

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: W40 NEMA Premium Efficiency Three-Phase	Product code :	14272427		
		Catalog # :	25018OT3G445TC-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>	: 1584 lb		
Protection degree	: IP23	Moment of inertia (J)	: 50.9 sq.ft.lb		
Design	: B				
Output [HP]	250	200	200	200	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	289	283	272	269	
L. R. Amperes [A]	1850	1953	1986	1991	
LRC [A]	6.4x(Code G)	6.9x(Code H)	7.3x(Code H)	7.4x(Code J)	
No load current [A]	106	105	115	125	
Rated speed [RPM]	1780	1480	1480	1485	
Slip [%]	1.11	1.33	1.33	1.00	
Rated torque [ft.lb]	738	710	710	707	
Locked rotor torque [%]	210	200	229	250	
Breakdown torque [%]	240	220	240	270	
Service factor	1.15	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	16s (cold) 9s (hot)	14s (cold) 8s (hot)	14s (cold) 8s (hot)	14s (cold) 8s (hot)	
Noise level <sup>2</sup>	78.0 dB(A)				
Efficiency (%)	25%	95.3	95.2	94.9	94.4
	50%	95.4	95.5	95.3	94.9
	75%	95.8	95.6	95.5	95.4
	100%	95.8	95.8	95.8	95.8
Power Factor	25%	0.46	0.46	0.41	0.38
	50%	0.72	0.72	0.67	0.64
	75%	0.80	0.81	0.78	0.75
	100%	0.84	0.84	0.83	0.81
Bearing type	: <u>Drive end</u> 6319 C3 <u>Non drive end</u> 6314 C3	Foundation loads			
Sealing	: Without Without	Max. traction	: 4298 lb		
	: Bearing Seal Bearing Seal	Max. compression	: 5883 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



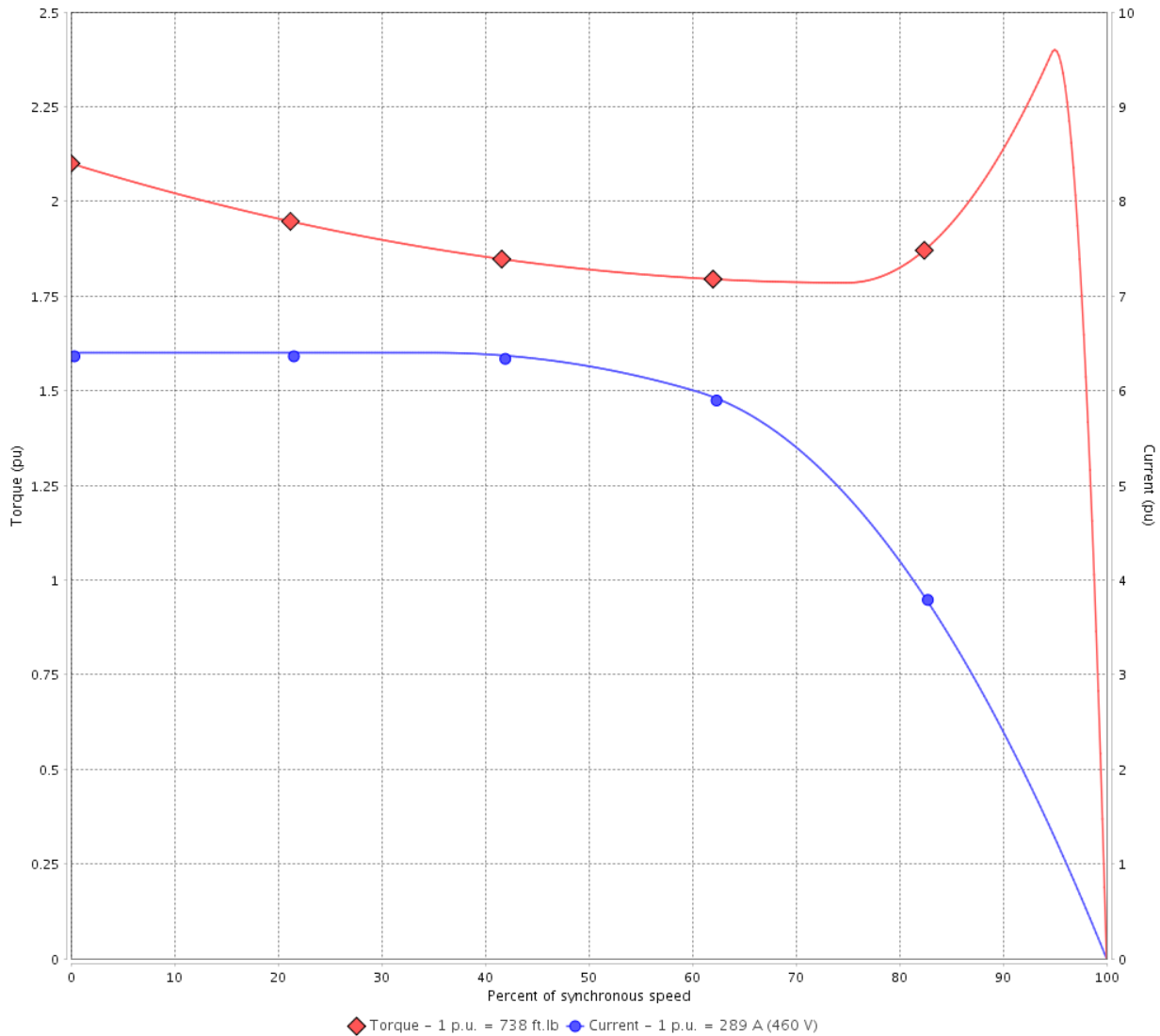
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272427

Catalog # : 25018OT3G445TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 4P

Rated current	: 289 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 738 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: B

Locked rotor time : 16s (cold) 9s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



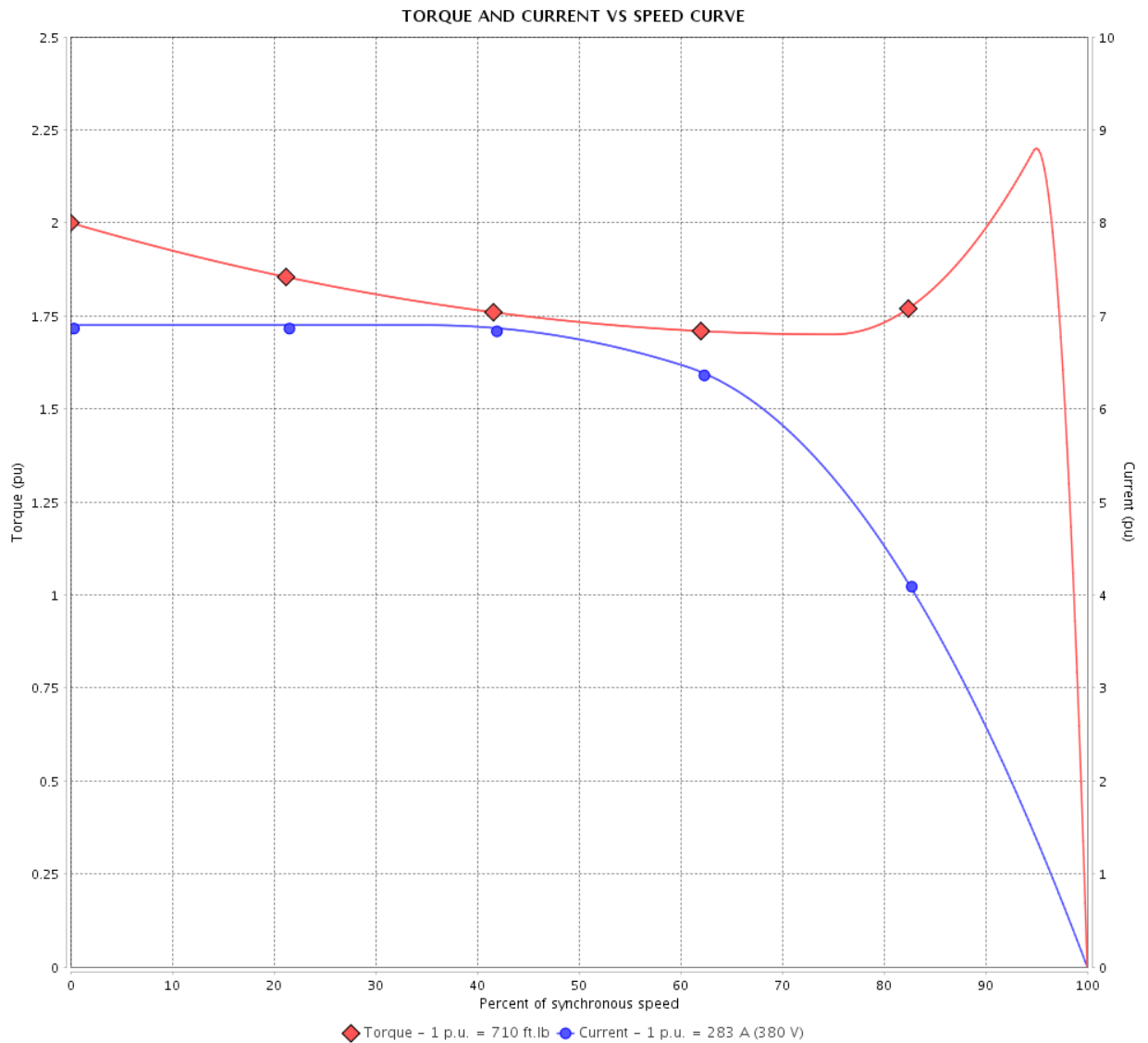
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272427

