

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line		: W40 NEMA Premium Efficiency Three-Phase	Product code :	14272523	
			Catalog # :	10018OT3E404TC-W40	
Frame		: 404/5TC	Cooling method : IC01 - ODP		
Insulation class		: F	Mounting : F-1		
Duty cycle		: Cont.(S1)	Rotation <sup>1</sup> : Both (CW and CCW)		
Ambient temperature		: -20°C to +40°C	Starting method : Direct On Line		
Altitude		: 1000 m.a.s.l.	Approx. weight <sup>2</sup> : 979 lb		
Protection degree		: IP23	Moment of inertia (J) : 21.9 sq.ft.lb		
Design		: B			
Output [HP]	100	75	75	75	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	230/115	103	97.5	96.2	
L. R. Amperes [A]	1564/782	742	683	750	
LRC [A]	6.8x(Code G)	7.2x(Code H)	7.0x(Code H)	7.8x(Code J)	
No load current [A]	79.4/39.7	33.0	36.5	40.0	
Rated speed [RPM]	1780	1482	1484	1485	
Slip [%]	1.11	1.20	1.07	1.00	
Rated torque [ft.lb]	295	266	265	265	
Locked rotor torque [%]	200	220	240	270	
Breakdown torque [%]	250	250	280	300	
Service factor	1.25	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	21s (cold) 12s (hot)	23s (cold) 13s (hot)	21s (cold) 12s (hot)	25s (cold) 14s (hot)	
Noise level <sup>2</sup>	69.0 dB(A)				
Efficiency (%)	25%	94.9	90.2	90.3	
	50%	95.0	91.9	92.0	
	75%	95.4	92.9	92.9	
	100%	95.4	94.7	94.7	
Power Factor	25%	0.49	0.50	0.47	
	50%	0.75	0.73	0.72	
	75%	0.83	0.82	0.80	
	100%	0.86	0.86	0.86	
Bearing type		<u>Drive end</u> : 6316 C3	<u>Non drive end</u> : 6212 Z C3	Foundation loads	
Sealing		: Without	: Without	Max. traction : 1896 lb	
Lubrication interval		: 20000 h	: 20000 h	Max. compression : 2876 lb	
Lubricant amount		: 34 g	: 13 g		
Lubricant type		: Mobil Polyrex EM			
Notes USABLE @208V 254A SF 1.15 SFA 292A					
This revision replaces and cancel the previous one, which must be eliminated. (1) Looking the motor from the shaft end. (2) Measured at 1m and with tolerance of +3dB(A). (3) Approximate weight subject to changes after manufacturing process. (4) At 100% of full load.			These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1.		
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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



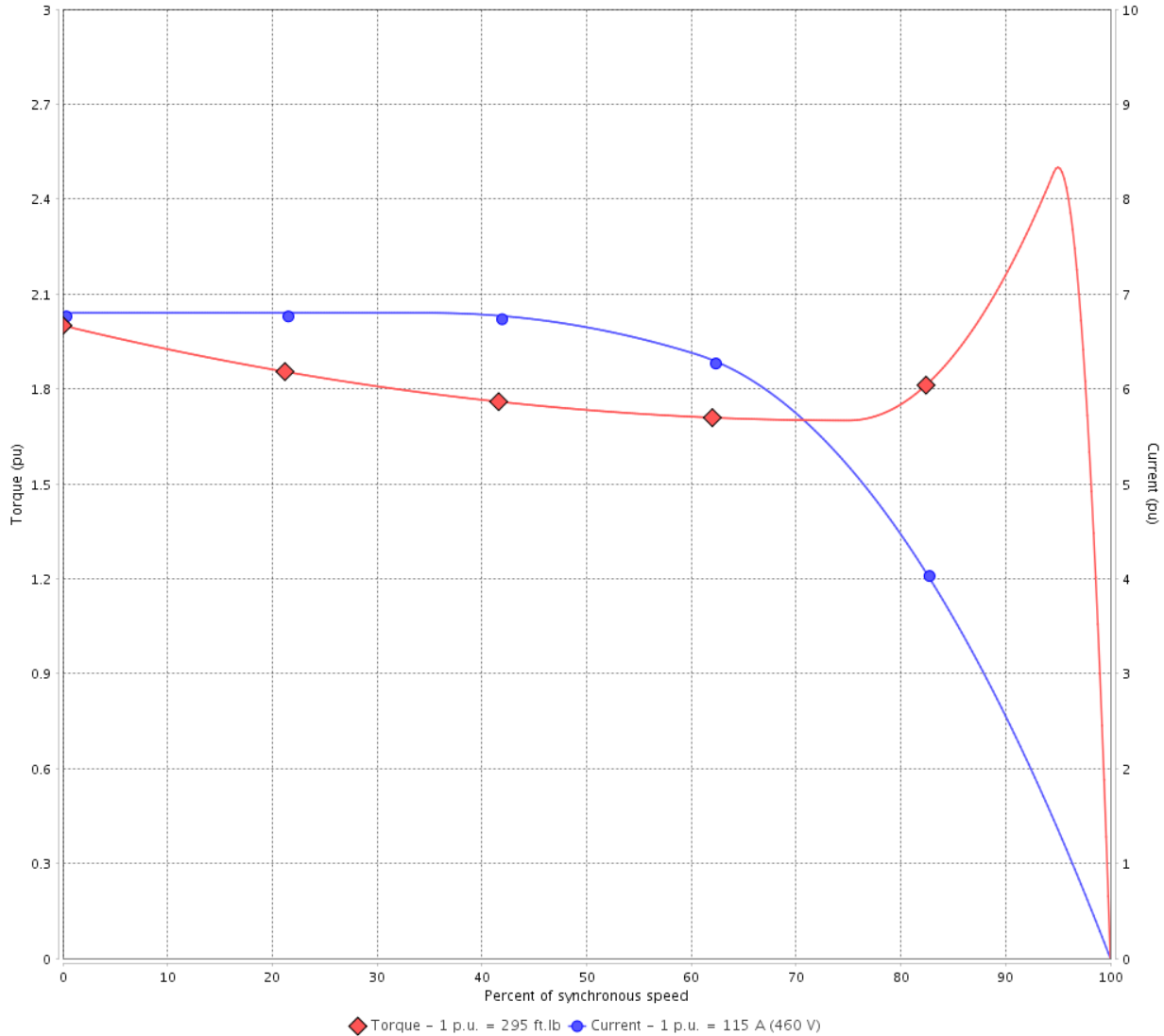
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 4P

Rated current	: 230/115 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 295 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



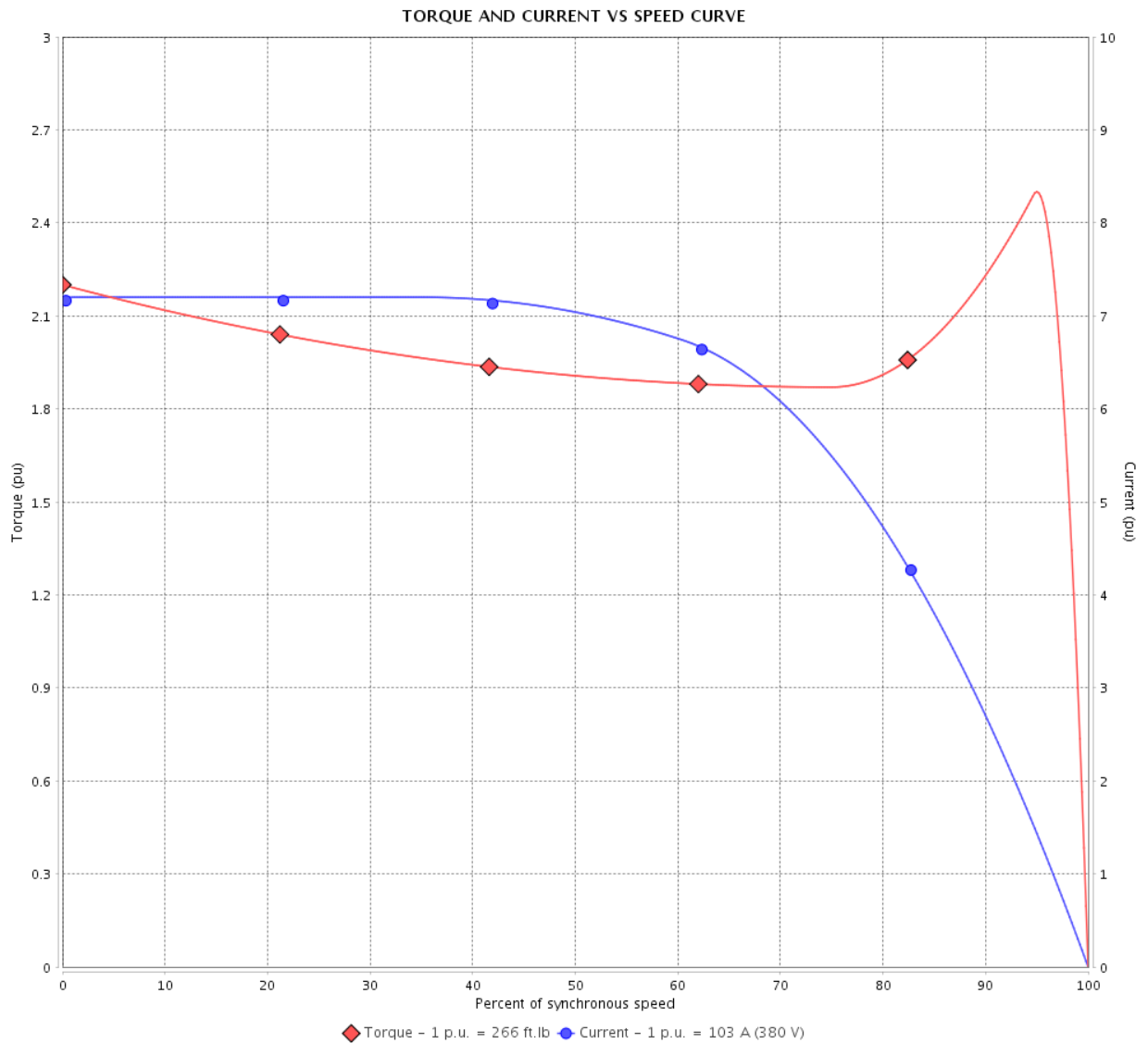
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current	: 103 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1482 rpm	Design	: B

