

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: W40 NEMA Premium Efficiency Three-Phase	Product code :	14272547		
		Catalog # :	20018OT3G445TC-W40		
Frame	: 444/5TC	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>	: 1510 lb		
Protection degree	: IP23	Moment of inertia (J)	: 46.4 sq.ft.lb		
Design	: B				
Output [HP]	200	175	175	175	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	234	247	237	234	
L. R. Amperes [A]	1544	1630	1635	1568	
LRC [A]	6.6x(Code G)	6.6x(Code G)	6.9x(Code H)	6.7x(Code H)	
No load current [A]	86.5	85.2	93.6	101	
Rated speed [RPM]	1783	1480	1480	1485	
Slip [%]	0.94	1.33	1.33	1.00	
Rated torque [ft.lb]	589	621	621	619	
Locked rotor torque [%]	210	190	210	229	
Breakdown torque [%]	250	220	250	270	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	25s (cold) 14s (hot)	21s (cold) 12s (hot)	23s (cold) 13s (hot)	25s (cold) 14s (hot)	
Noise level <sup>2</sup>	78.0 dB(A)				
Efficiency (%)	25%	95.3	95.1	95.3	95.1
	50%	95.4	95.2	95.4	95.2
	75%	95.8	95.6	95.6	95.6
	100%	95.8	95.6	95.6	95.6
Power Factor	25%	0.46	0.48	0.44	0.41
	50%	0.72	0.74	0.70	0.67
	75%	0.80	0.82	0.80	0.77
	100%	0.84	0.85	0.84	0.82
Bearing type	: <u>Drive end</u> 6319 C3 <u>Non drive end</u> 6314 C3	Foundation loads			
Sealing	: Without Without	Max. traction	: 3699 lb		
	: Bearing Seal Bearing Seal	Max. compression	: 5209 lb		
Lubrication interval	: 20000 h 20000 h				
Lubricant amount	: 45 g 27 g				
Lubricant type	: Mobil Polyrex EM				
Notes					
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



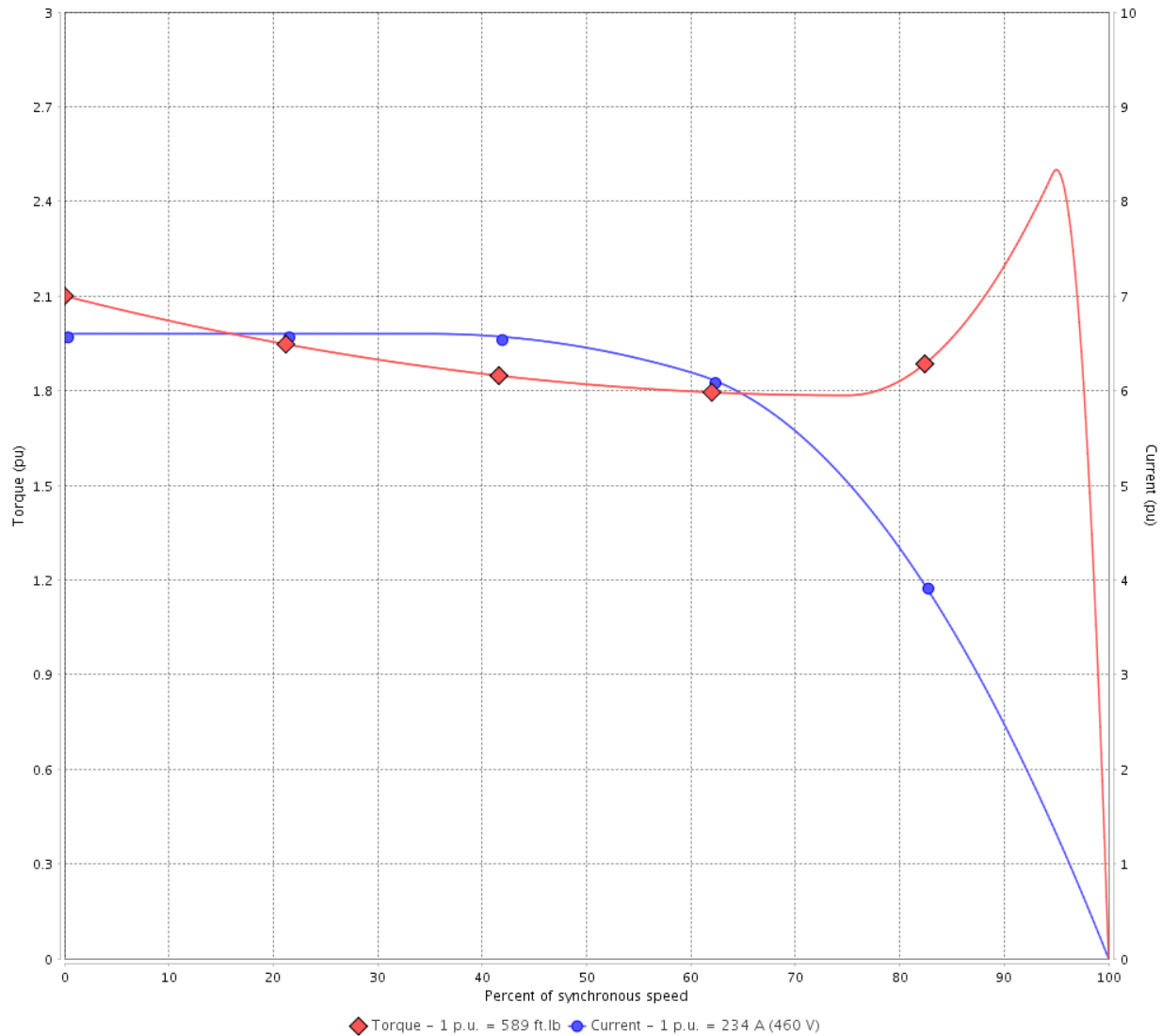
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272547

Catalog # : 20018OT3G445TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

Rated current	: 234 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 589 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1783 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



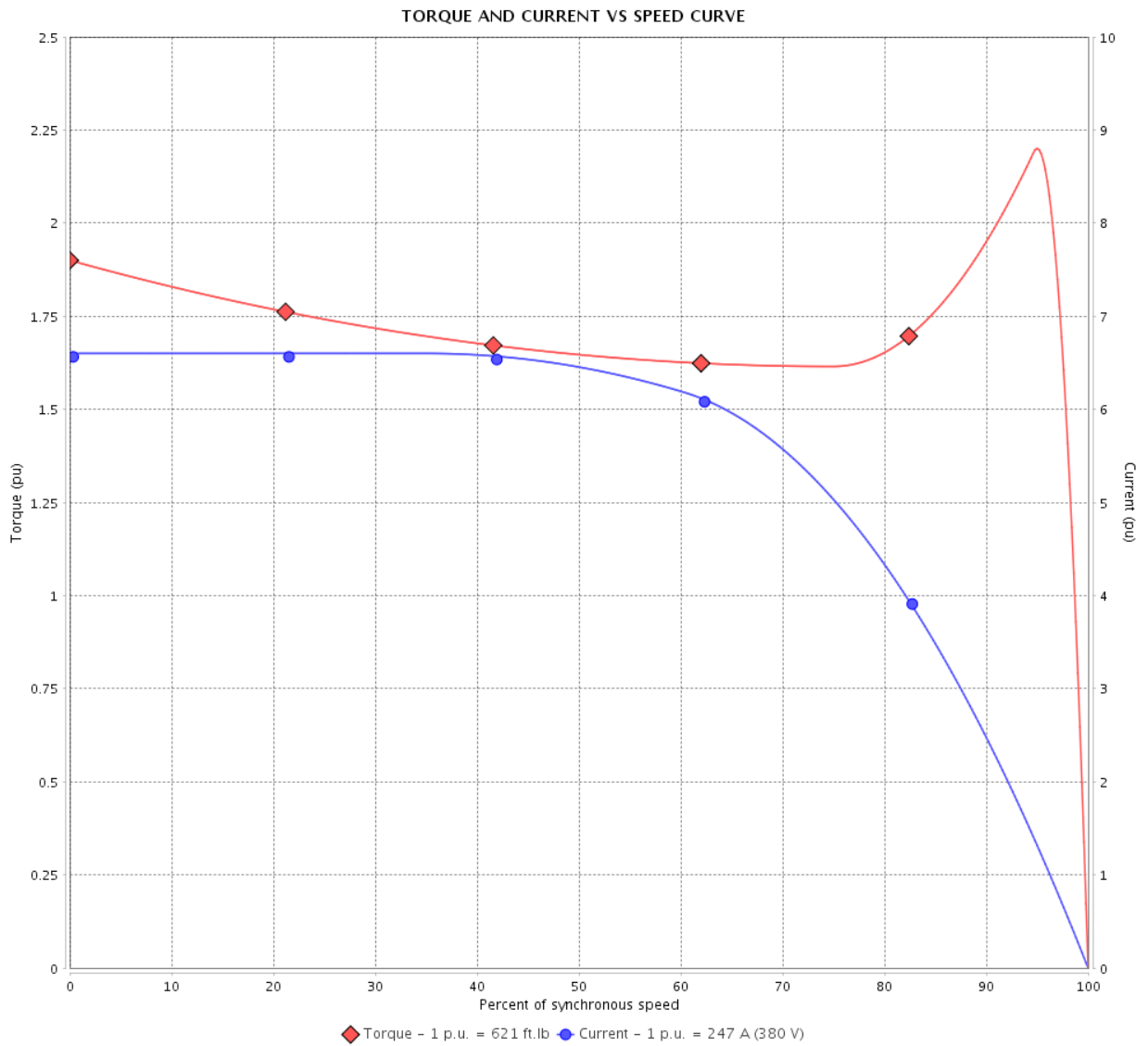
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272547