Catalog # : 25018OT3G445TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current	: 283 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 6.9	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 14s (cold) 8s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



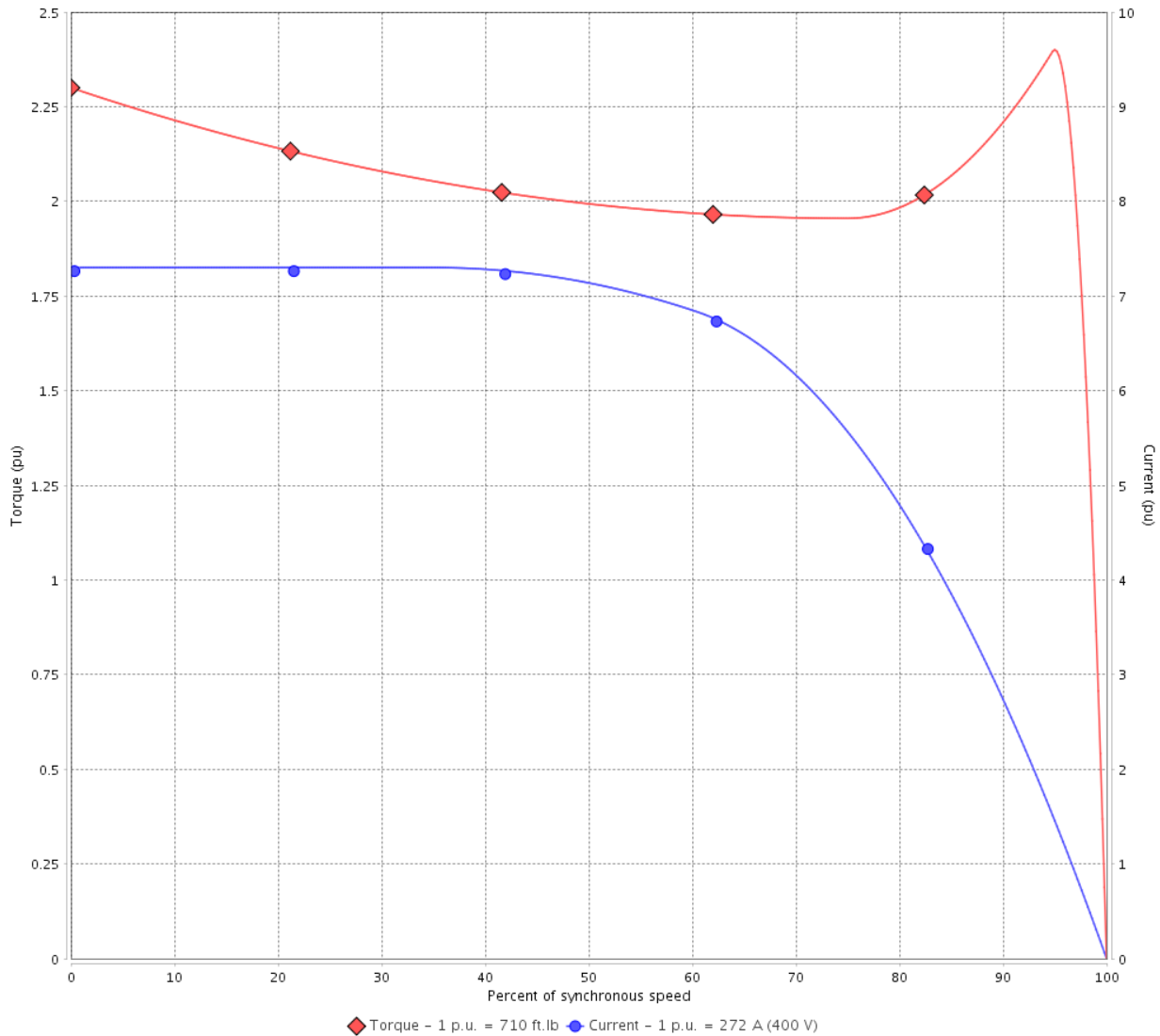
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14272427

Catalog # : 25018OT3G445TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 272 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 14s (cold) 8s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



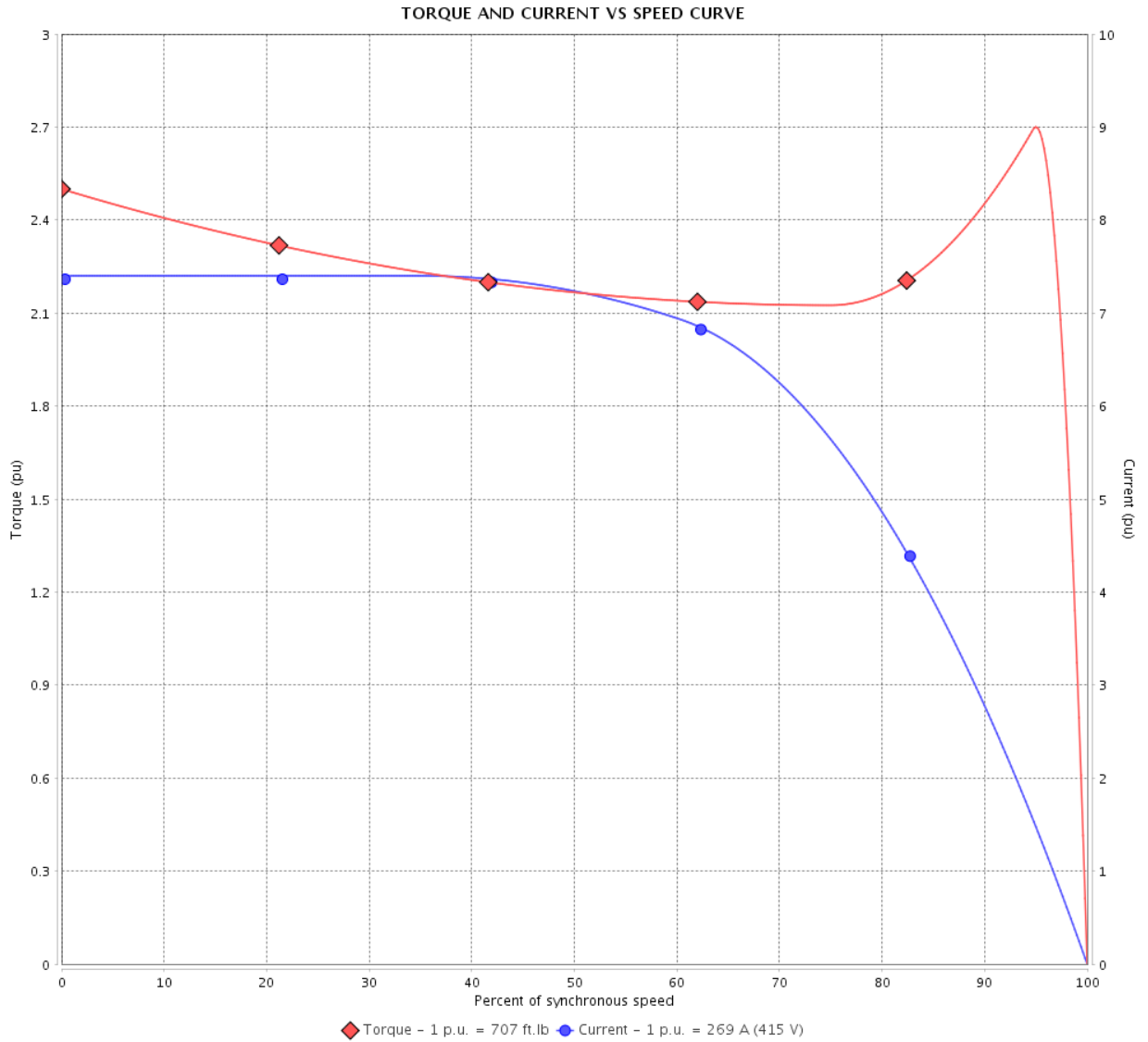
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 269 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 707 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1485 rpm	Design	: B

Locked rotor time : 14s (cold) 8s (hot)