Locked rotor time : 23s (cold) 13s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



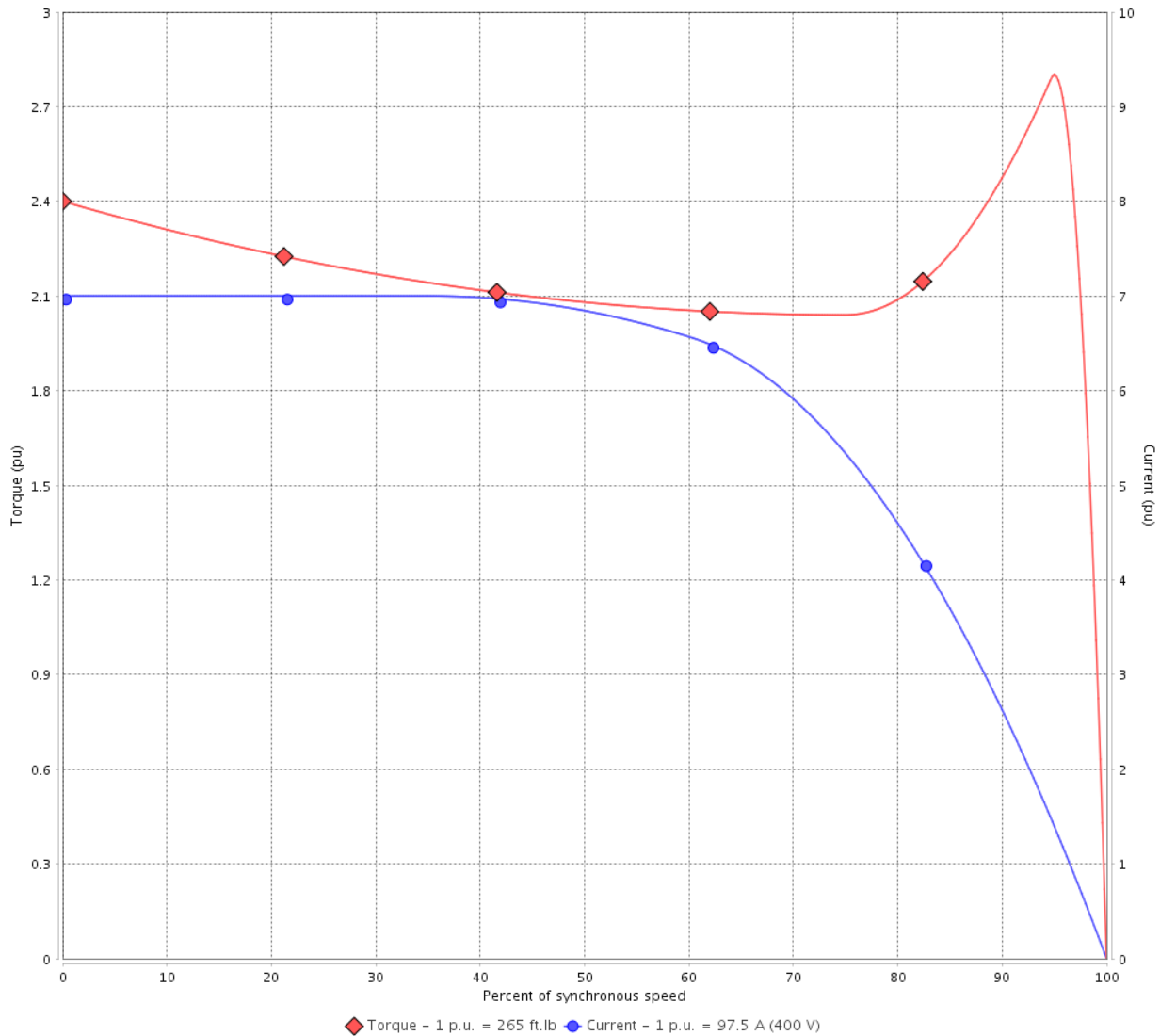
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 97.5 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 1484 rpm	Design	: B

Locked rotor time : 21s (cold) 12s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



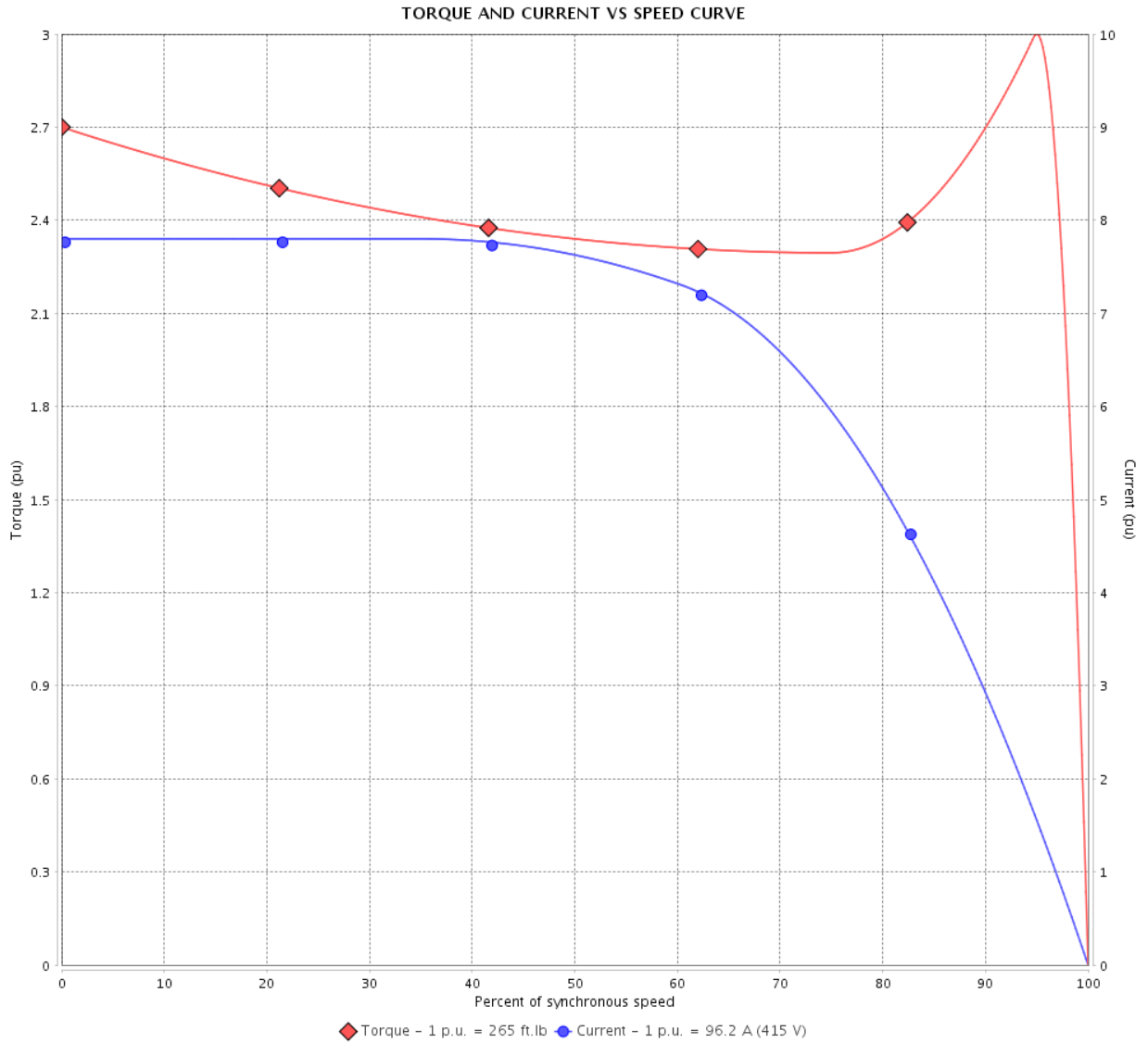
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40



Performance : 415 V 50 Hz 4P IE3

Rated current	: 96.2 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 7.8	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 270 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

Locked rotor time : 25s (cold) 14s (hot)