Catalog # : 20018OT3G445TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current	: 247 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 621 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 1480 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



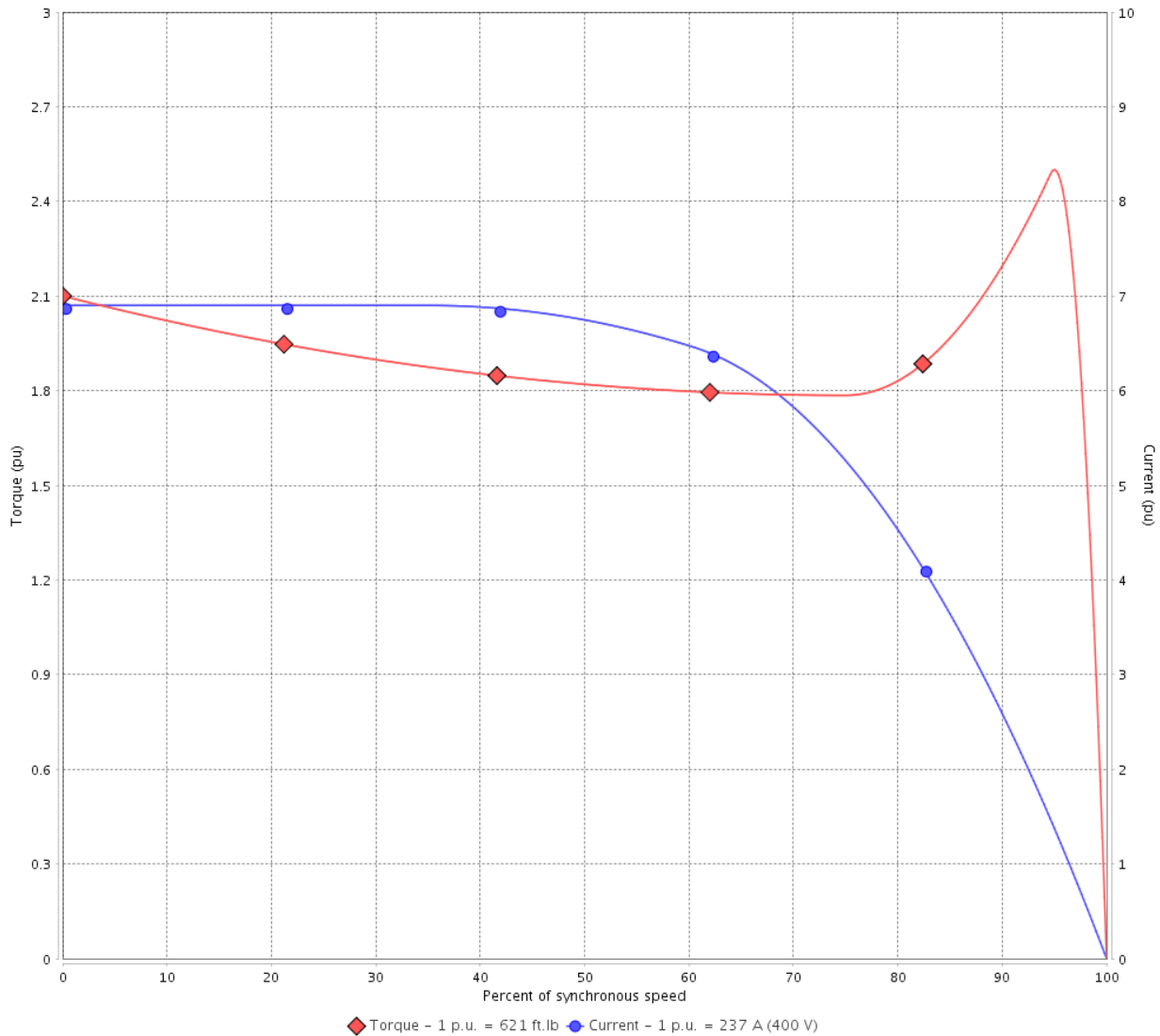
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272547

Catalog # : 20018OT3G445TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 237 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.9	Duty cycle	: Cont.(S1)
Rated torque	: 621 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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

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# TORQUE AND CURRENT VS SPEED CURVE



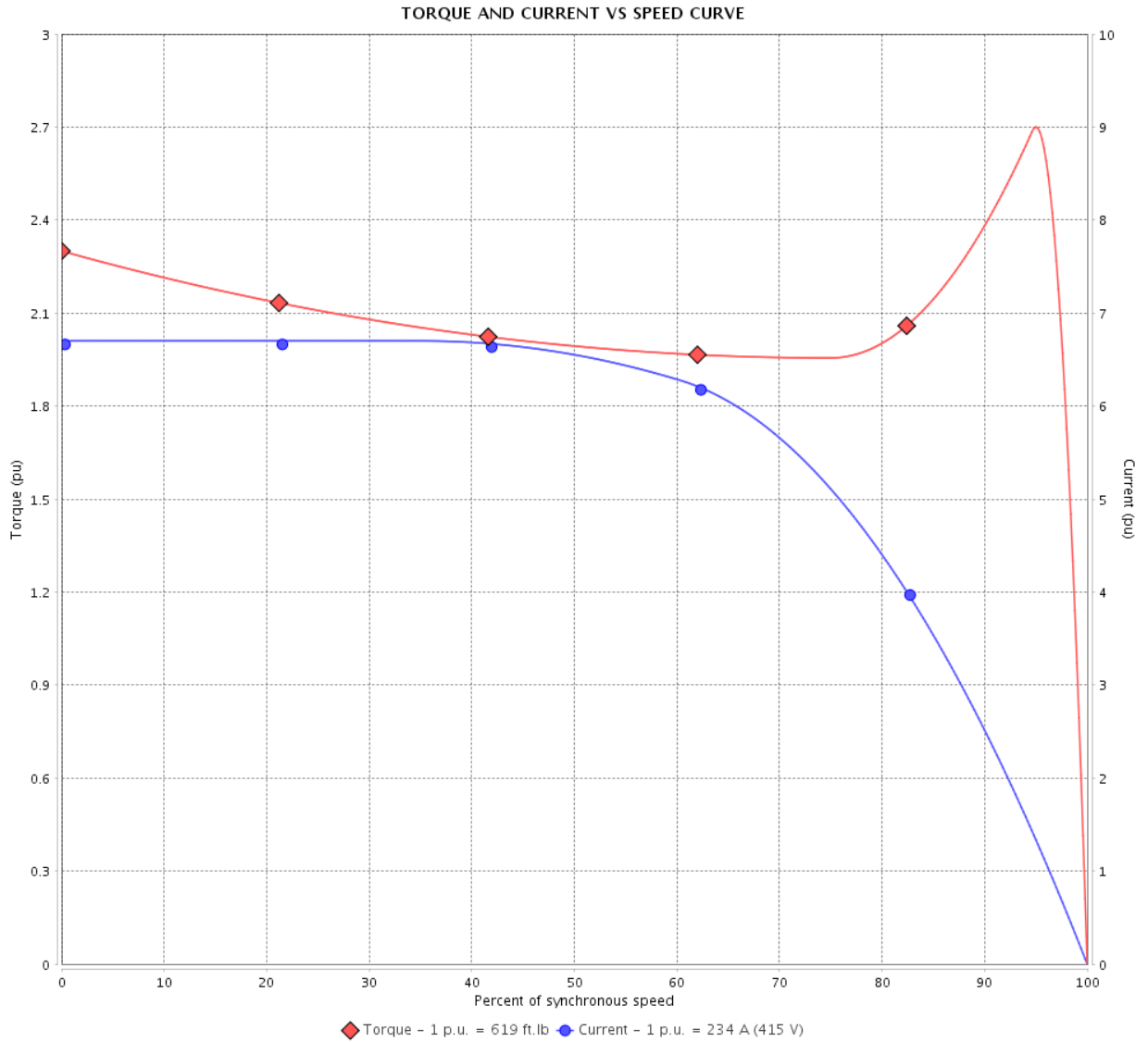
## Three Phase Induction Motor - Squirrel Cage

Customer :

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Product code : 14272547

Catalog # : 20018OT3G445TC-W40



Performance : 415 V 50 Hz 4P IE3

Rated current	: 234 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 619 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	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