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage

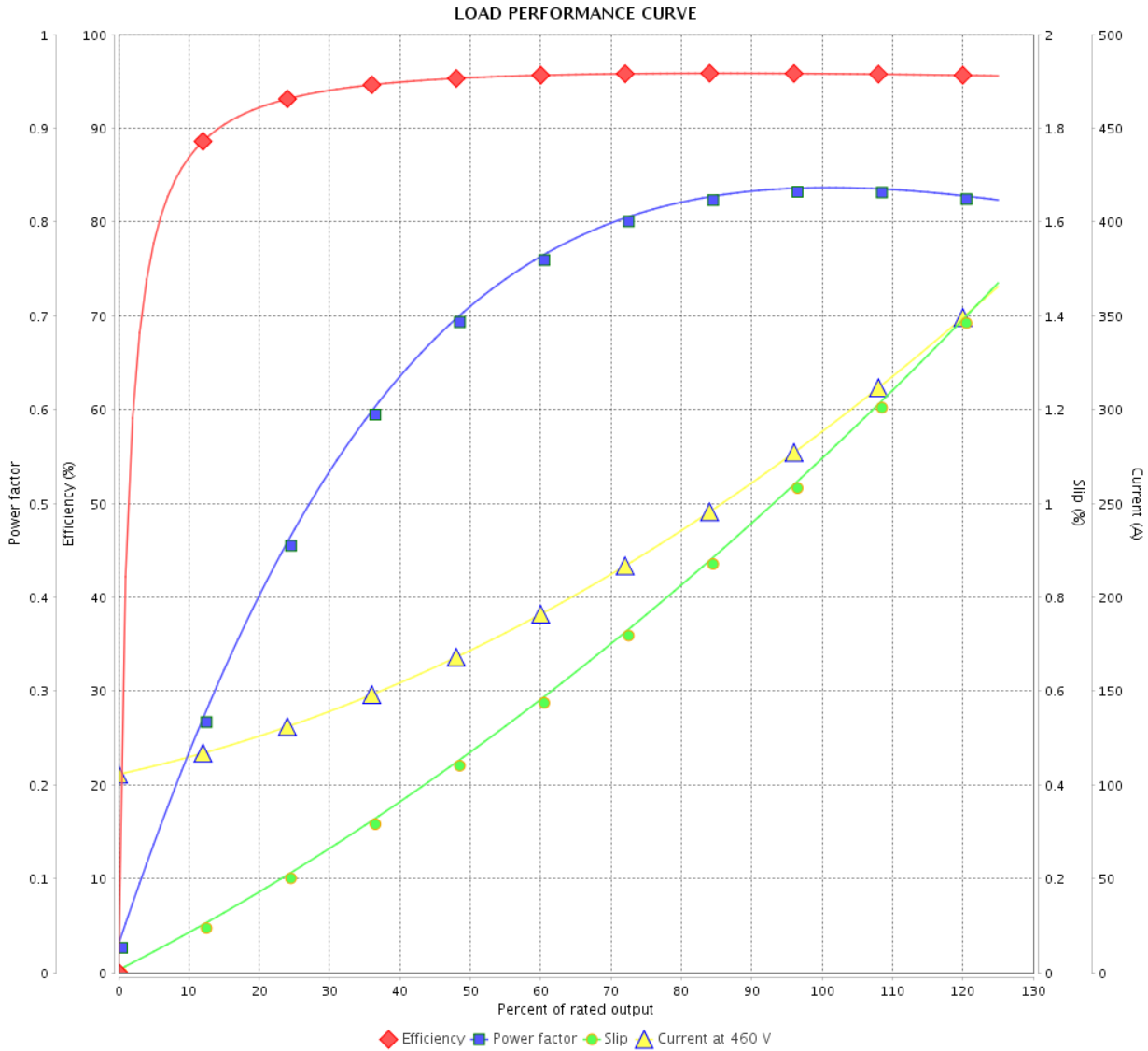


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Product code : 14272427

Catalog # : 25018OT3G445TC-W40



Performance : 460 V 60 Hz 4P

Rated current	: 289 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 738 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

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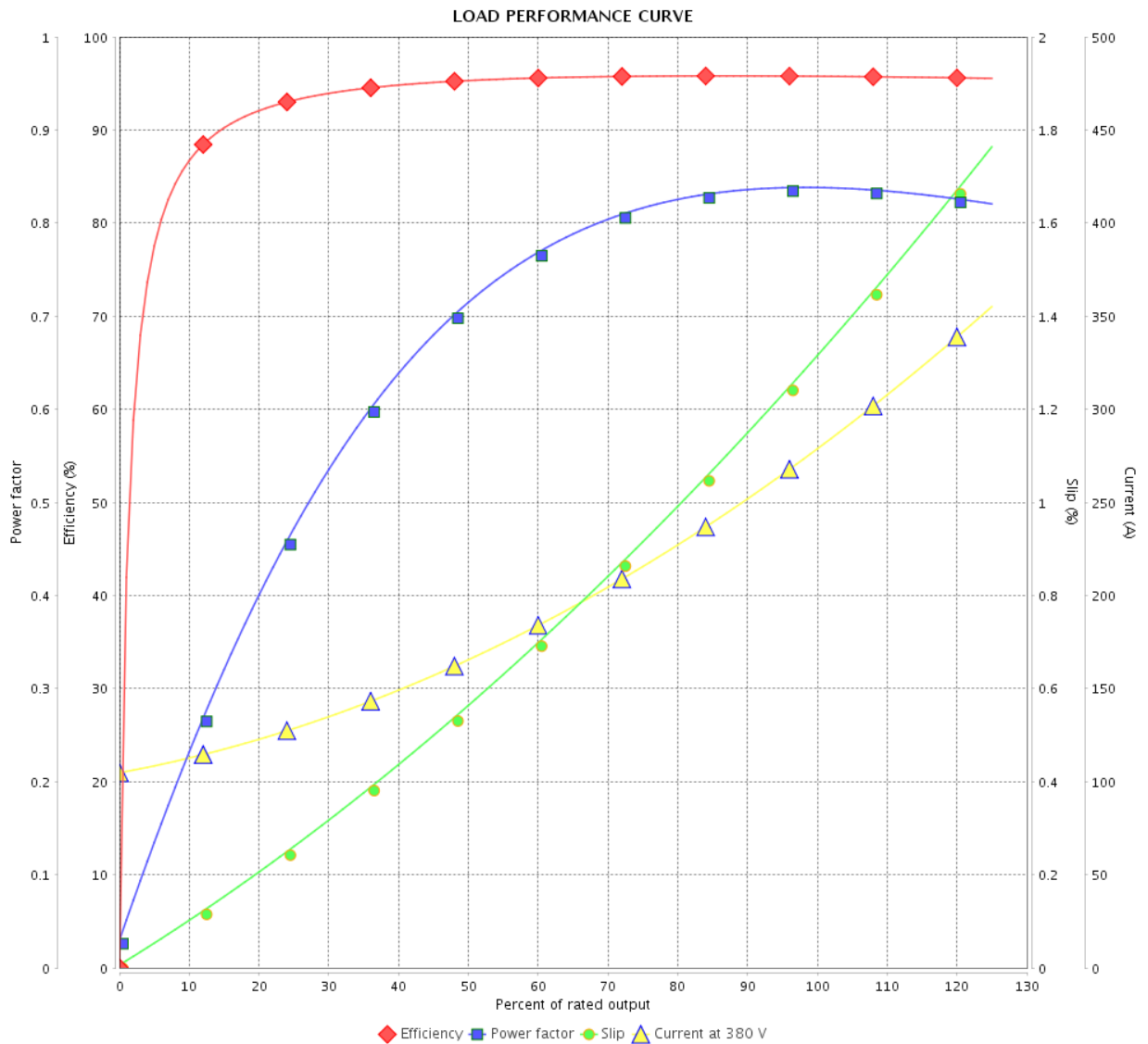


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Product code : 14272427

Catalog # : 25018OT3G445TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current : 283 A  
 LRC : 6.9  
 Rated torque : 710 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 220 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 50.9 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage