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

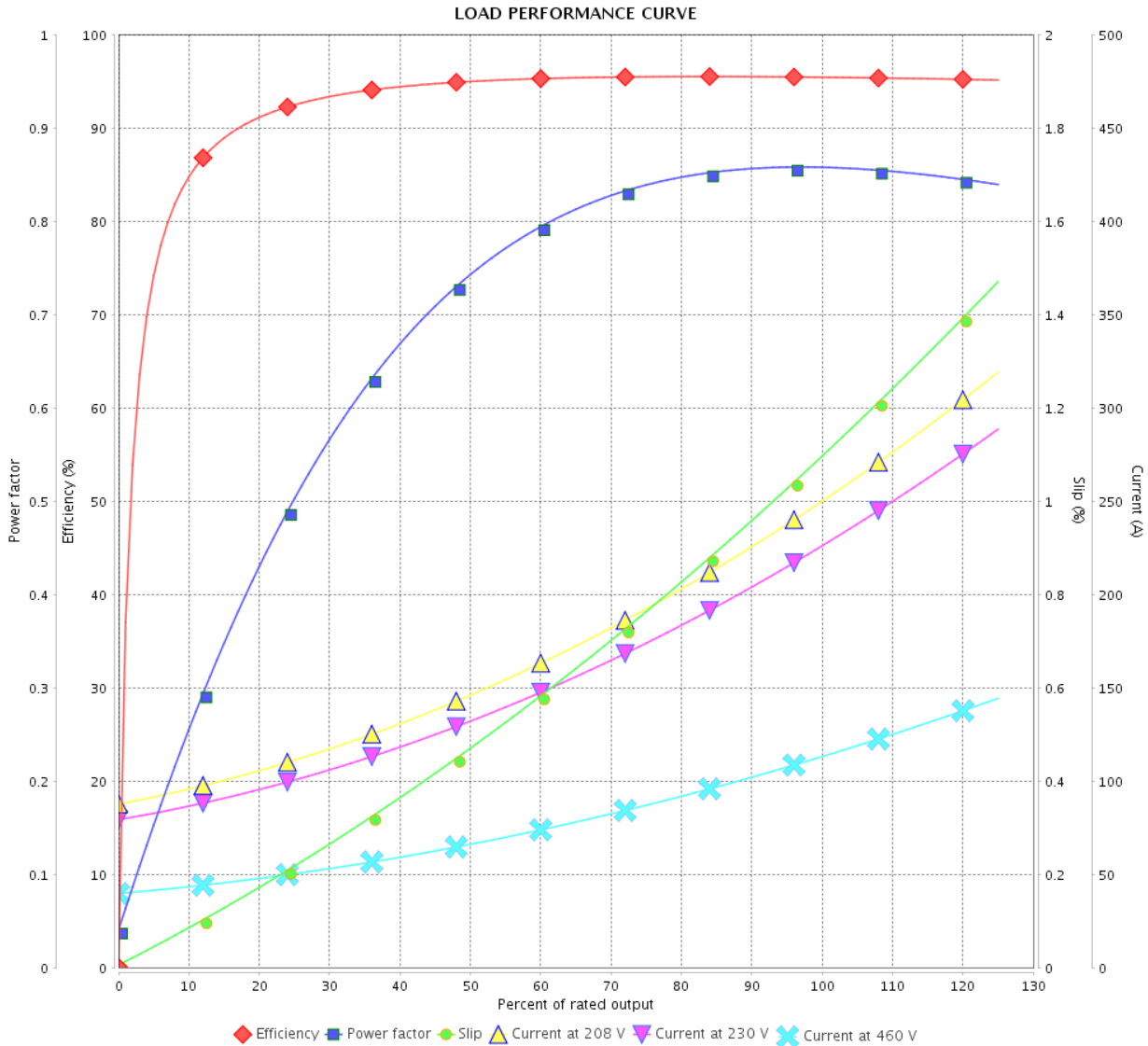


Customer : \_\_\_\_\_

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40



Performance : 230/460 V 60 Hz 4P

Rated current : 230/115 A  
 LRC : 6.8  
 Rated torque : 295 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 250 %  
 Rated speed : 1780 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

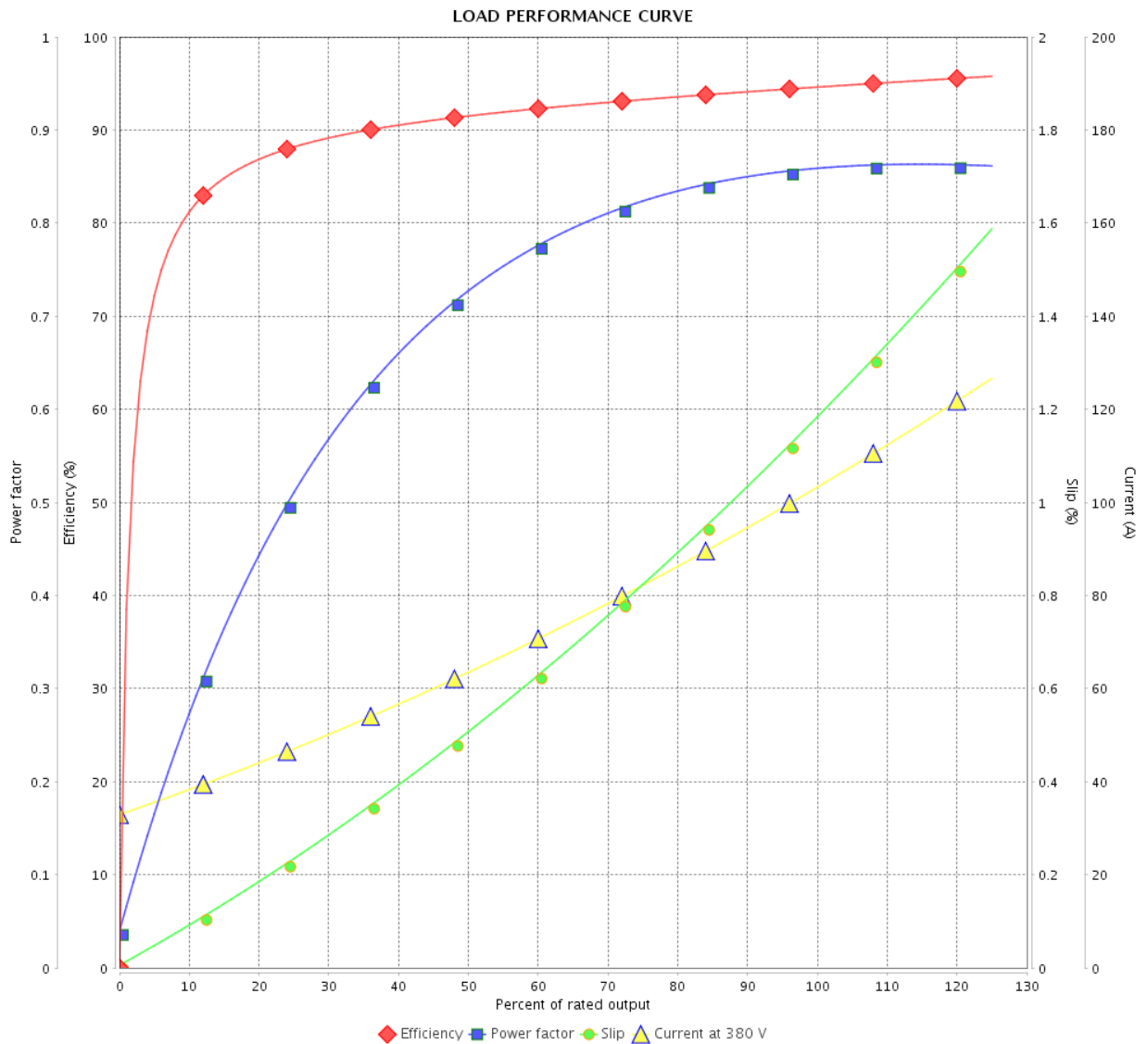


Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current : 103 A  
 LRC : 7.2  
 Rated torque : 266 ft.lb  
 Locked rotor torque : 220 %  
 Breakdown torque : 250 %  
 Rated speed : 1482 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