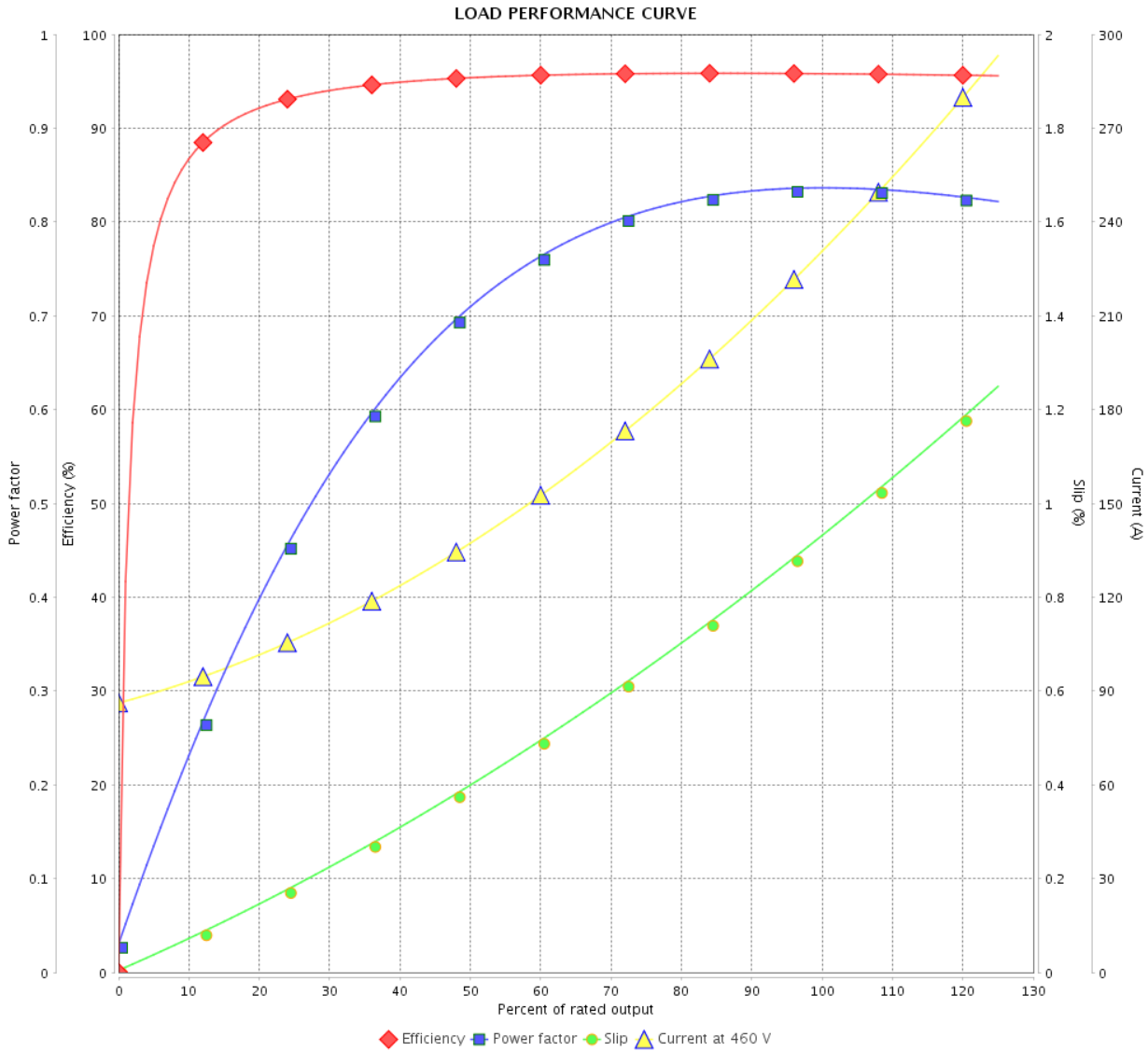


Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272547

Catalog # : 20018OT3G445TC-W40



Performance : 460 V 60 Hz 4P

Rated current	: 234 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 589 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1783 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

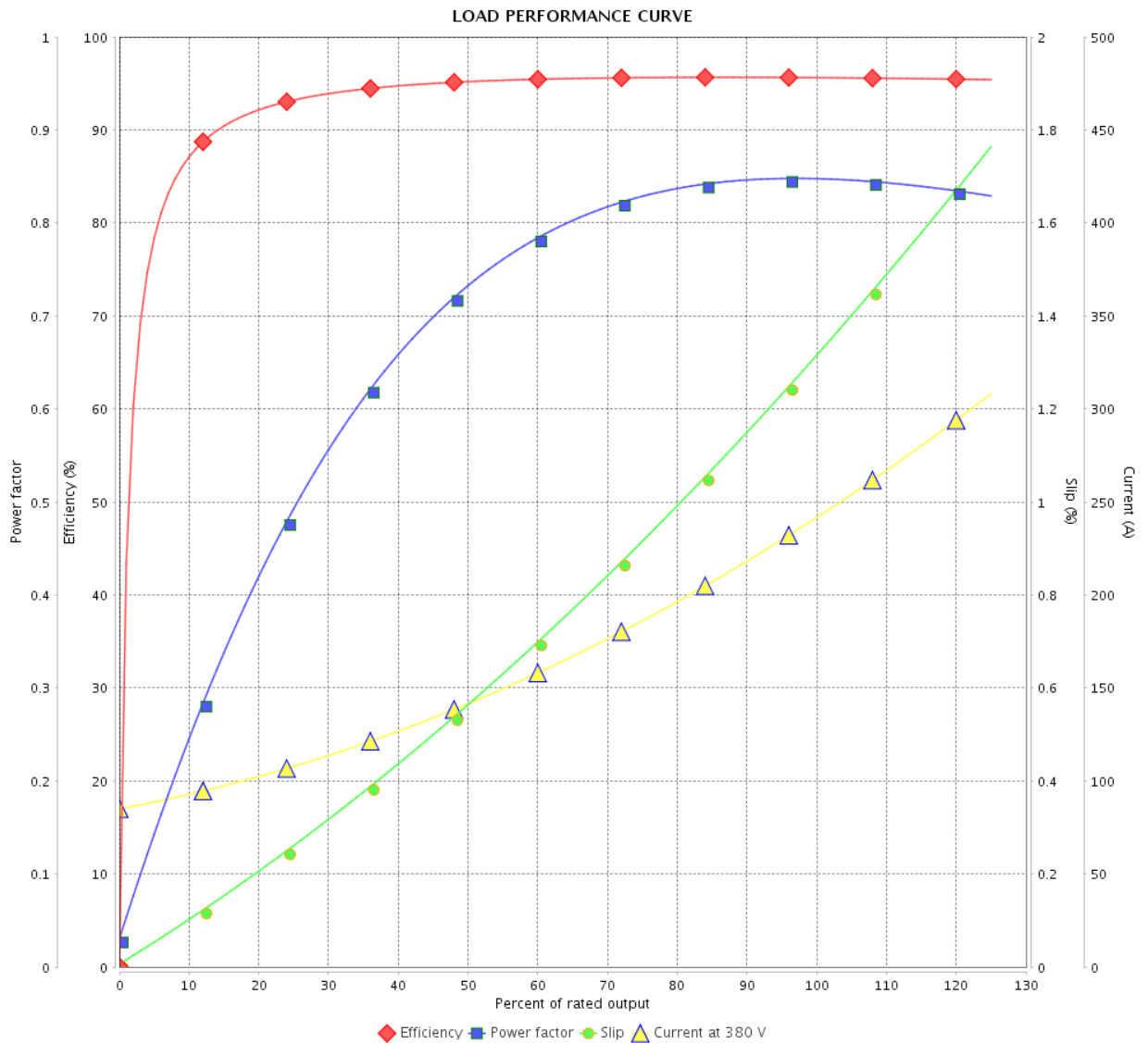


Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14272547

Catalog # : 20018OT3G445TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current : 247 A  
 LRC : 6.6  
 Rated torque : 621 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 220 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 46.4 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