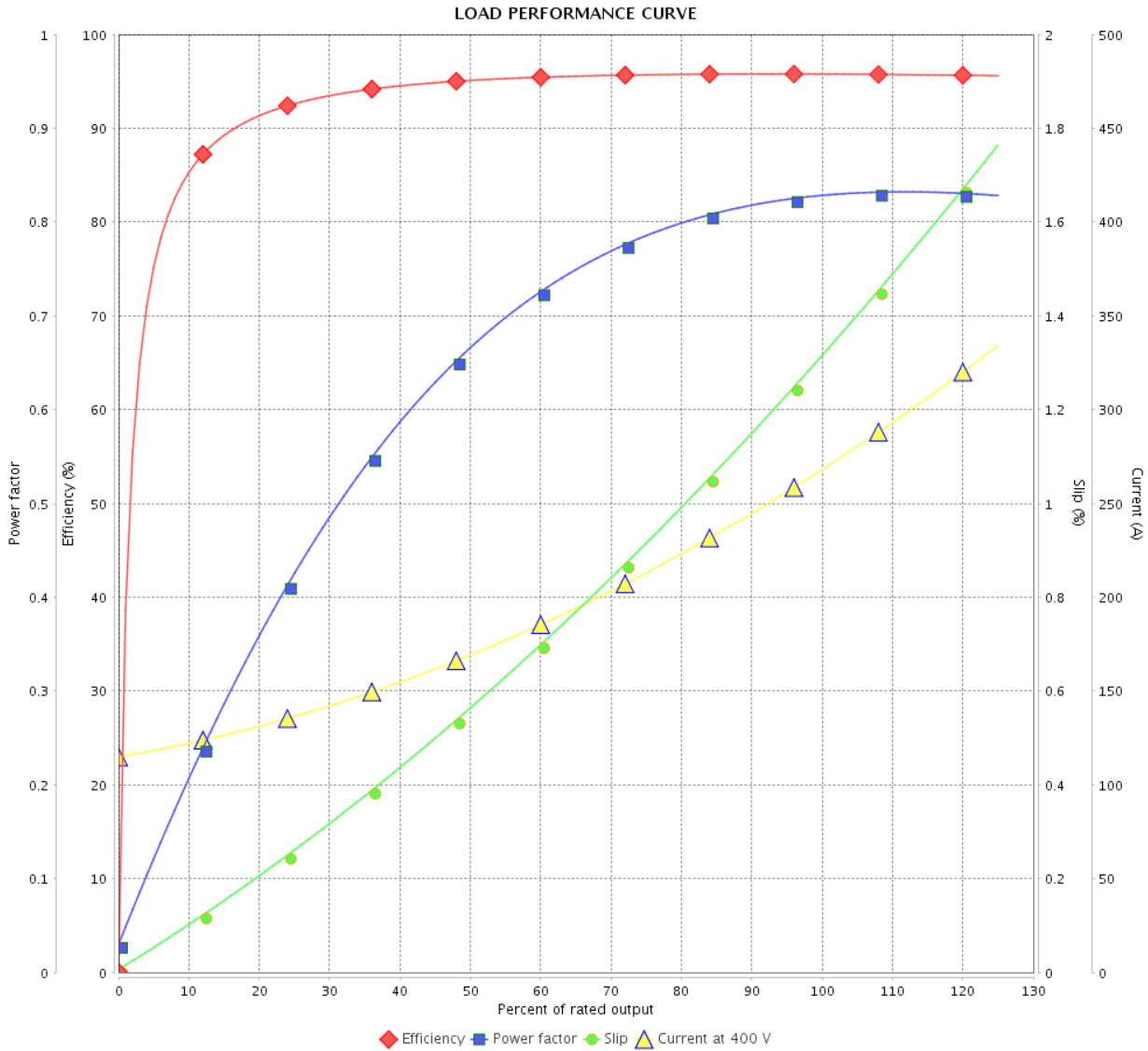


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Performance : 400 V 50 Hz 4P IE3

Rated current : 272 A  
 LRC : 7.3  
 Rated torque : 710 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 50.9 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

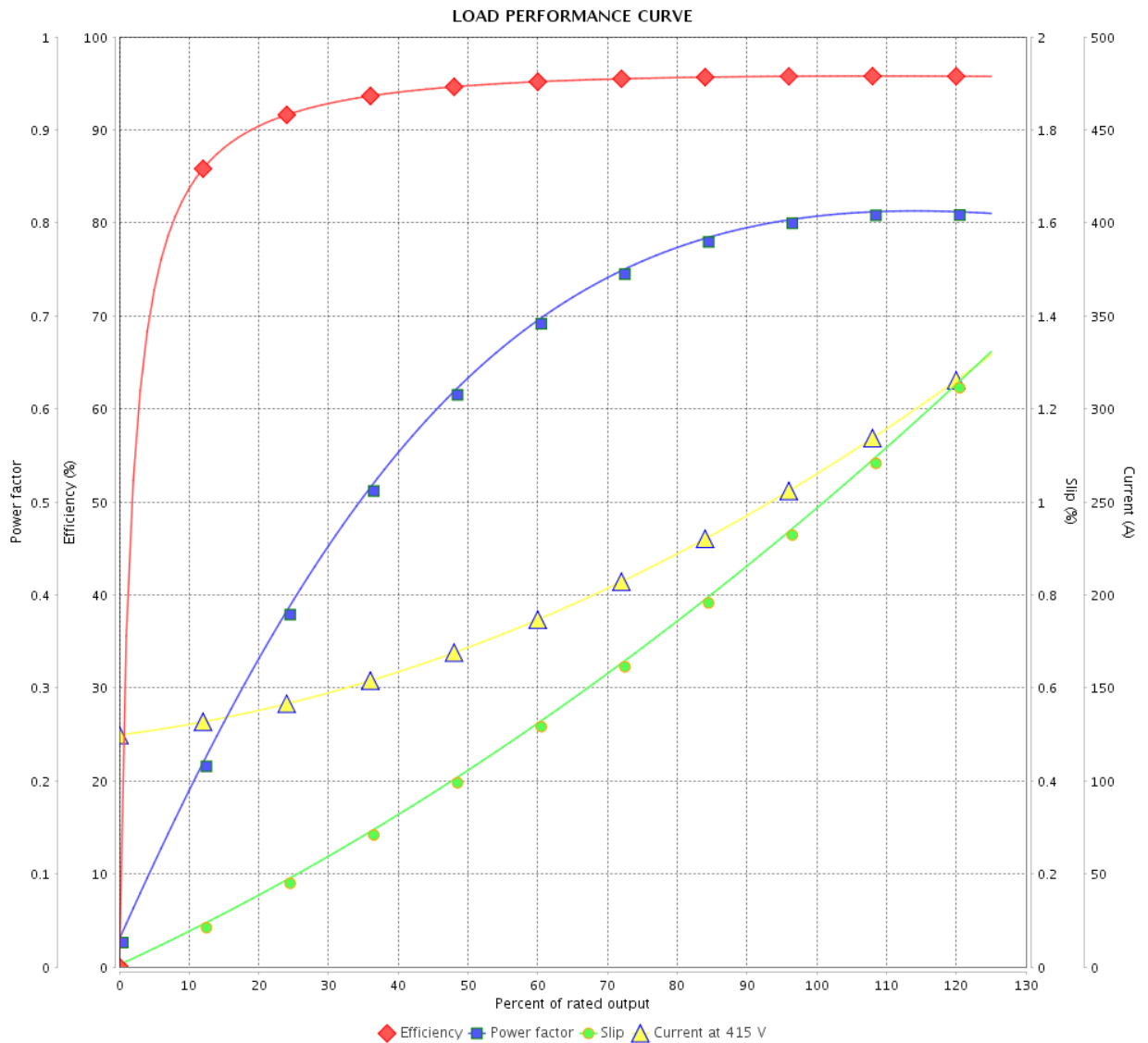


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Rated current : 269 A  
 LRC : 7.4  
 Rated torque : 707 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 270 %  
 Rated speed : 1485 rpm

Moment of inertia (J) : 50.9 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



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Rated speed	: 1780 rpm	Design	: B

Heating constant

Cooling constant

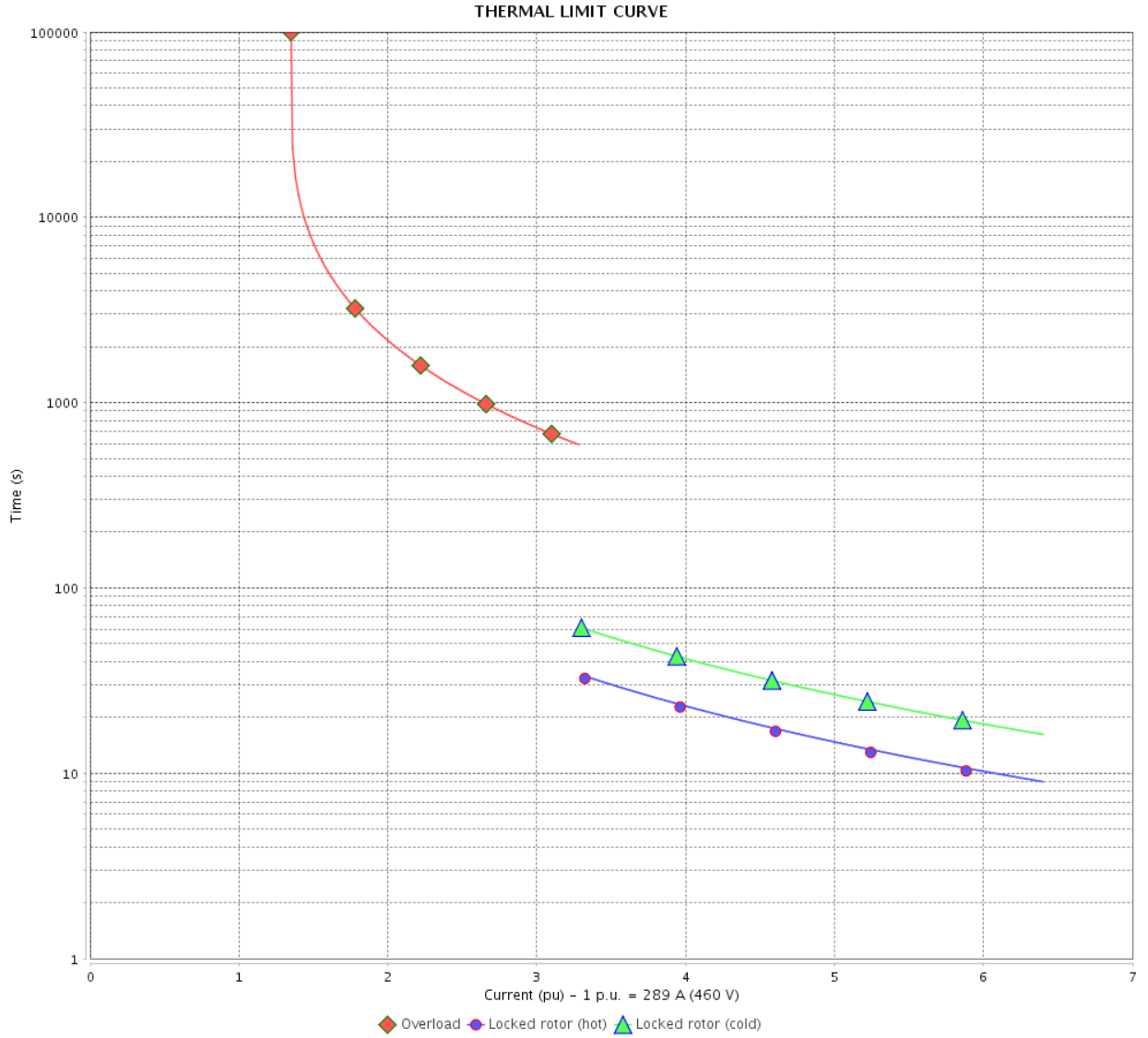
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Three Phase Induction Motor - Squirrel Cage