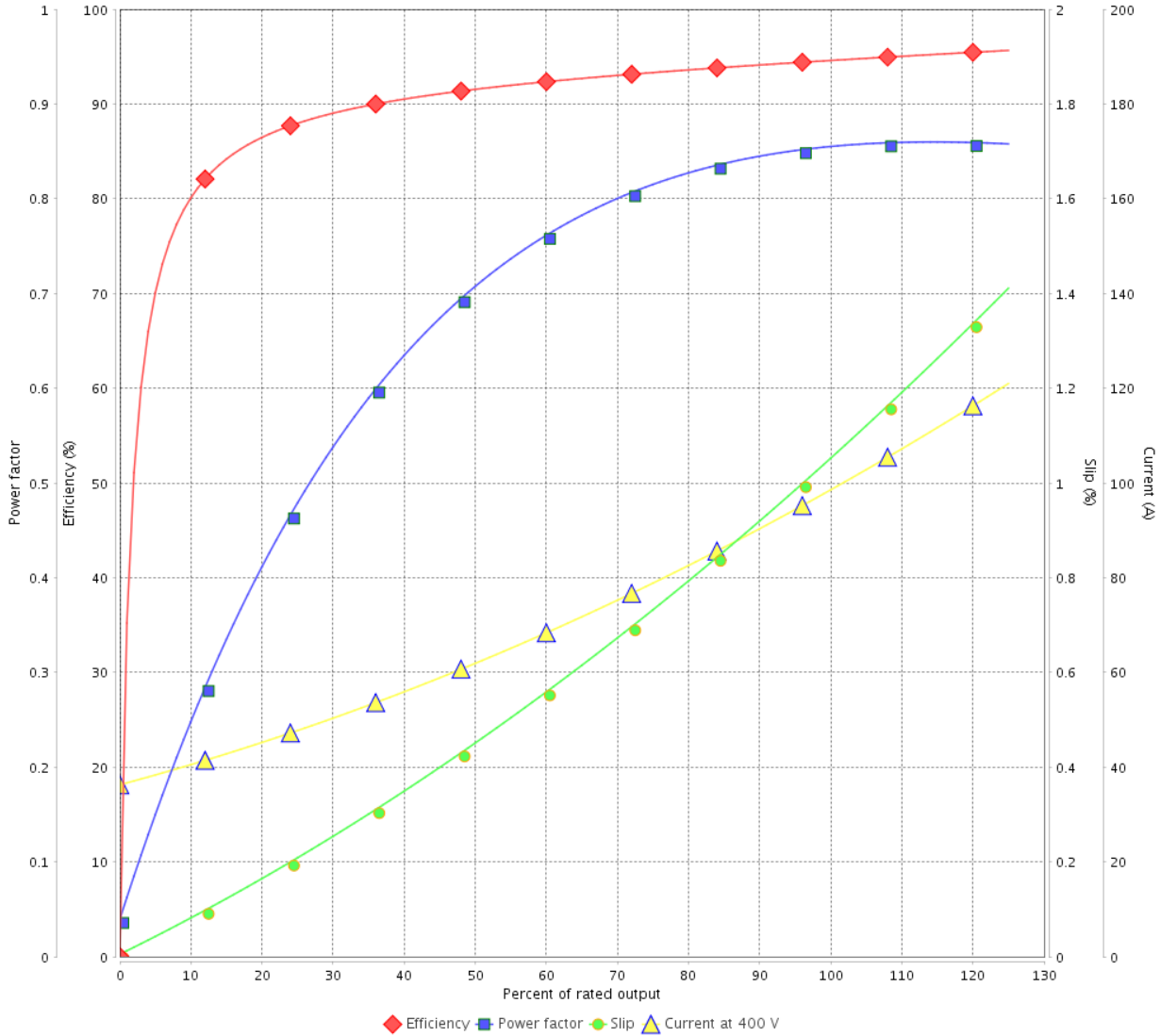
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current : 97.5 A  
LRC : 7.0  
Rated torque : 265 ft.lb  
Locked rotor torque : 240 %  
Breakdown torque : 280 %  
Rated speed : 1484 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

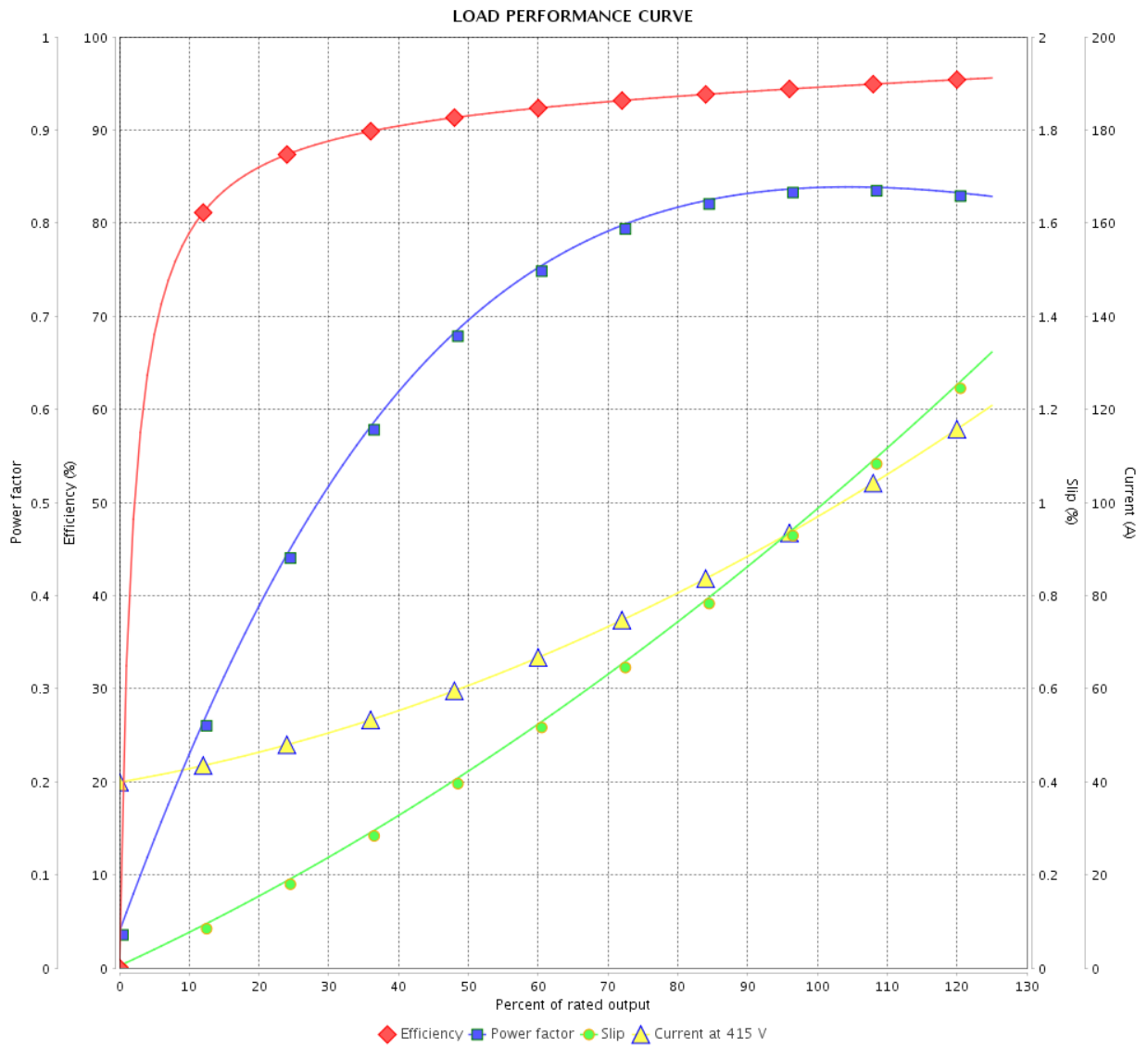


Customer : \_\_\_\_\_

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40



Performance : 415 V 50 Hz 4P IE3

Rated current : 96.2 A  
 LRC : 7.8  
 Rated torque : 265 ft.lb  
 Locked rotor torque : 270 %  
 Breakdown torque : 300 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

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Rated current : 230/115 A  
LRC : 6.8  
Rated torque : 295 ft.lb  
Locked rotor torque : 200 %  
Breakdown torque : 250 %  
Rated speed : 1780 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.25  
Temperature rise : 80 K  
Design : B

Heating constant

Cooling constant

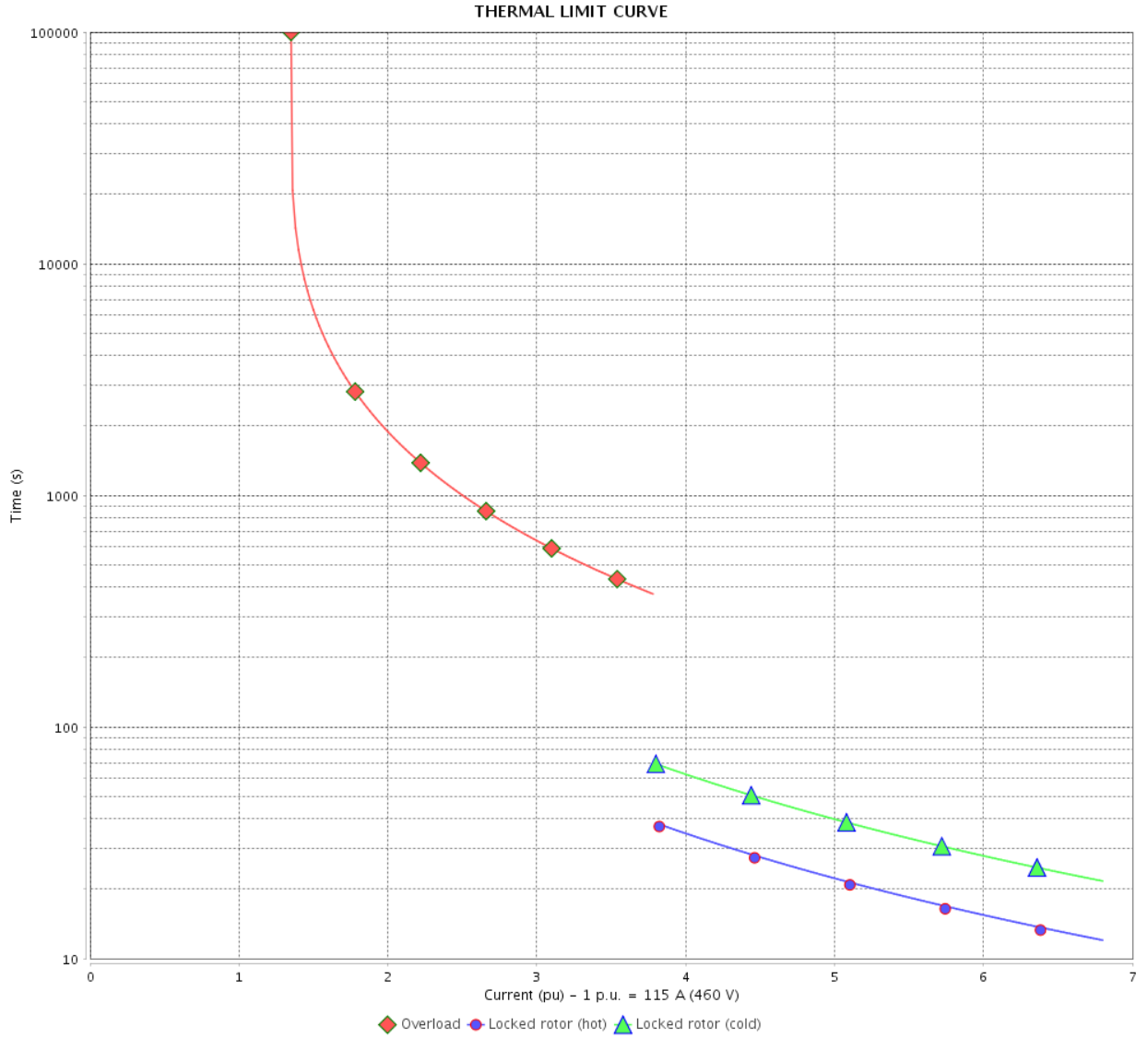
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