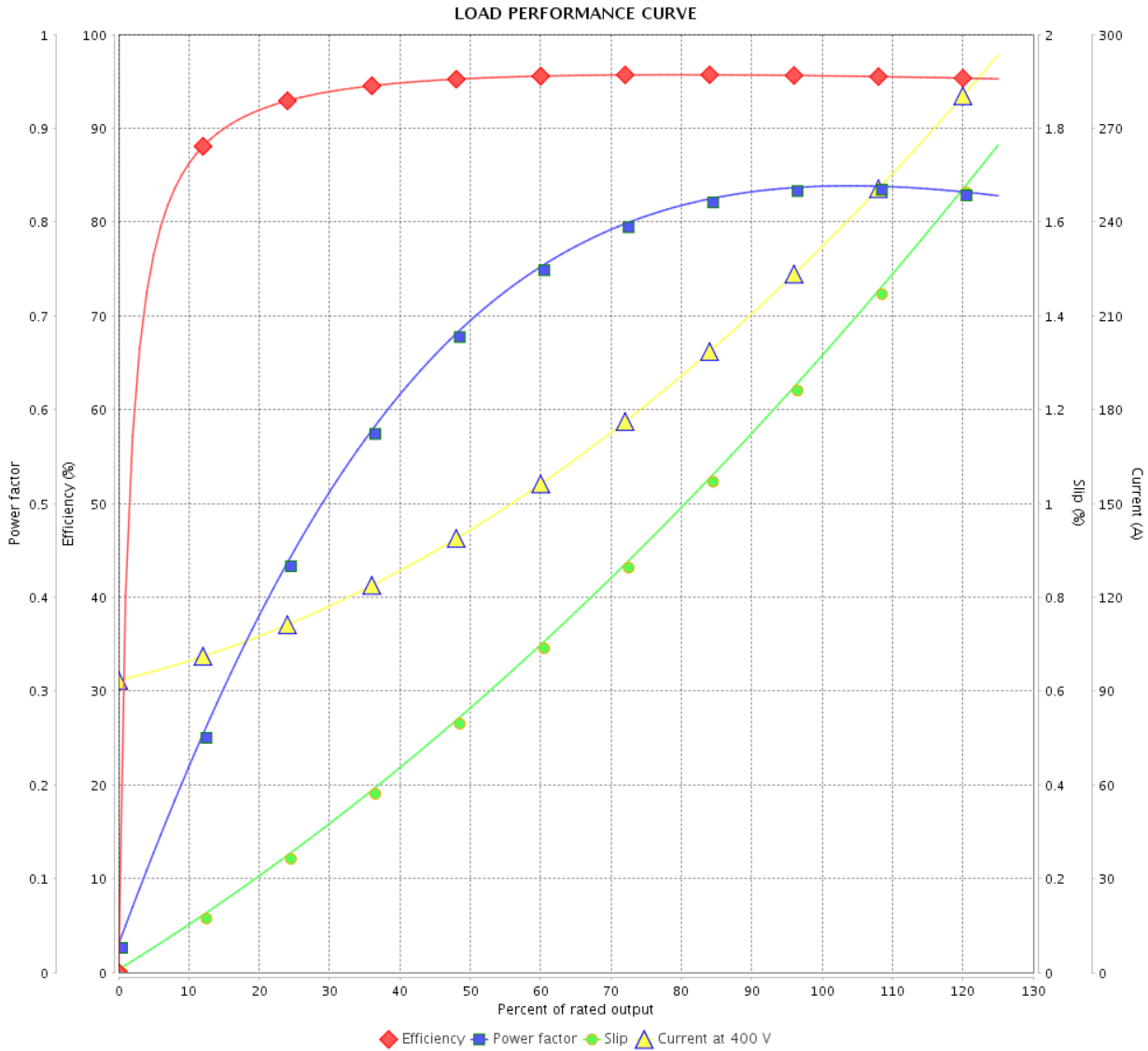


Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272547

Catalog # : 20018OT3G445TC-W40



Performance : 400 V 50 Hz 4P IE3

Rated current : 237 A  
 LRC : 6.9  
 Rated torque : 621 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 250 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 46.4 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

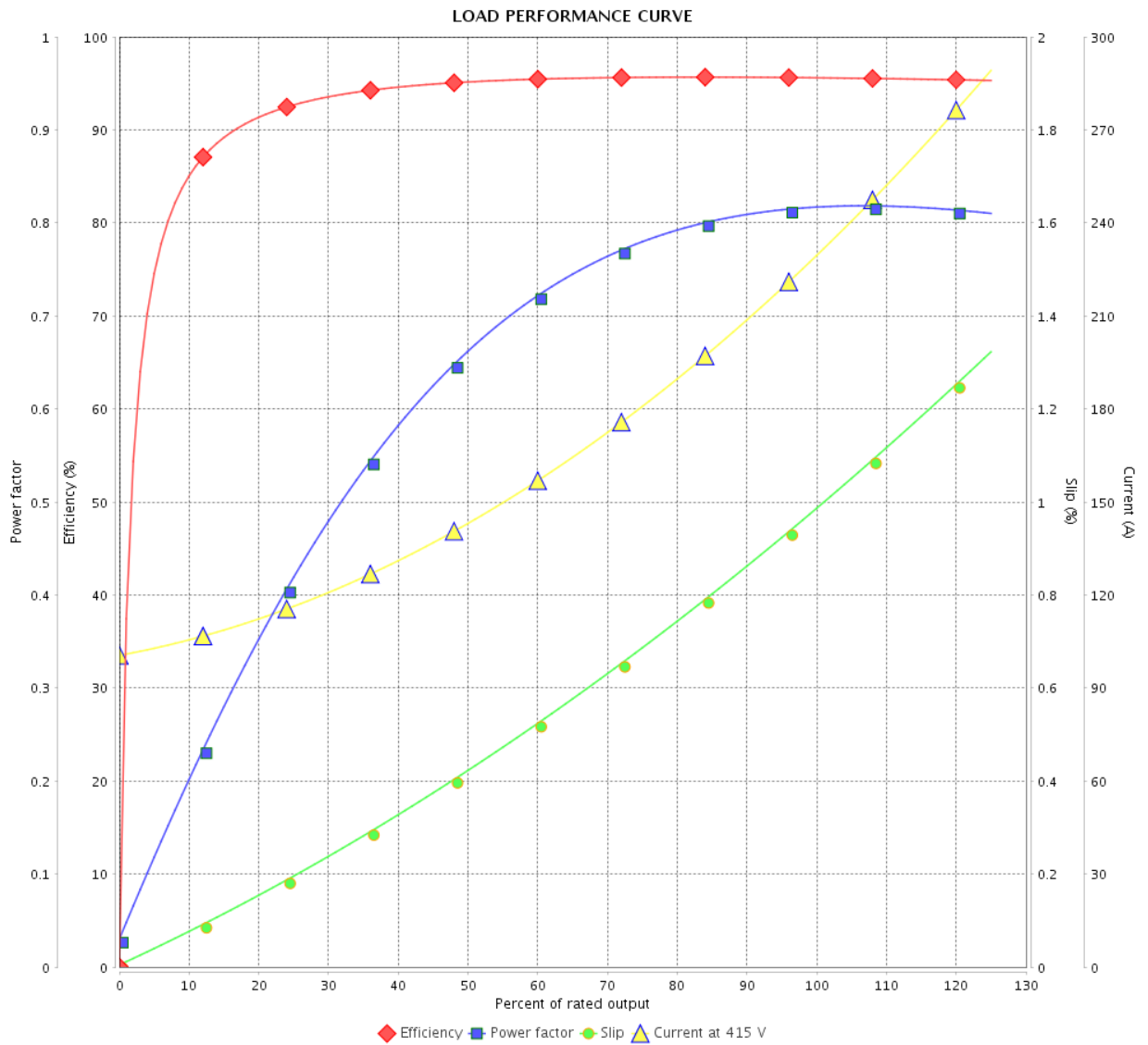


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Product code : 14272547

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 LRC : 6.7  
 Rated torque : 619 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 46.4 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



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LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 589 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1783 rpm	Design	: B

Heating constant

Cooling constant

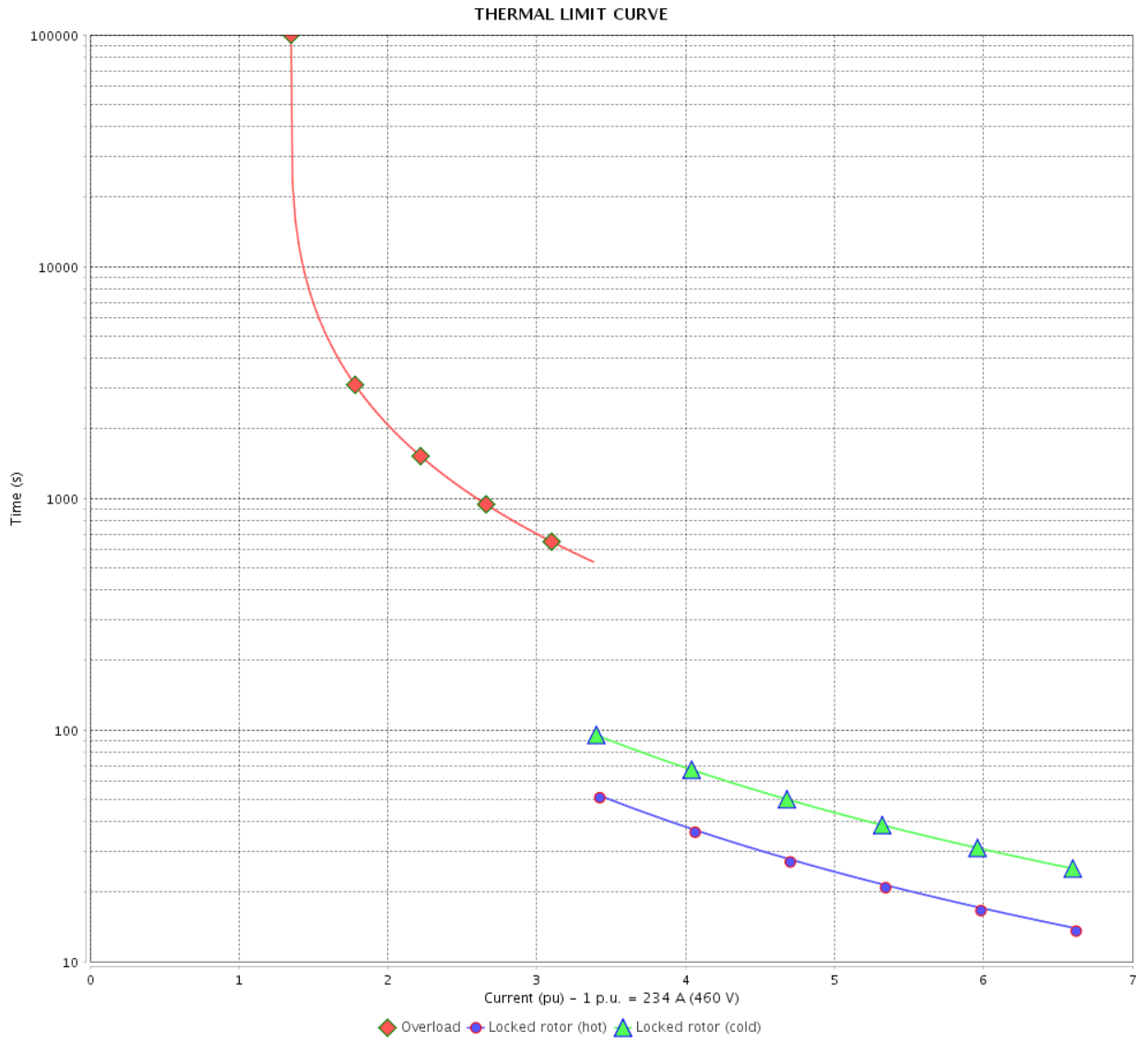
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Date				

# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Product line : W40 NEMA Premium Efficiency  
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Product code : 14272547

Catalog # : 20018OT3G445TC-W40

Performance : 380 V 50 Hz 4P IE3

Rated current	: 247 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.6	Duty cycle	: Cont.(S1)
Rated torque	: 621 ft.lb	Insulation class	: F
Locked rotor torque	: 190 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Heating constant

Cooling constant

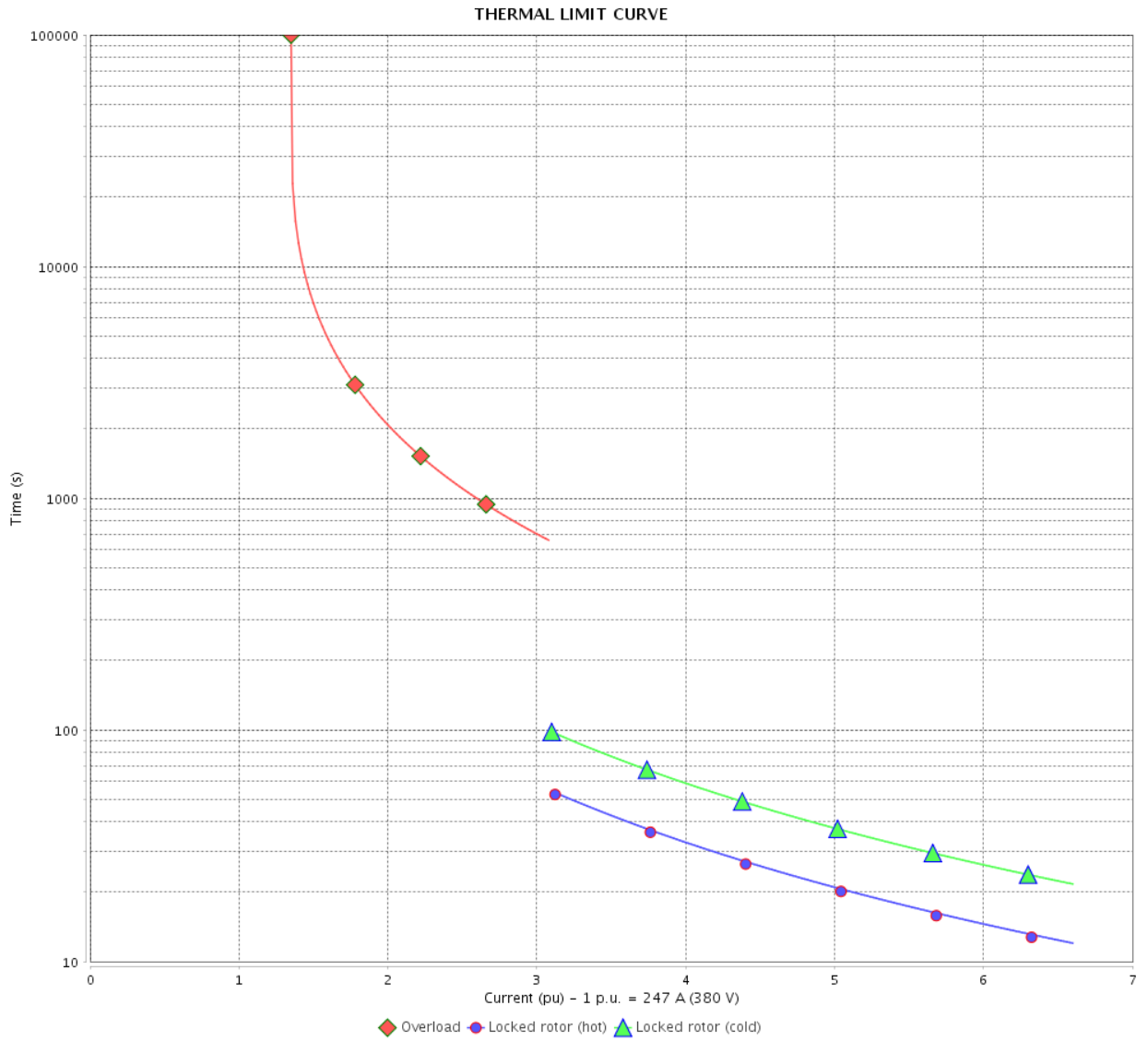
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# THERMAL LIMIT CURVE

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 : 14272547

Catalog # : 20018OT3G445TC-W40

Performance : 400 V 50 Hz 4P IE3

Rated current	: 237 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.9	Duty cycle	: Cont.(S1)
Rated torque	: 621 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.00
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

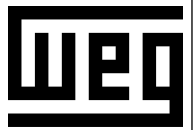
Heating constant

Cooling constant

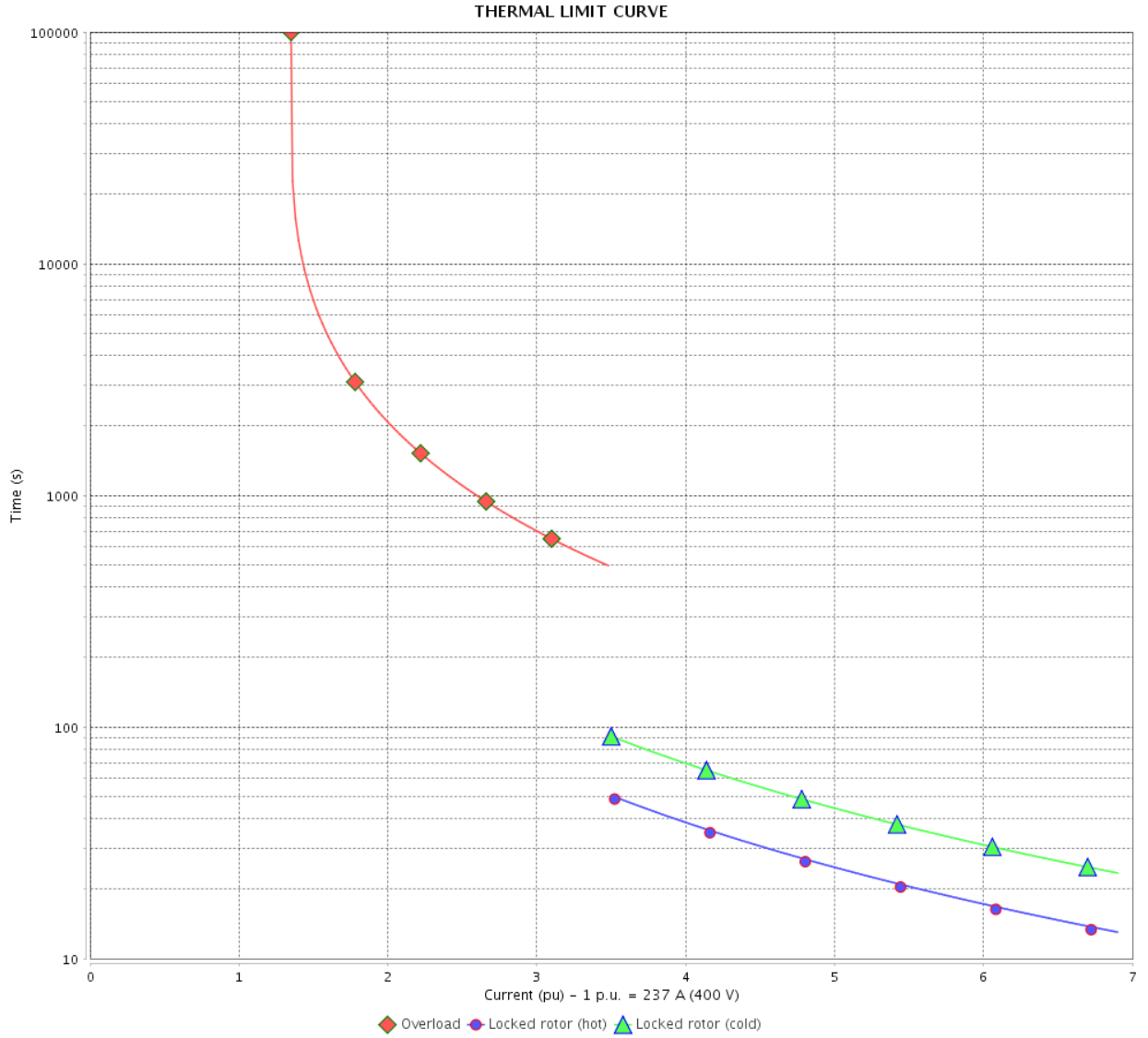
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# THERMAL LIMIT CURVE

