X		
			A	B	C	A	B	C	A	B	C
Continuous Stall Torque at 25°C Amb. (1)	Tc	N-m	43.5	43.5	43.5	79.6	79.6	79.6	143	143	143
		lb-ft	32.1	32.1	32.1	58.7	58.7	58.7	106	106	106
Continuous Current	Ic	Arms	4.95	6.00	10.0	5.40	6.50	11.0	6.76	8.00	13.2
Peak Stall Torque (25°C winding temp)	Tp	N-m	152	152	152	319	319	319	637	637	637
		lb-ft	112	112	112	235	235	235	470	470	470
Peak Current	Ip	Arms	20.8	25.3	41.7	26.1	31.4	52.4	36.7	46.3	73.7
Rated Continuous Output Power at 25°C Amb. (1)	P Rated	Watts	2585	2585	2585	2920	2920	2920	3750	3750	3640
	HP Rated	HP	3.47	3.47	3.47	3.91	3.91	3.91	5.03	5.03	4.88
Speed at Rated Power	N Rated	RPM	730	730	730	430	430	430	300	300	290
Torque Sensitivity (2)	Kt	N-m / Arms	8.87	7.34	4.43	14.9	12.4	7.46	21.4	18.1	11.0
		lb-ft / Arms	6.54	5.42	3.27	11.0	9.17	5.50	15.8	13.4	8.10
Back EMF Constant (3)	Kb	Vpk / kRPM	758	628	379	1275	1062	637	1832	1550	939
Motor Constant	Km	N-m/√watt	2.89	2.89	2.89	4.81	4.81	4.81	7.29	7.29	7.29
		lb-ft/√watt	2.13	2.13	2.13	3.55	3.55	3.55	5.38	5.38	5.38
Resistance (line to line)	Rm	Ohms	6.26	4.25	1.56	6.40	4.44	1.60	5.75	3.86	1.47
Inductance	Lm	mH	23	16	5.8	32	22	8.0	34	24	8.9
Inertia (KBM)	Jm	Kg-m <sup>2</sup>	3.25E-2			5.97E-2			0.114		
		lb-ft-s <sup>2</sup>	2.40E-2			4.40E-2			8.40E-2		
Weight (KBM)	Wt	Kg	9.21			16.9			32.1		
		lb	20.3			37.3			70.8		
Inertia (KBMS)	Jm	Kg-m <sup>2</sup>	4.45E-2			7.15E-2			0.125		
		lb-ft-s <sup>2</sup>	3.28E-2			5.27E-2			9.20E-2		
Weight (KBMS)	Wt	Kg	10.7			18.40			33.5		
		lb	23.5			40.5			73.9		
Max Static Friction	Tf	N-m	0.407			0.746			1.36		
		lb-ft	0.300			0.550			1.00		
Cogging Friction (peak-to-peak)	Tcog	N-m	0.136			0.244			0.447		
		lb-ft	0.100			0.180			0.330		
Viscous Damping	Fi	N-m/kRPM	2.44			15.5			31.2		
		lb-ft /kRPM	1.80			11.4			23.0		
Thermal Resistance (4)	TPR	°C / watt	0.377			0.311			0.220		
Number of Poles	P	-	32			32			32		
Recommended Drive	AKD-■ _ _ _ _		00607	01207	02406	00607	01207	02406	01207	01207	02406
Voltage Req'd at Rated Output	Vac Input	VAC	480	400	240	480	400	240	480	400	240
Peak Stall Torque (5) (Motor with AKD servo drive)	Tp Drive	N-m	144	152	152	250	310	296	550	475	475
		lb-ft	106	112	112	184	228	218	406	350	350

\* Notes 1) Winding temperature = 155°C at continuous stall, at rated output, and for performance curves.  
 2) To calculate no-load Kt and Kb at 25°C, multiply by 1.064.  
 3) Back EMF is peak (not RMS).  
 4) TPR assumes motor is housed and mounted to a 12" x 12" x 3/4" heat sink or equivalent.  
 5) Peak torque may be limited by AKD servo drive current, see page 11 for drive ratings or visit [www.kollmorgen.com](http://www.kollmorgen.com).