Performance : 380 V 50 Hz 4P IE3

Rated current	: 103 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 7.2	Duty cycle	: Cont.(S1)
Rated torque	: 266 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1482 rpm	Design	: B

Heating constant

Cooling constant

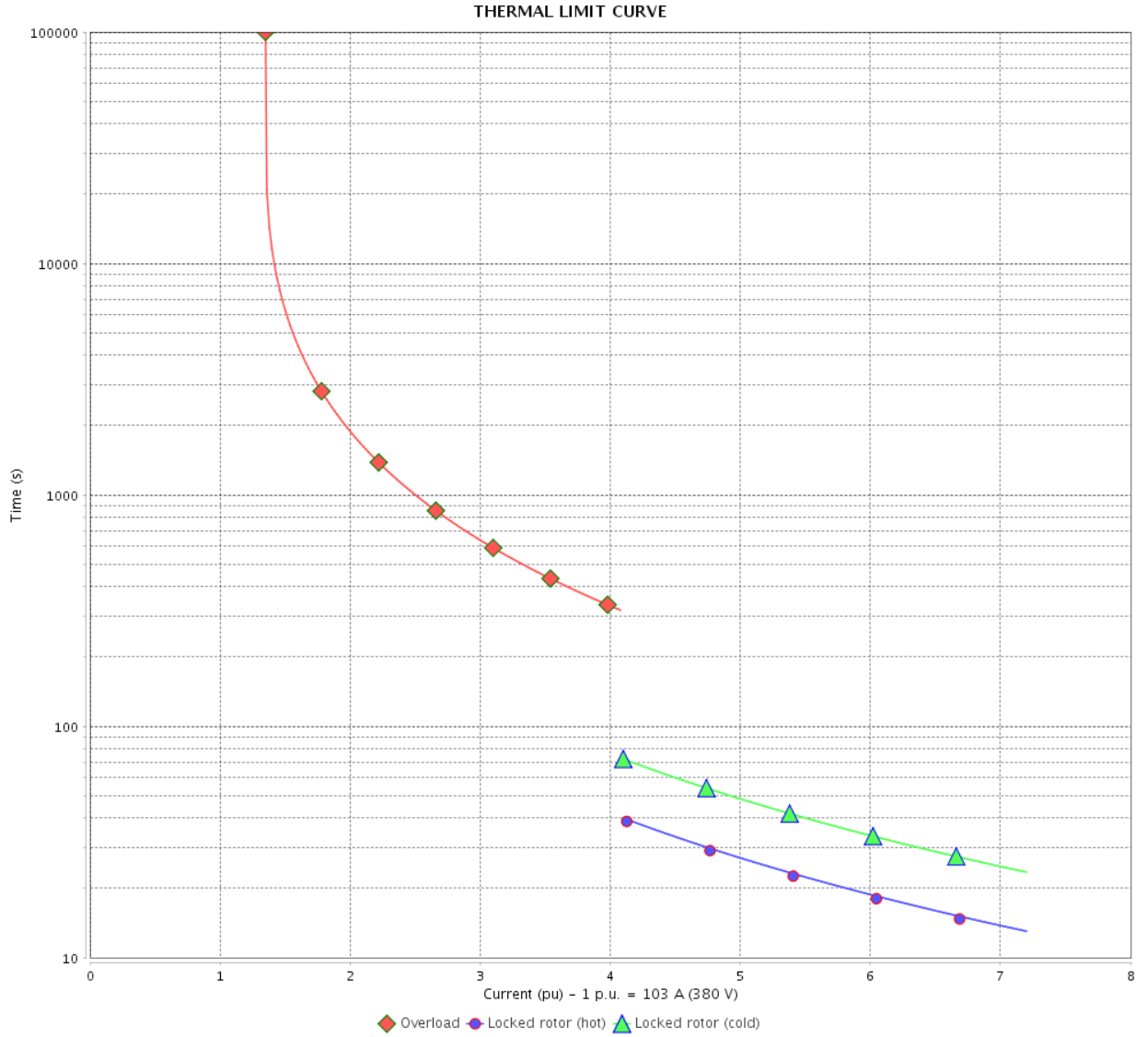
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

Performance : 400 V 50 Hz 4P IE3

Rated current	: 97.5 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 1484 rpm	Design	: B

Heating constant

Cooling constant

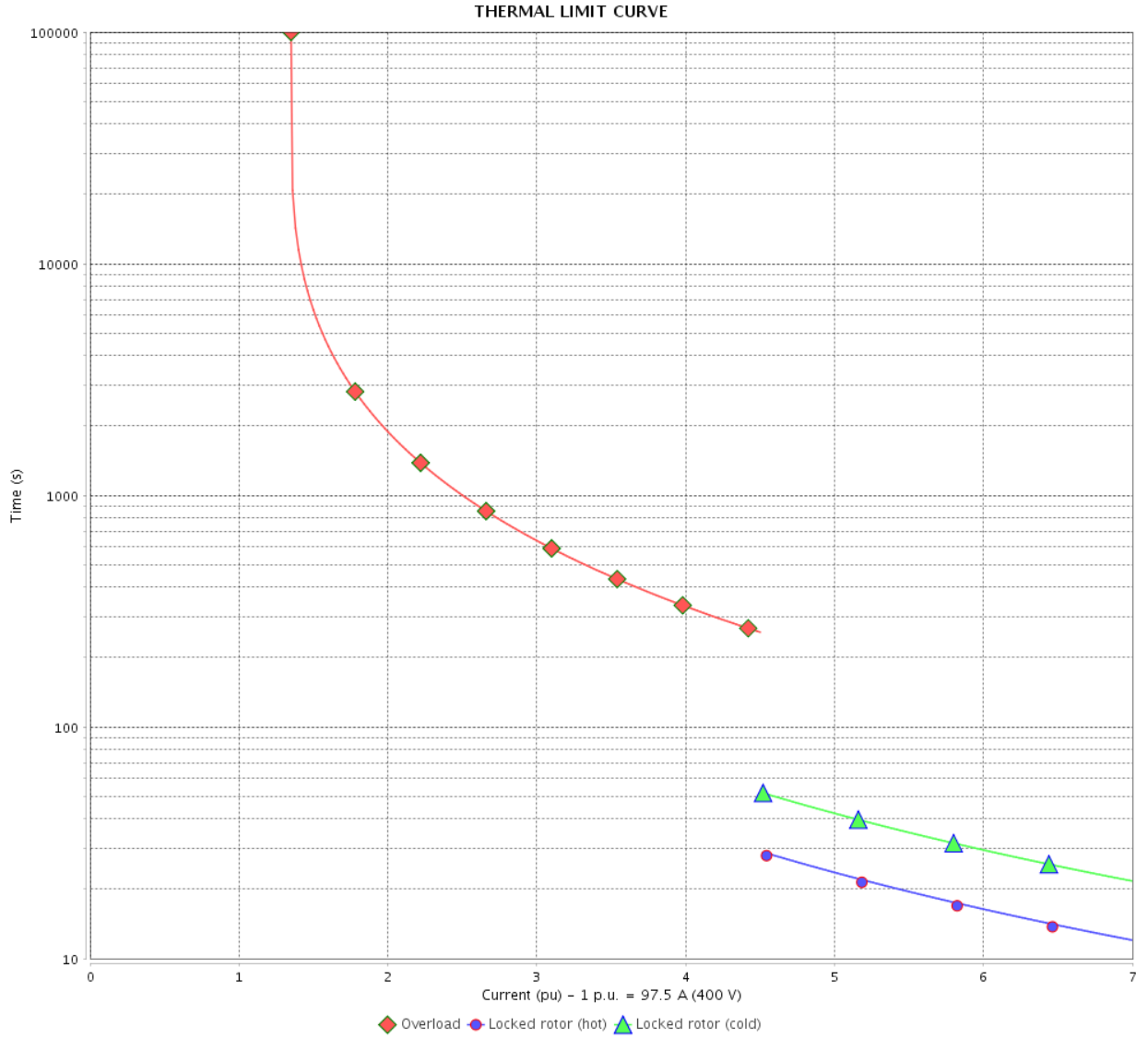
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_