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 : 14272547

Catalog # : 20018OT3G445TC-W40

Performance : 415 V 50 Hz 4P IE3

Rated current	: 234 A	Moment of inertia (J)	: 46.4 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 619 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

Heating constant

Cooling constant

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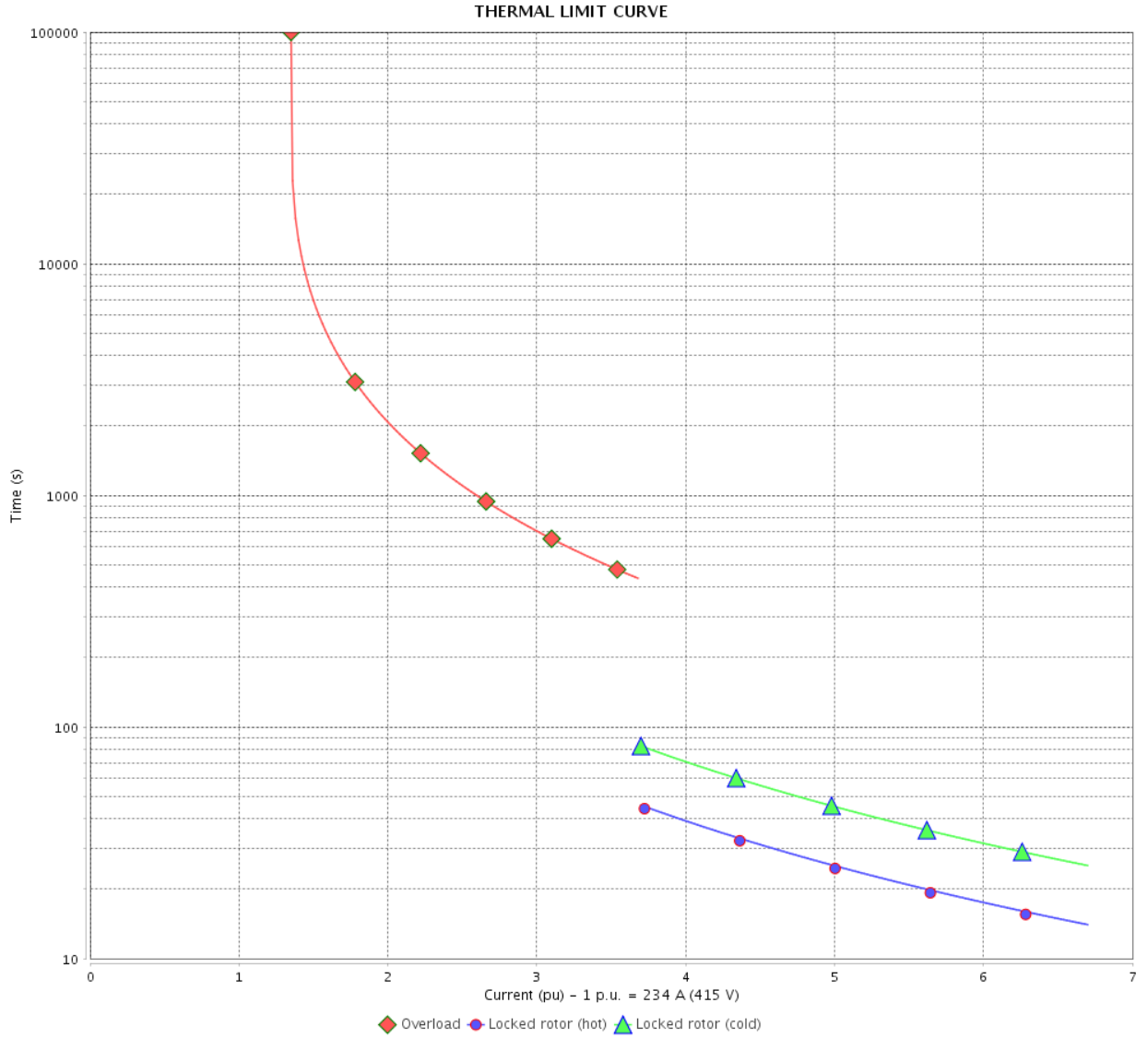


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



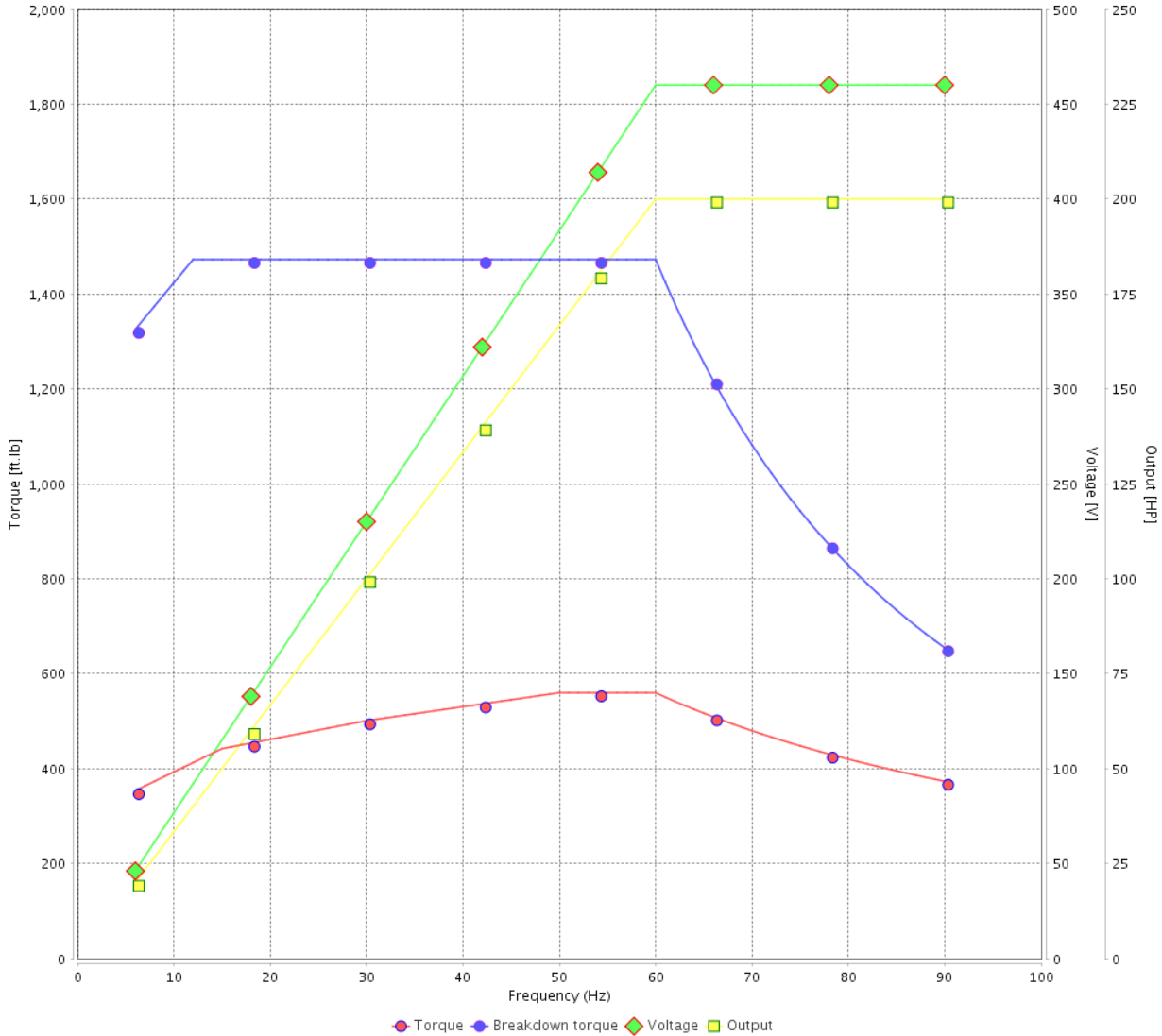
Customer :

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Product code : 14272547

Catalog # : 20018OT3G445TC-W40

VFD OPERATION CURVE



Performance : 460 V 60 Hz 4P

Rated current : 234 A  
LRC : 6.6  
Rated torque : 589 ft.lb  
Locked rotor torque : 210 %  
Breakdown torque : 250 %  
Rated speed : 1783 rpm