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Performance : 380 V 50 Hz 4P IE3

Rated current	: 283 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 6.9	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 220 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Heating constant

Cooling constant

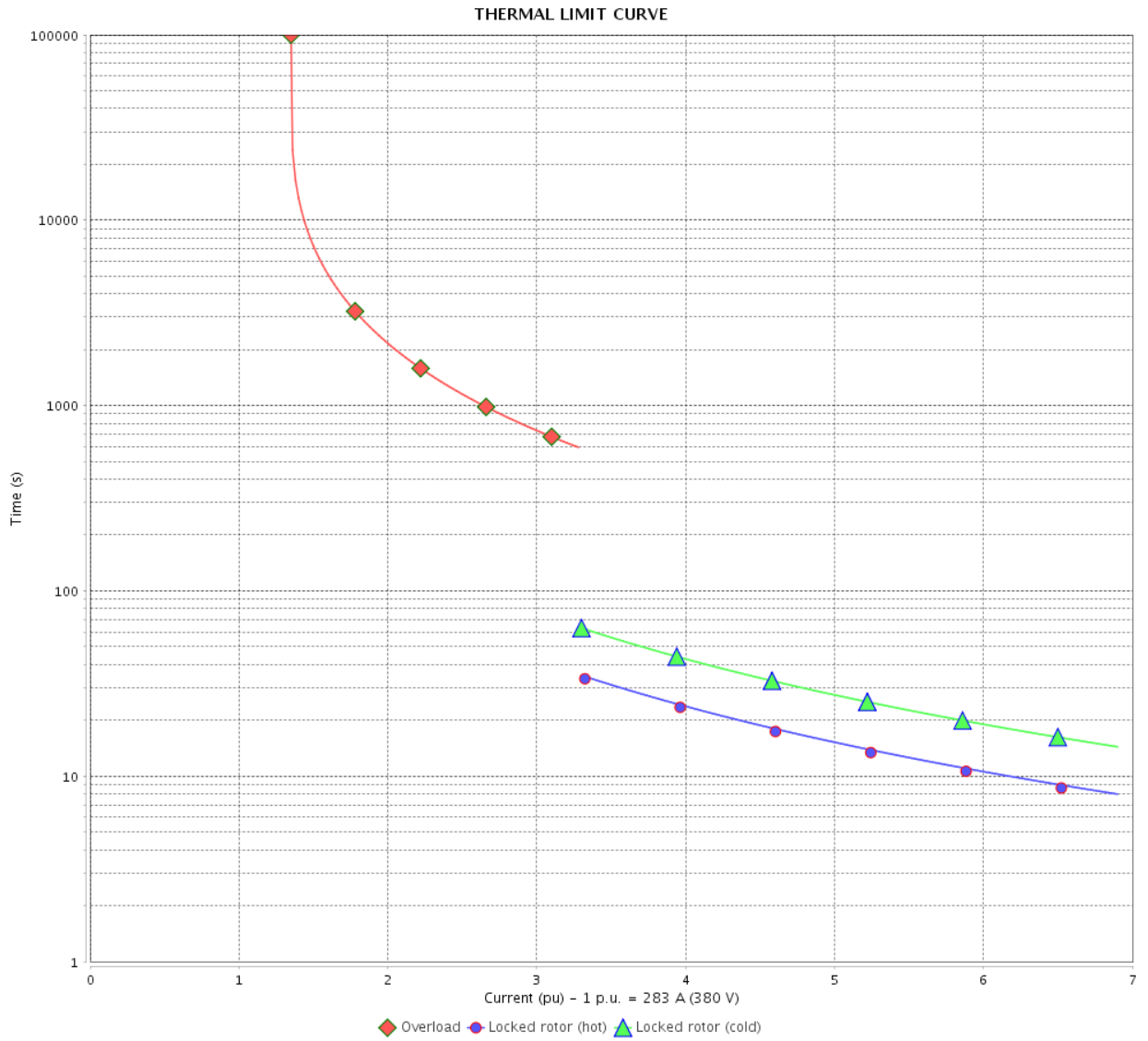
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Rated current	: 272 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Heating constant

Cooling constant

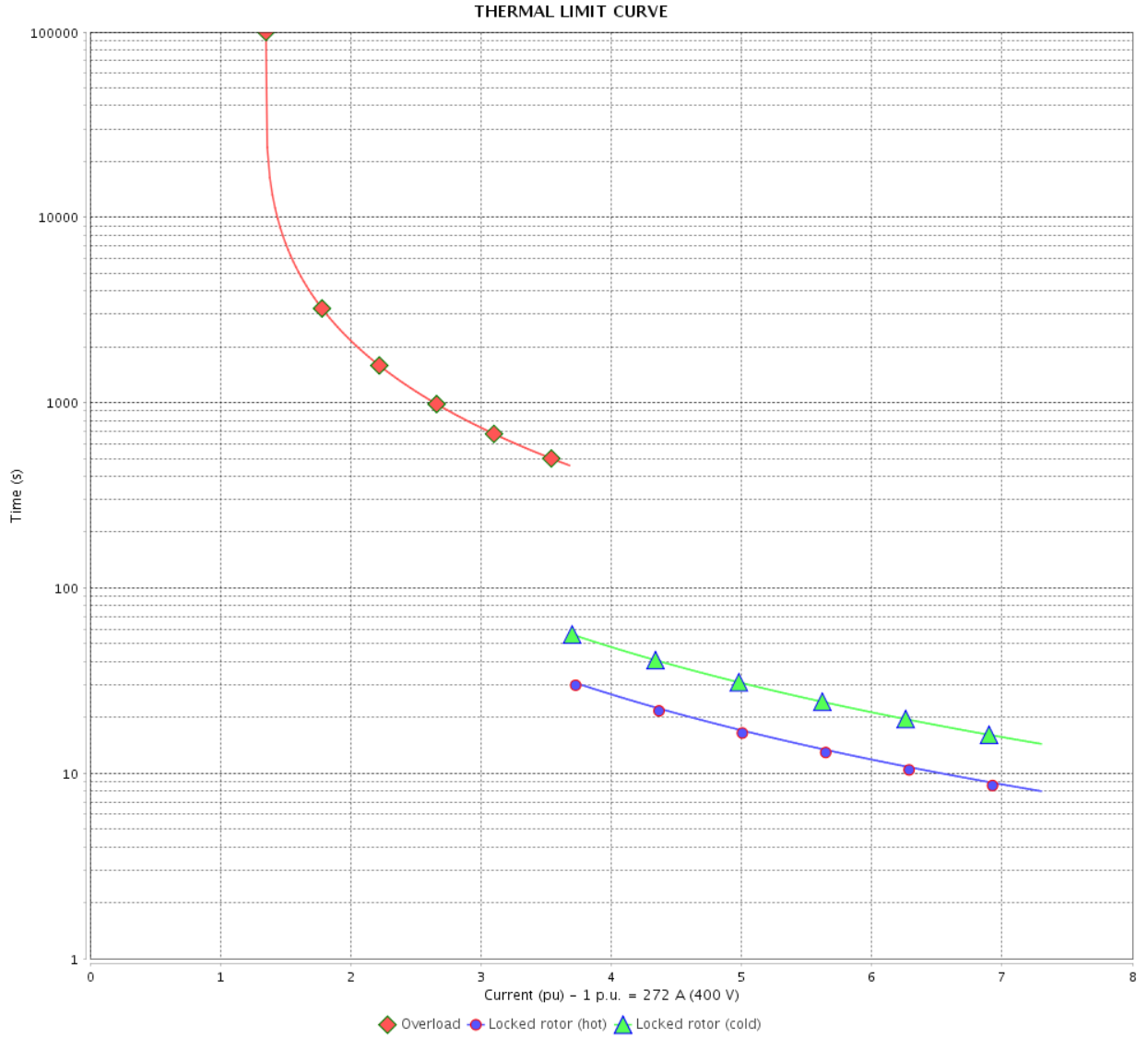
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Performance : 415 V 50 Hz 4P IE3