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# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

Performance : 415 V 50 Hz 4P IE3

Rated current : 96.2 A  
LRC : 7.8  
Rated torque : 265 ft.lb  
Locked rotor torque : 270 %  
Breakdown torque : 300 %  
Rated speed : 1485 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

Heating constant

Cooling constant

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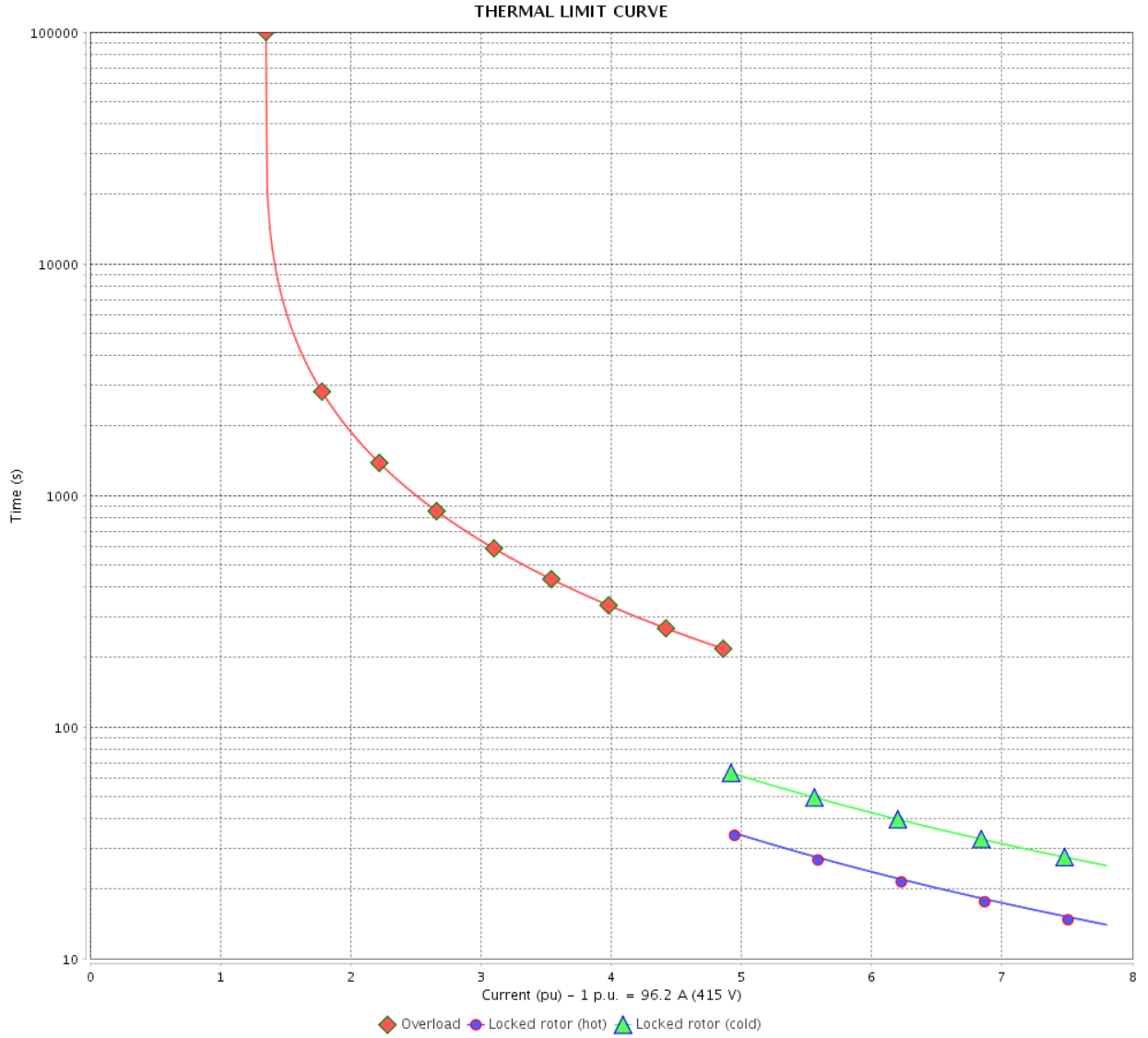


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



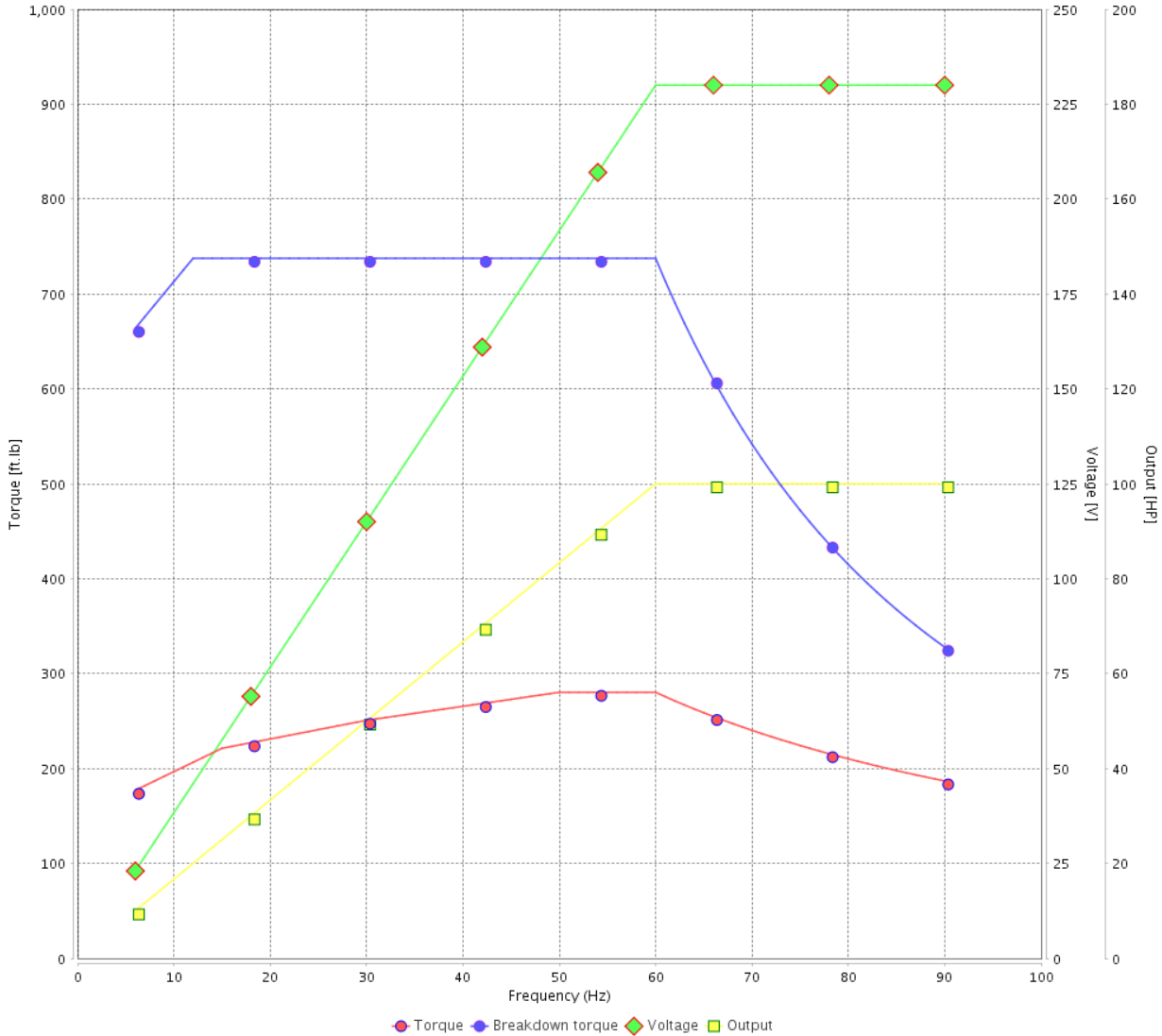
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40

VFD OPERATION CURVE



Performance : 230/460 V 60 Hz 4P

Rated current : 230/115 A  
LRC : 6.8  
Rated torque : 295 ft.lb  
Locked rotor torque : 200 %  
Breakdown torque : 250 %  
Rated speed : 1780 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.25  
Temperature rise : 80 K  
Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