Moment of inertia (J) : 46.4 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.15  
Temperature rise : 80 K  
Design : B

Rev.	Changes Summary	Performed	Checked	Date
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

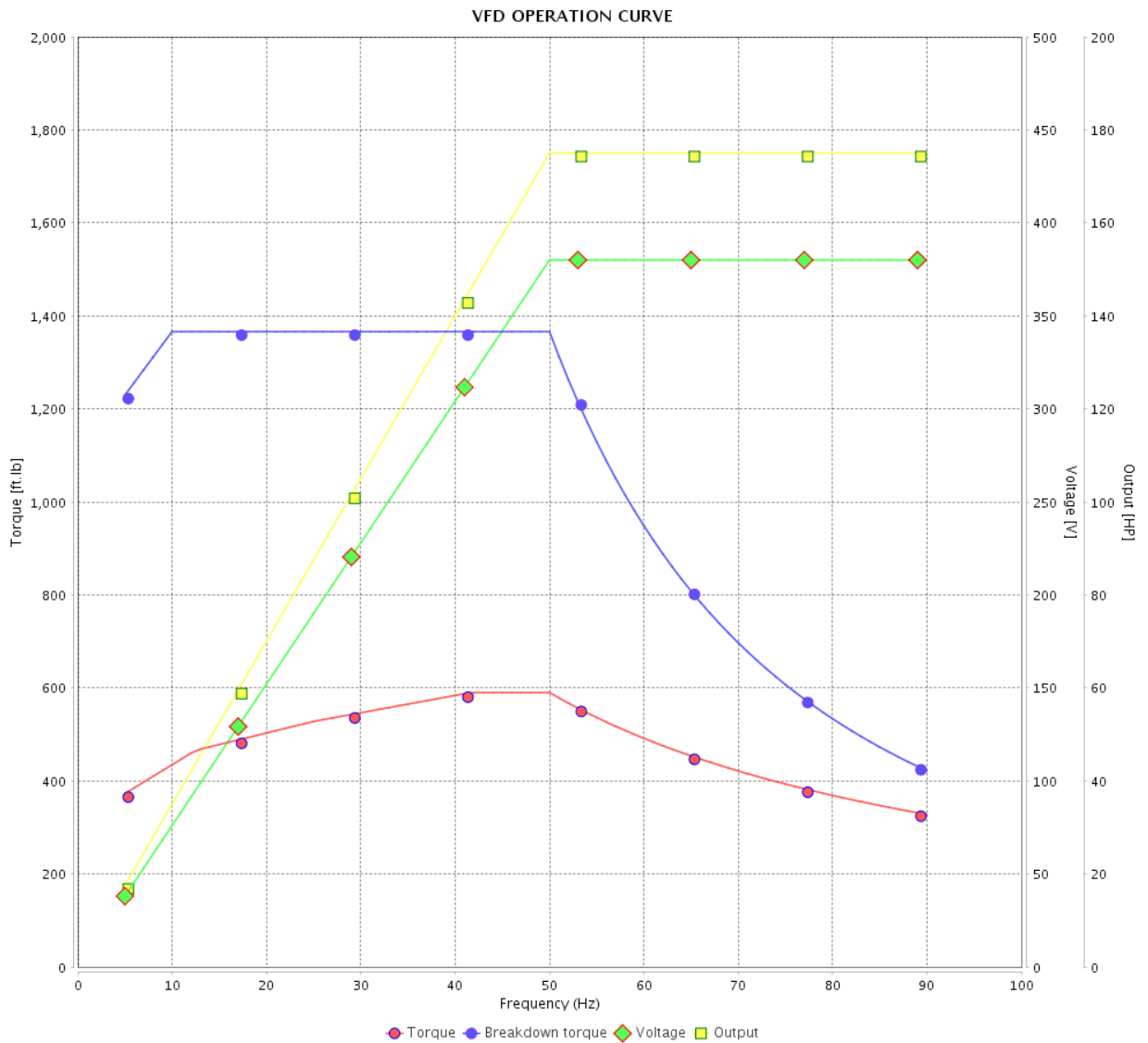


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Product code : 14272547

Catalog # : 20018OT3G445TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current : 247 A  
 LRC : 6.6  
 Rated torque : 621 ft.lb  
 Locked rotor torque : 190 %  
 Breakdown torque : 220 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 46.4 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

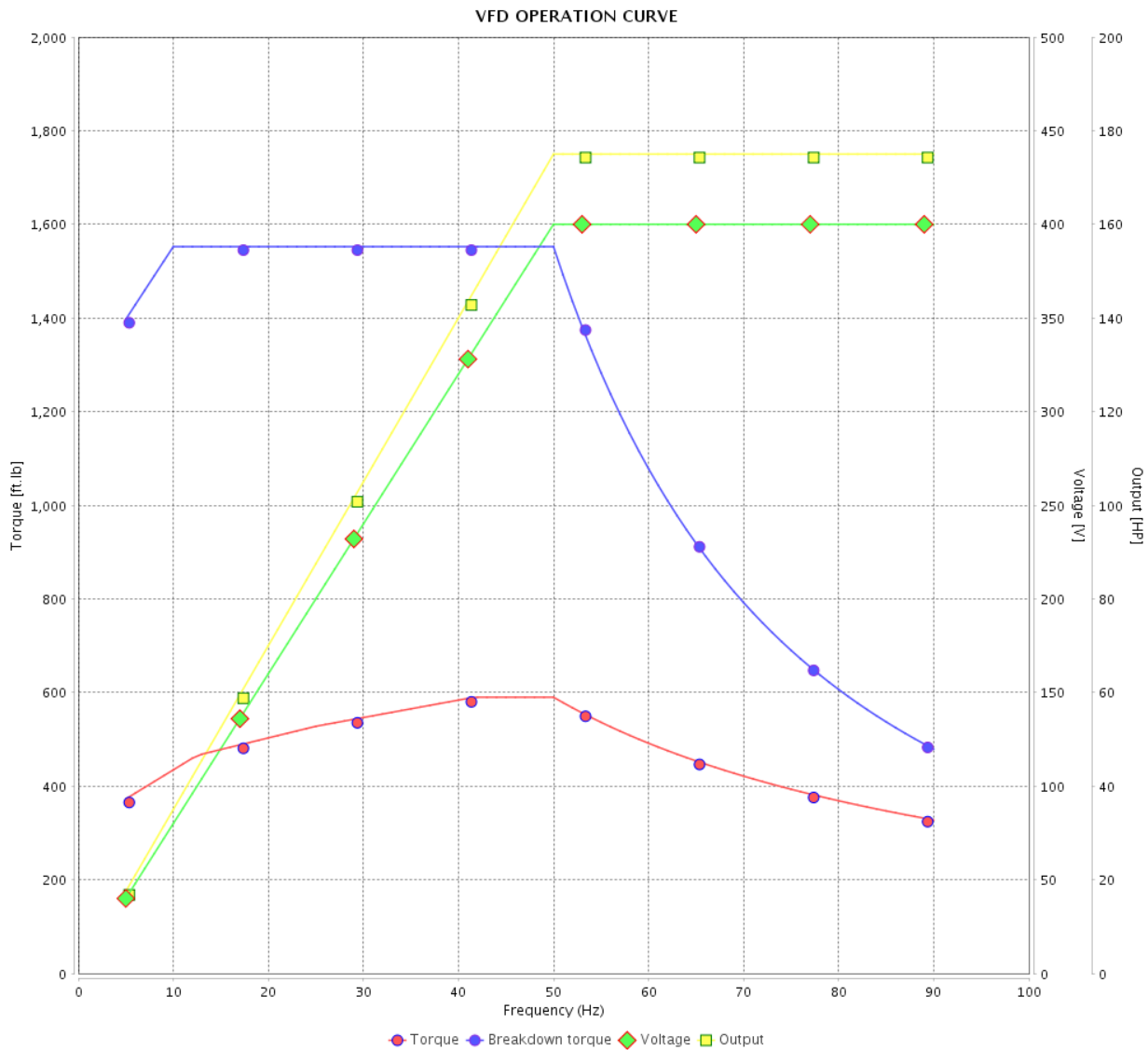


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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