Rated current	: 269 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 7.4	Duty cycle	: Cont.(S1)
Rated torque	: 707 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	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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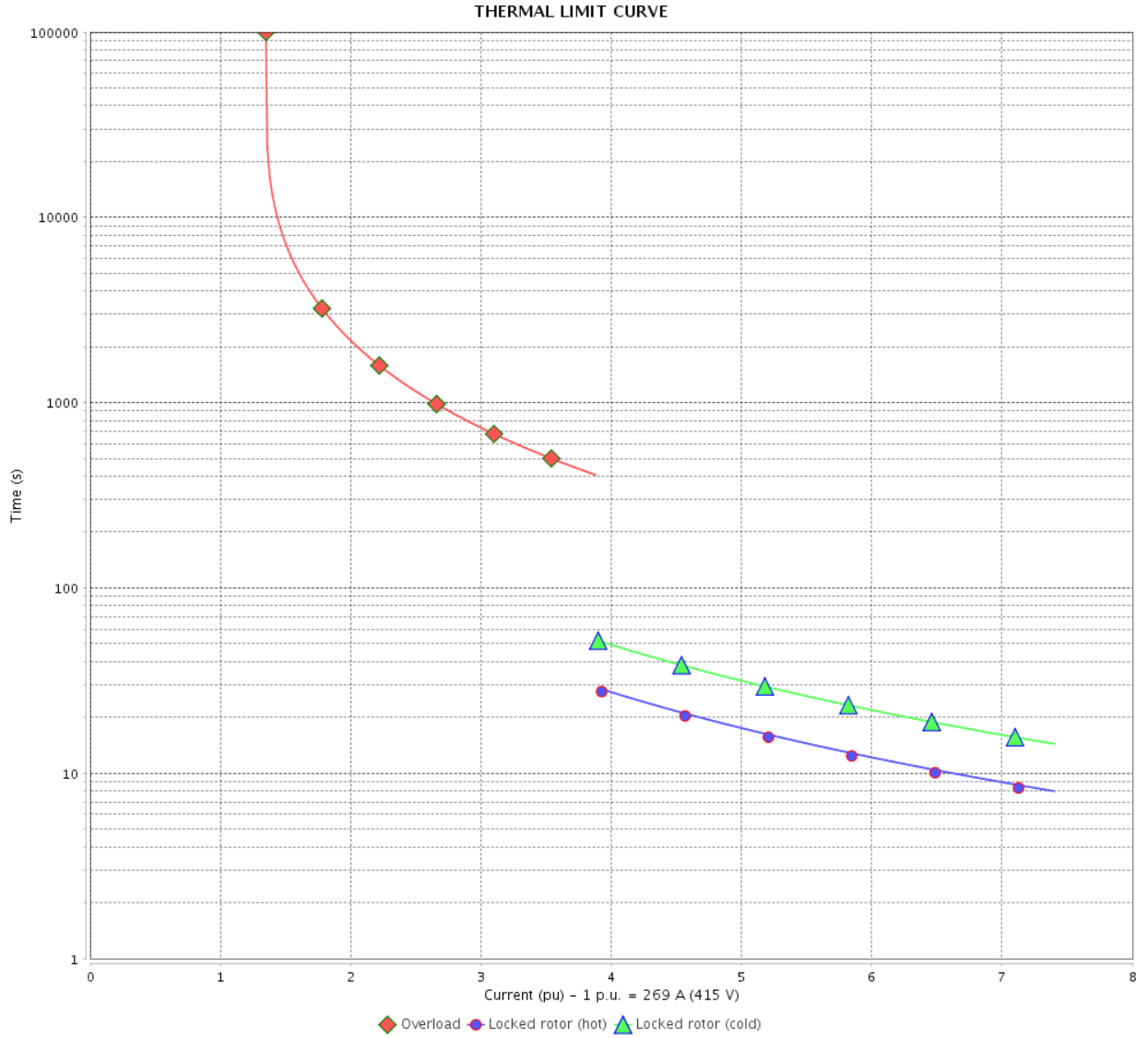


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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

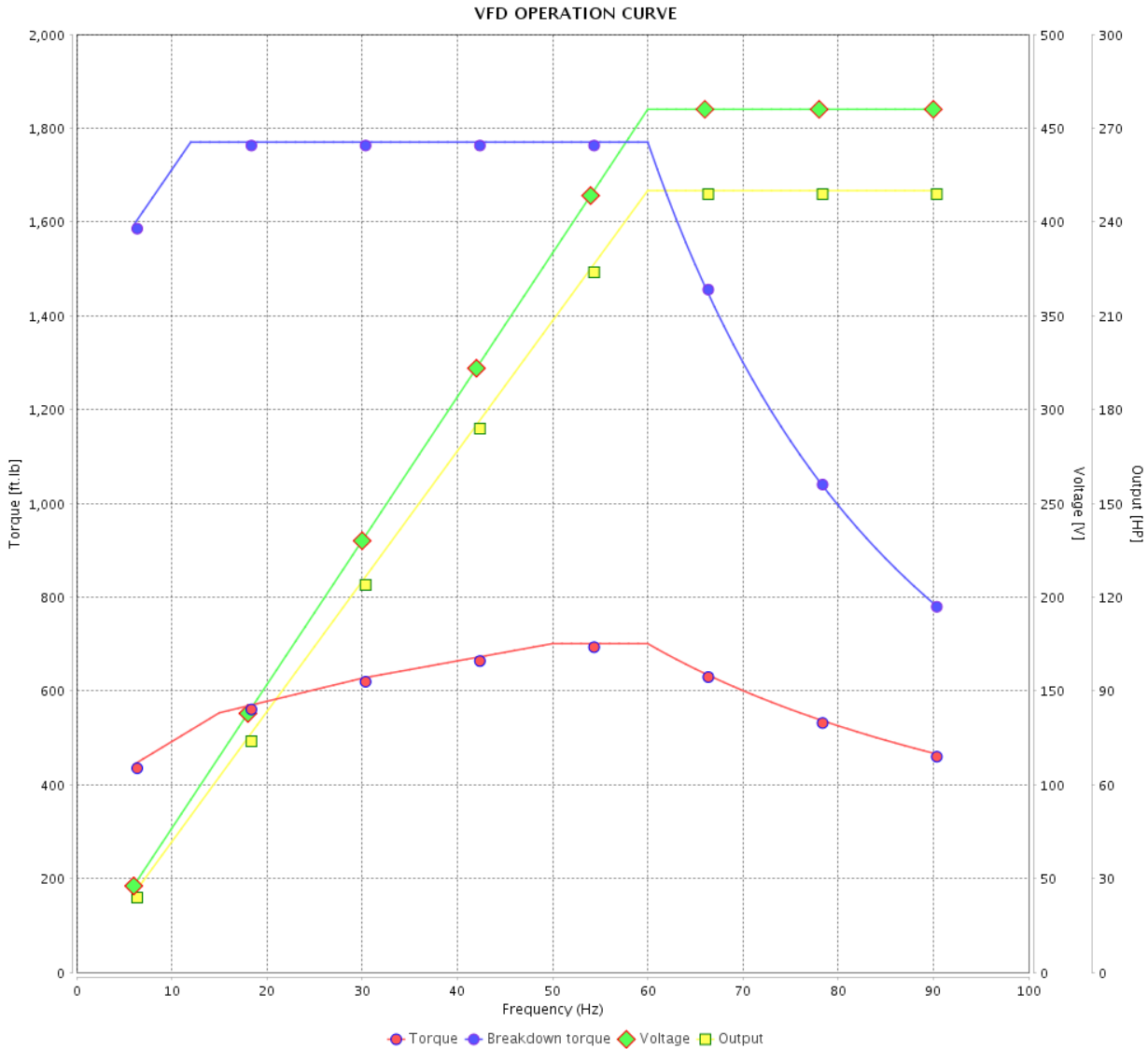


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Performance : 460 V 60 Hz 4P

Rated current	: 289 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 738 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1780 rpm	Design	: B