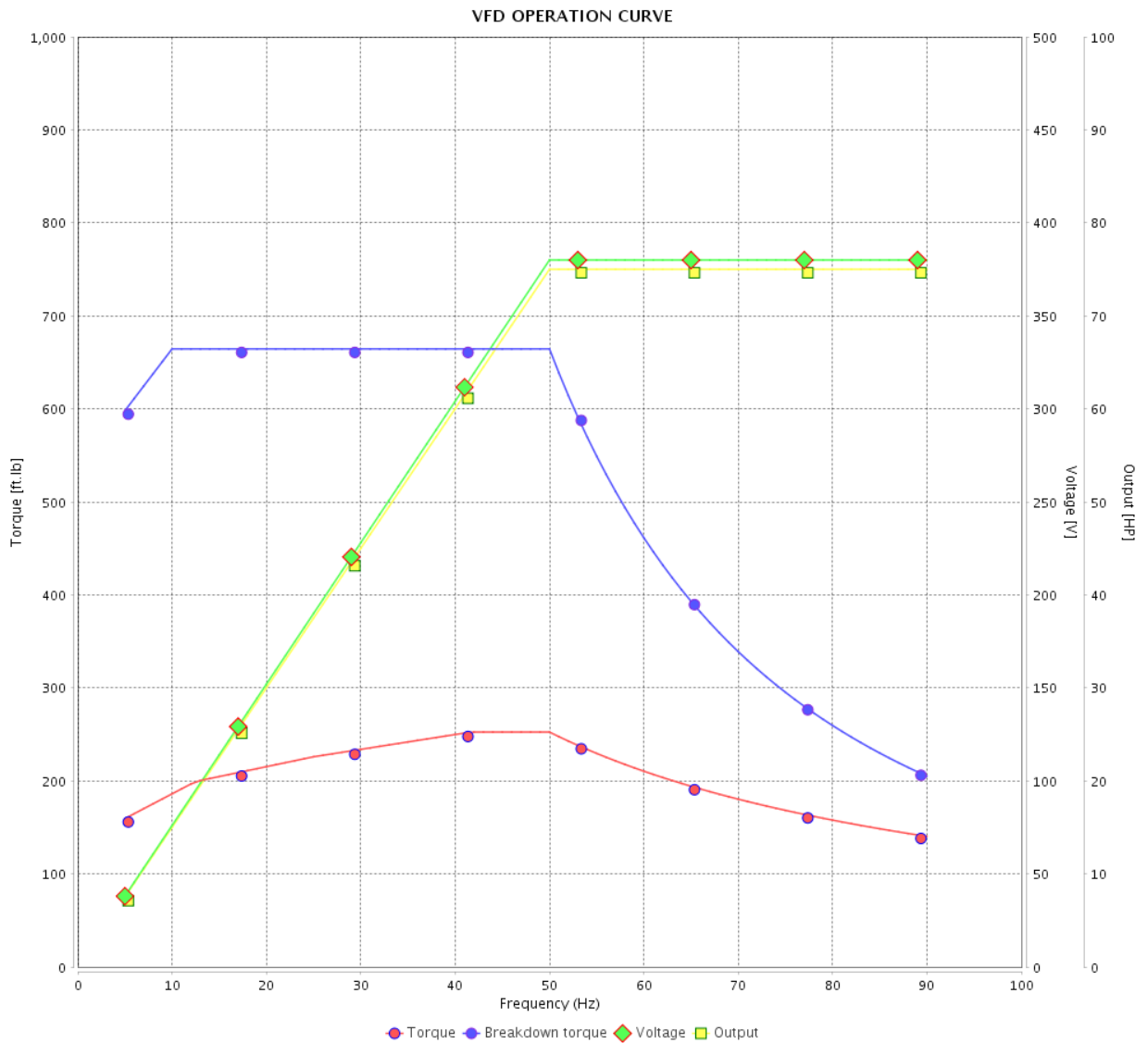


Customer :

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Three-Phase

Product code : 14272523

Catalog # : 10018OT3E404TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current : 103 A  
LRC : 7.2  
Rated torque : 266 ft.lb  
Locked rotor torque : 220 %  
Breakdown torque : 250 %  
Rated speed : 1482 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



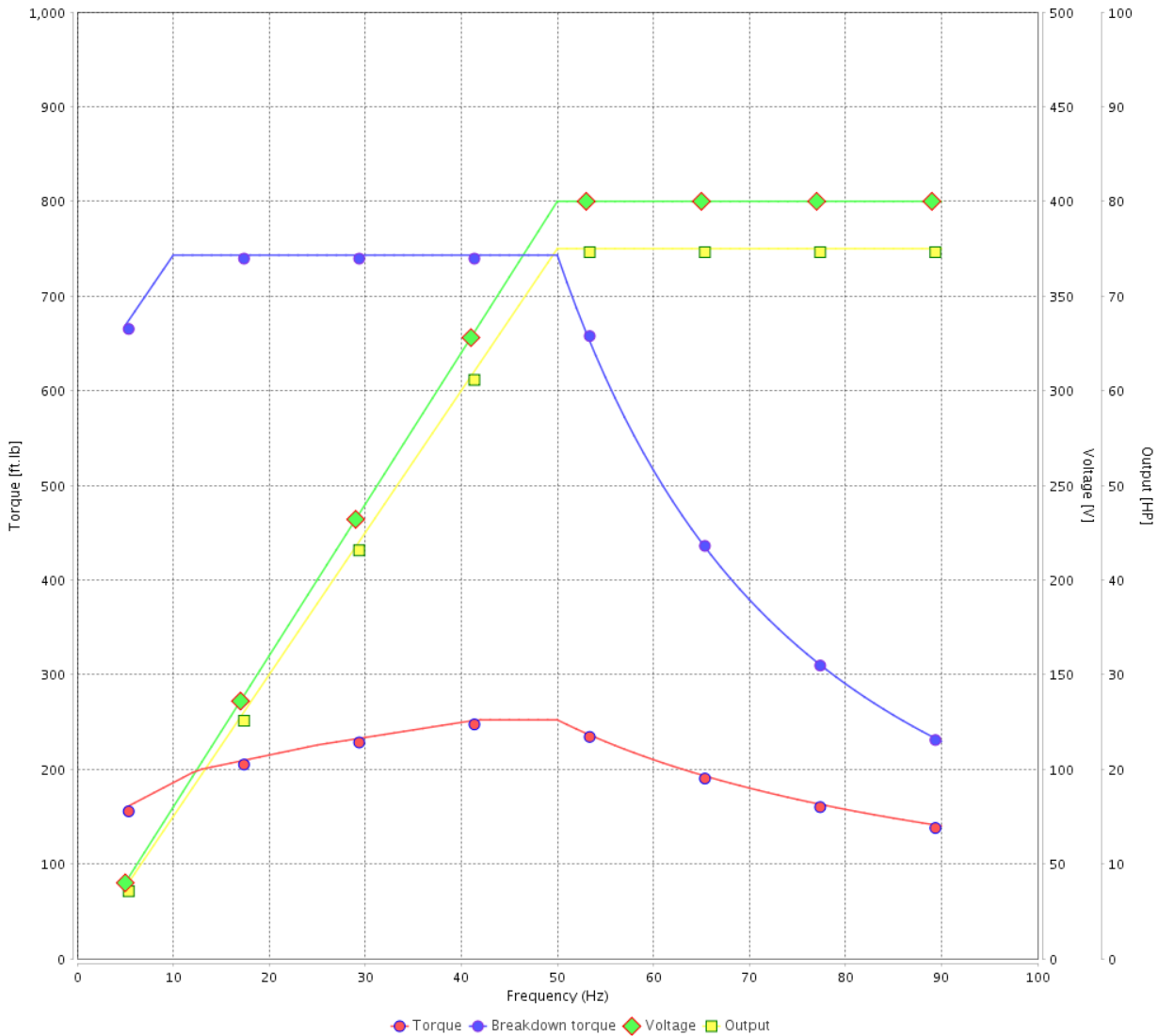
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Product code : 14272523

Catalog # : 10018OT3E404TC-W40

VFD OPERATION CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 97.5 A	Moment of inertia (J)	: 21.9 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 265 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 1484 rpm	Design	: B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