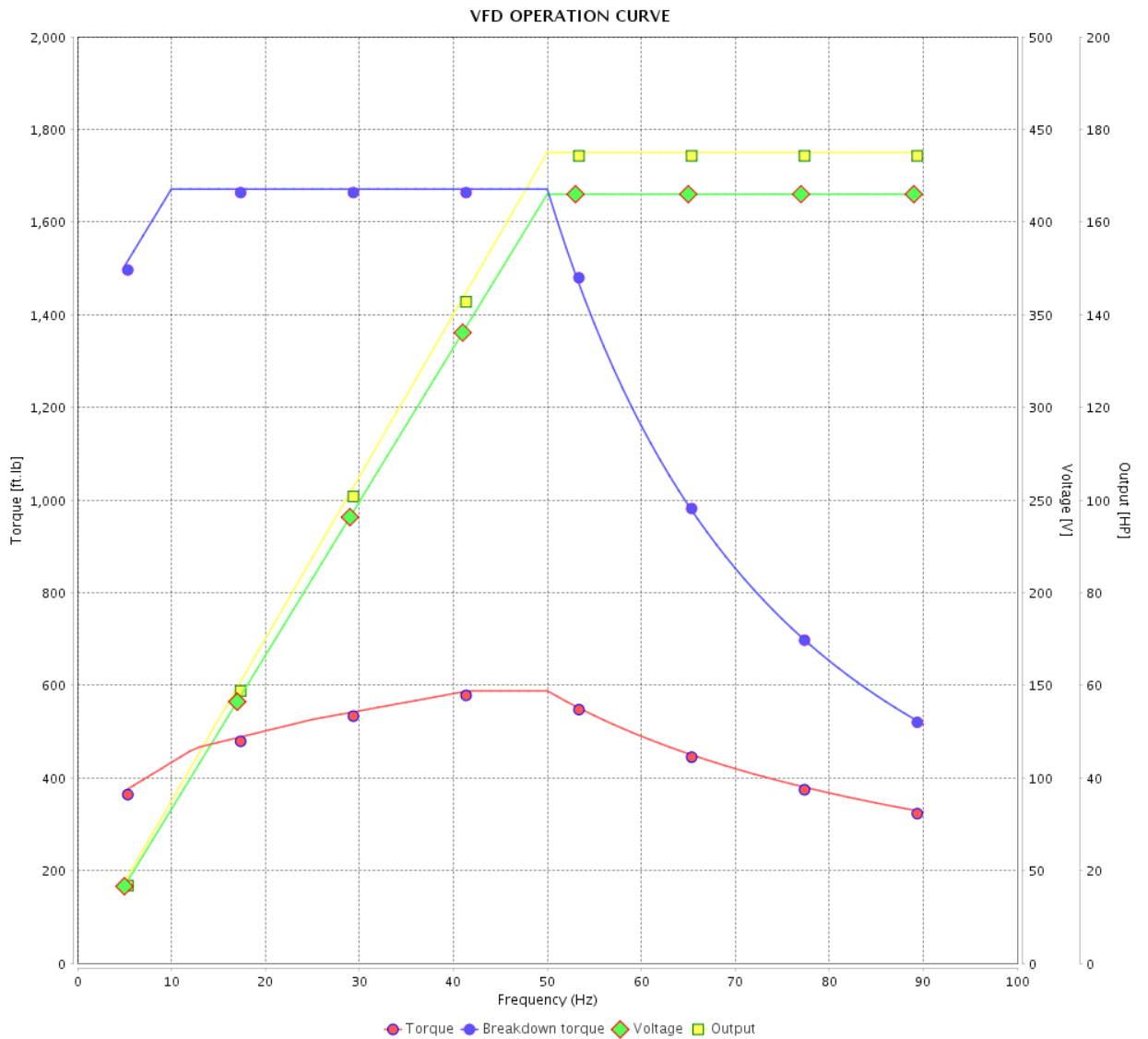


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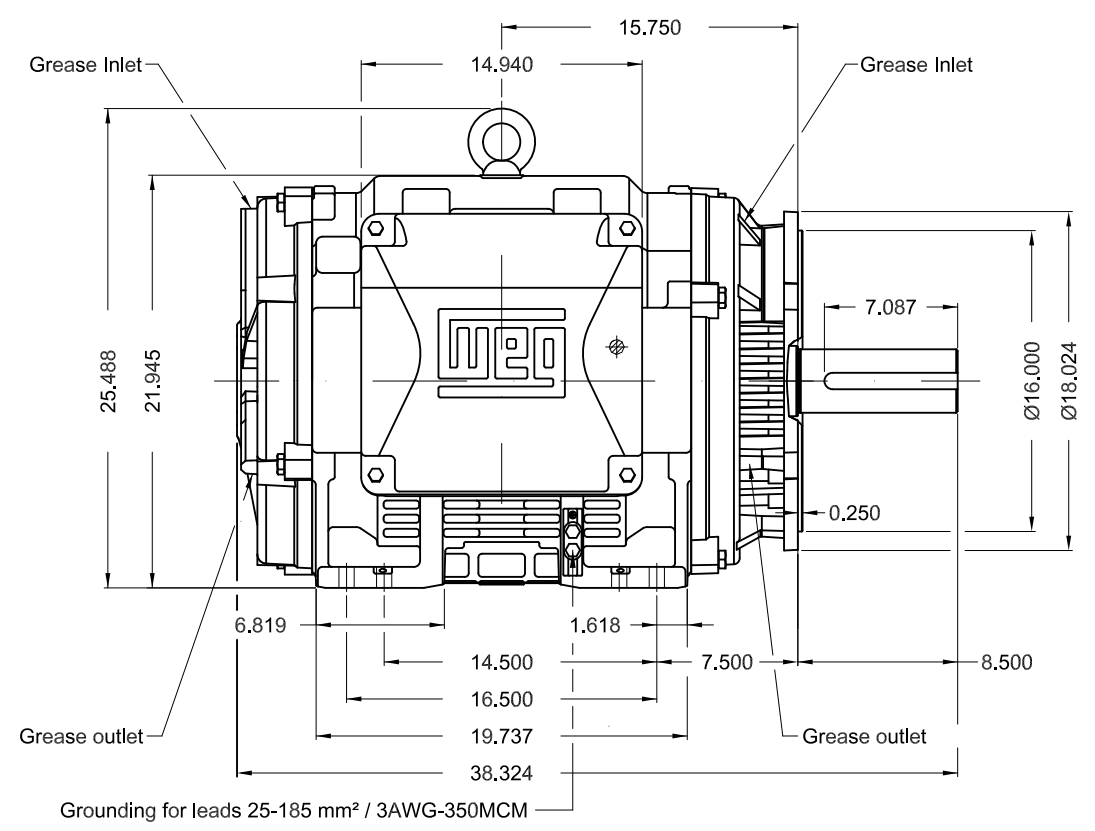
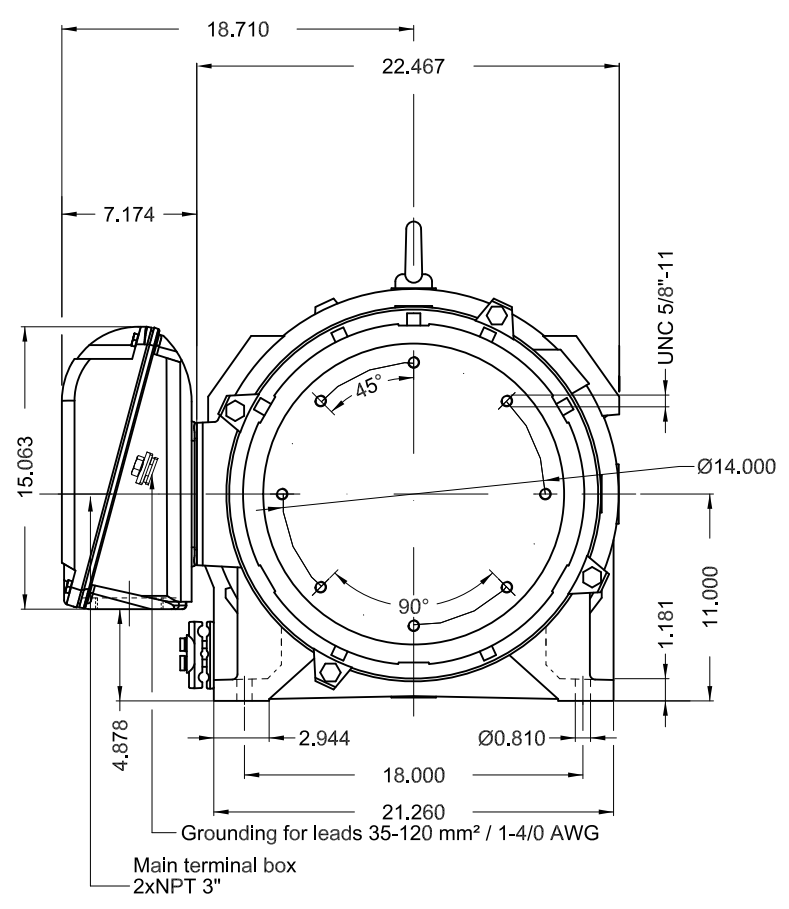


Performance : 415 V 50 Hz 4P IE3

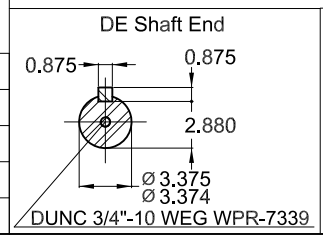
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Locked rotor torque : 229 %  
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Moment of inertia (J) : 46.4 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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C3 NDE bearing
Color RAL 5009
Painting plan 203A
Mounting NEMA F-1
Mounting B34R(D)



200 HP 04 Poles 60 Hz A

						1:10
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ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER	THREE PH. MOTOR W40 PREM. EFF. FRAME 444/5TC IP23 ODP					
CHECKED							
RELEASED							
REL DT.		WMO Jaragua do Sul	Product Engineering	SHEET	1 / 1		

**PREVIEW**

**WDD**