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

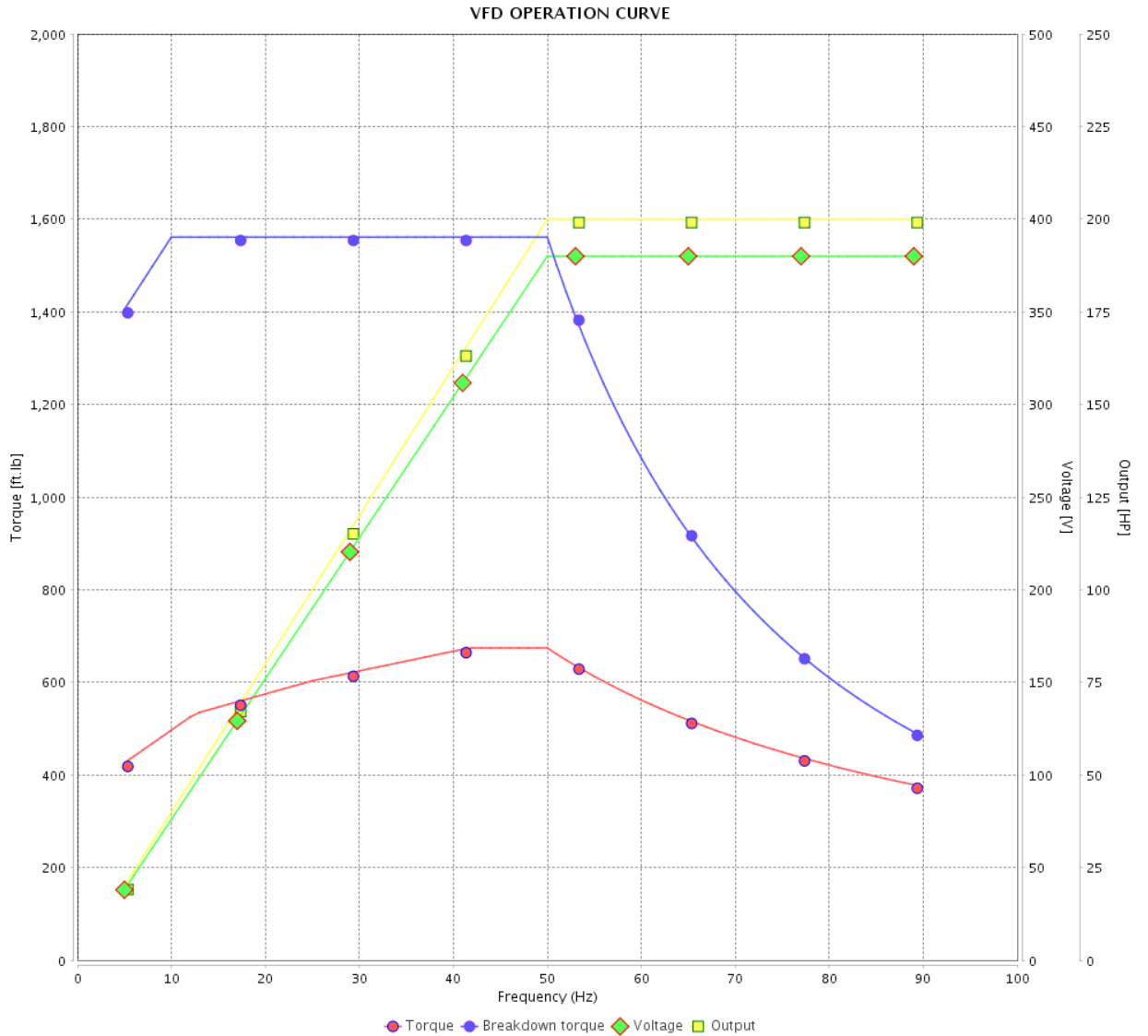


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Performance : 380 V 50 Hz 4P IE3

Rated current : 283 A  
LRC : 6.9  
Rated torque : 710 ft.lb  
Locked rotor torque : 200 %  
Breakdown torque : 220 %  
Rated speed : 1480 rpm

Moment of inertia (J) : 50.9 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.00  
Temperature rise : 80 K  
Design : B

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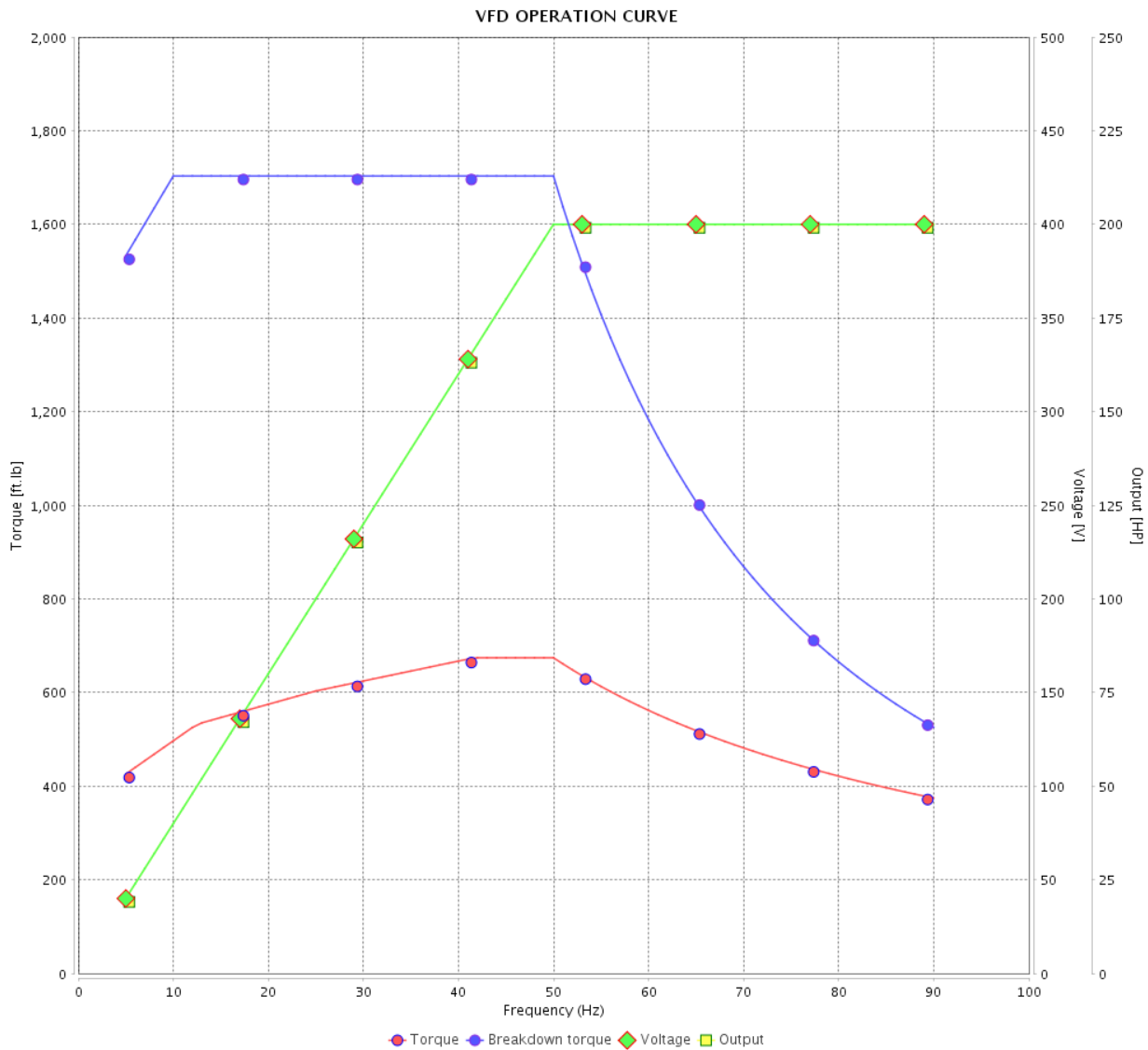


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Performance : 400 V 50 Hz 4P IE3

Rated current	: 272 A	Moment of inertia (J)	: 50.9 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 710 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