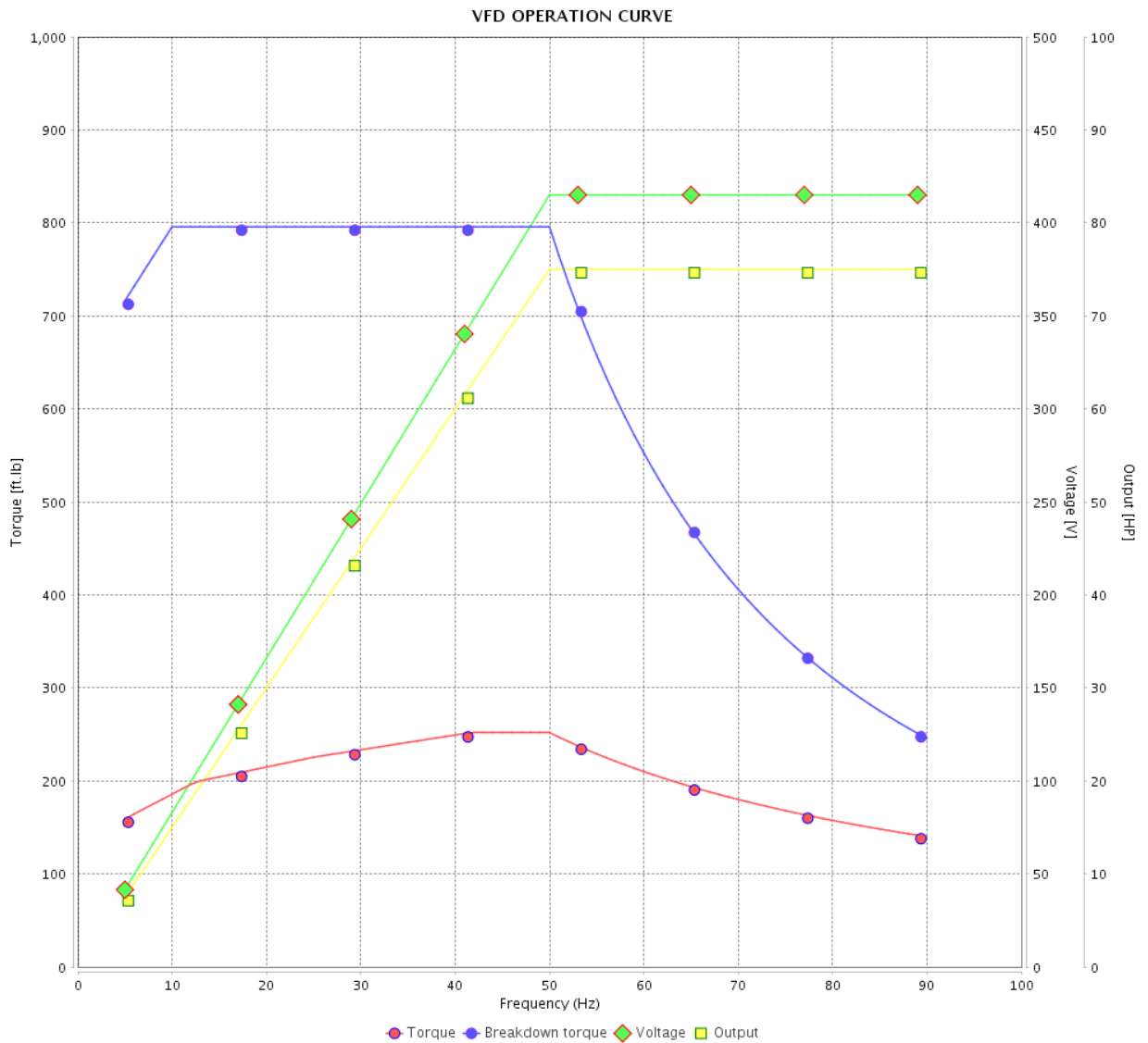


Customer :

Product line : W40 NEMA Premium Efficiency  
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Product code : 14272523

Catalog # : 10018OT3E404TC-W40

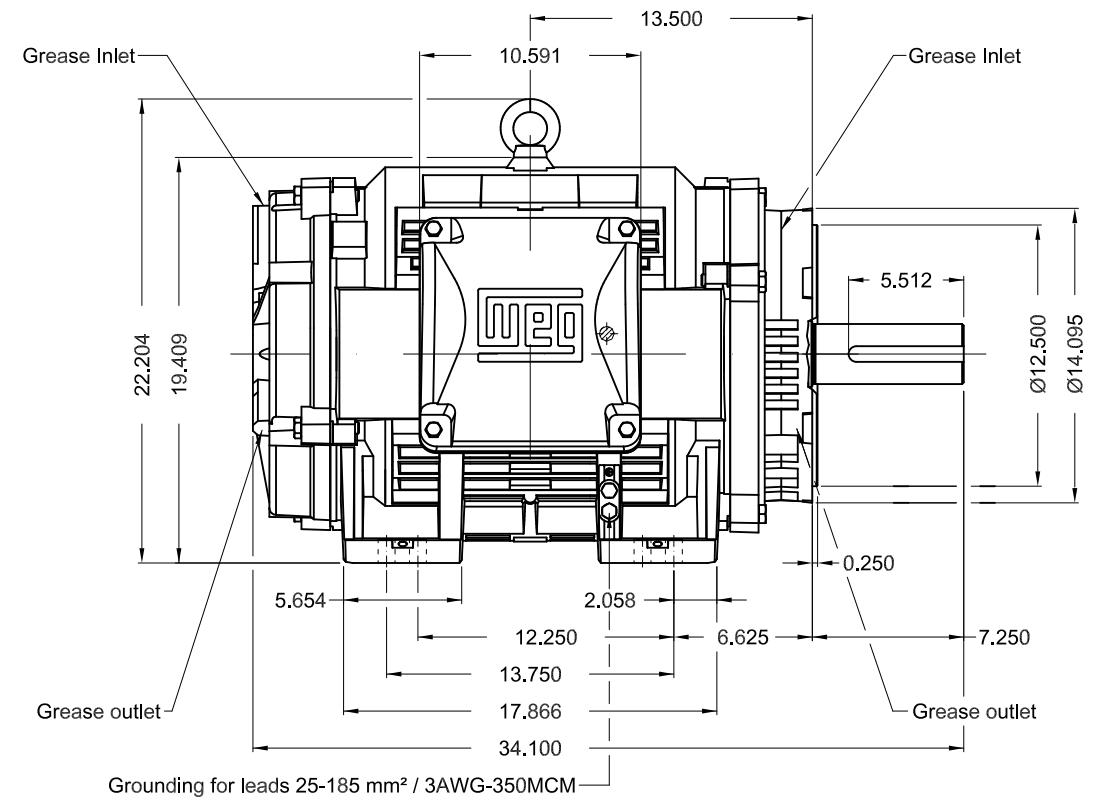
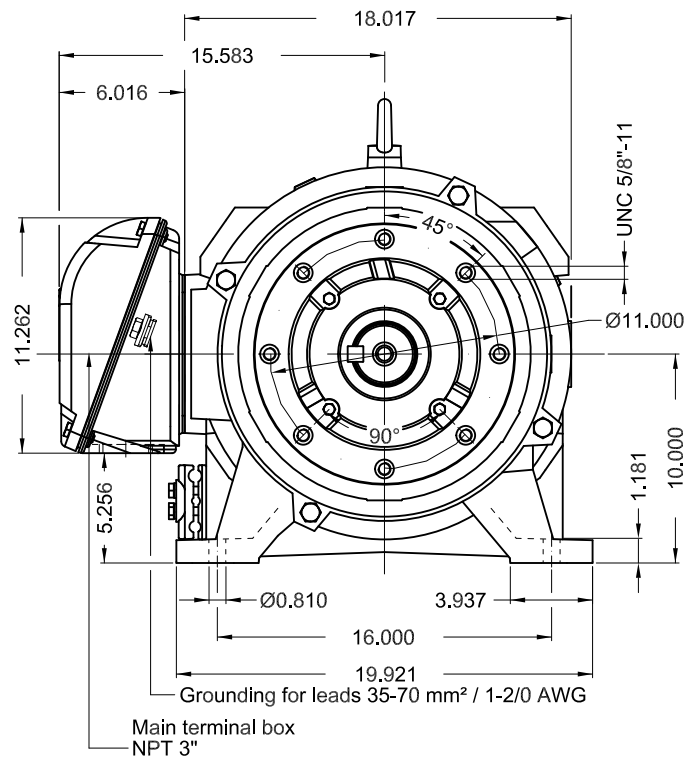


Performance : 415 V 50 Hz 4P IE3

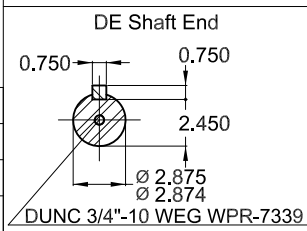
Rated current : 96.2 A  
LRC : 7.8  
Rated torque : 265 ft.lb  
Locked rotor torque : 270 %  
Breakdown torque : 300 %  
Rated speed : 1485 rpm

Moment of inertia (J) : 21.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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Color RAL 5009  
 Painting plan 203A  
 Mounting NEMA F-1  
 Mounting B34R(D)



100 HP 04 Poles 60 Hz A

1:9

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W40 PREM. EFF.					
CHECKED		FRAME 404/5TC IP23 ODP					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW  
 WDD



**WEG** **W40 NEMA**  
**CC029A Premium**  
*Inverter Duty Motor*



IEC 60034-1  
 MOD.T01#FOXON



For 60Hz use on PWM, VT 1000:1, CT 2:1, 1.0SF

MODEL 100180T3E404TC-W40  
 MADE IN BRAZIL  
 14272523

PH 3	FR 404/5TC	HP(kW) 100.0(75.0)	Hz 60				
V 230/460	A 230/115	RPM 1780	DES B				
NEMA NOM EFF 95.4 %	INS. CL. F ΔT 80 K	IP23	→ 6316-C3(34g) MOBIL POLYREX EM 20000 h → 6212-Z-C3(13g)				
ENCL ODP	DUTY CONT.	AMB. 40°C					
CODE G	PF 0.86	SF 1.25					
USABLE @208V 254 A	SF 1.15	SFA 292	ALT 1000 m.a.s.l. 981 Lbs				
75HP 55kW 50Hz 380V 103A 1482RPM SF1.00 EFF 94.7% (IE3)							