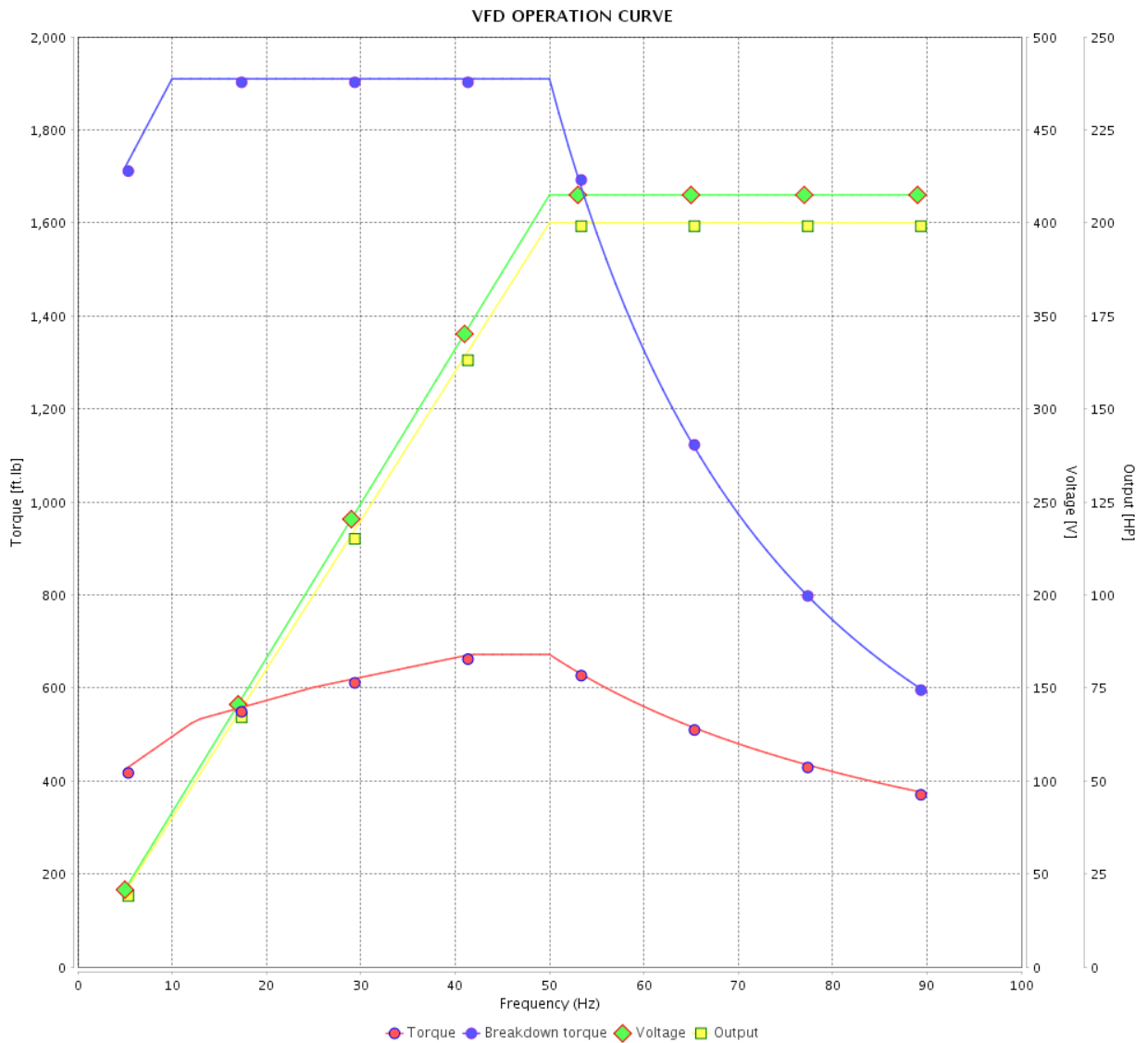


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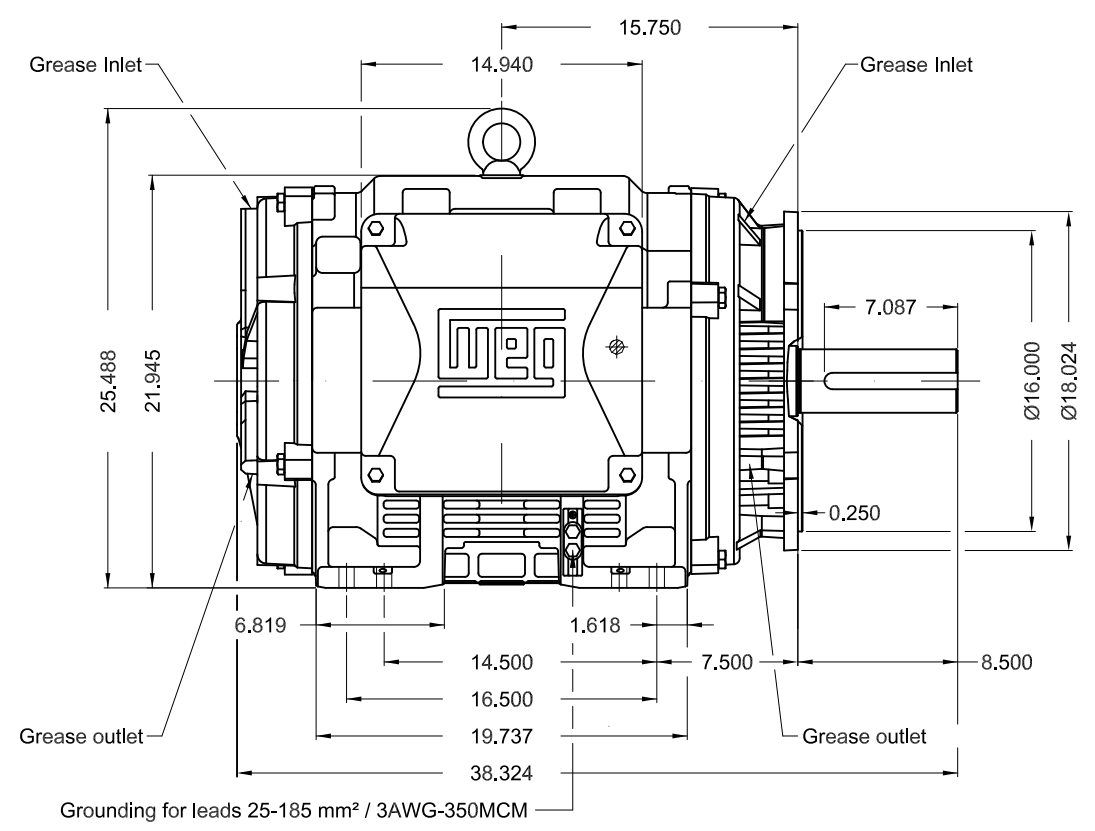
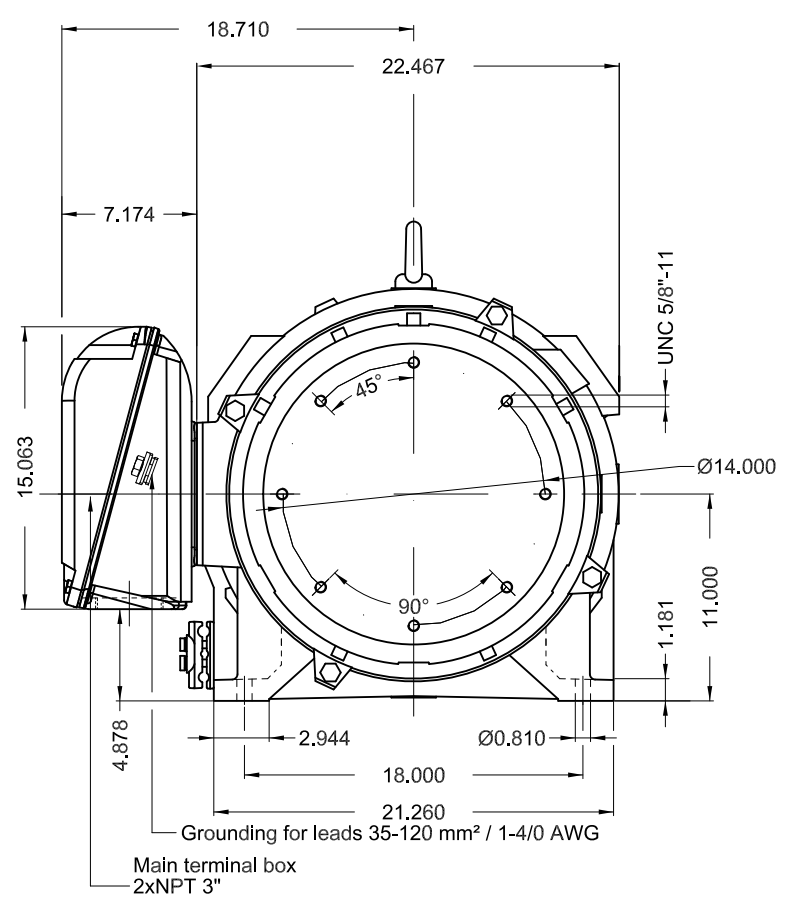


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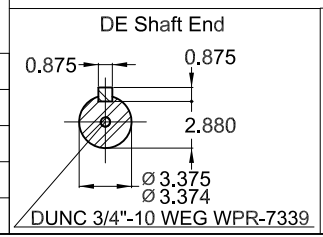
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Moment of inertia (J) : 50.9 sq.ft.lb  
 Duty cycle : Cont.(S1)  
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- C3 NDE bearing
- Color RAL 5009
- Painting plan 203A
- Mounting NEMA F-1
- Mounting B34R(D)



250 HP 04 Poles 60 Hz A

1:10

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

**PREVIEW**  
WDD

