

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: W40 NEMA Premium Efficiency Three-Phase	Product code :	14494774		
		Catalog # :	02018OT3E256TC-W40		
Frame	: 254/6TC	Cooling method	: IC01 - ODP		
Insulation class	: F	Mounting	: F-1		
Duty cycle	: Cont.(S1)	Rotation ¹	: Both (CW and CCW)		
Ambient temperature	: -20°C to +40°C	Starting method	: Direct On Line		
Altitude	: 1000 m.a.s.l.	Approx. weight ²	: 283 lb		
Protection degree	: IP23	Moment of inertia (J)	: 3.13 sq.ft.lb		
Design	: B				
Output [HP]	20	15	15	15	
Poles	4	4	4	4	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	48.2/24.1	22.0	21.4	21.2	
L. R. Amperes [A]	308/154	154	156	155	
LRC [A]	6.4x(Code G)	7.0x(Code H)	7.3x(Code J)	7.3x(Code J)	
No load current [A]	20.0/10.0	9.90	10.7	11.3	
Rated speed [RPM]	1770	1475	1480	1480	
Slip [%]	1.67	1.67	1.33	1.33	
Rated torque [ft.lb]	59.3	53.4	53.2	53.2	
Locked rotor torque [%]	220	250	240	290	
Breakdown torque [%]	250	270	300	330	
Service factor	1.25	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	
Locked rotor time	46s (cold) 26s (hot)	61s (cold) 34s (hot)	52s (cold) 29s (hot)	46s (cold) 26s (hot)	
Noise level ²	62.0 dB(A)				
Efficiency (%)	25%	92.2	90.9	91.0	91.0
	50%	92.4	91.1	91.1	91.1
	75%	93.0	91.5	91.5	91.5
	100%	93.0	91.5	91.5	91.5
Power Factor	25%	0.43	0.40	0.37	0.34
	50%	0.69	0.66	0.62	0.59
	75%	0.79	0.77	0.74	0.72
	100%	0.84	0.83	0.81	0.79
Bearing type	: Drive end 6309 Z C3	Non drive end 6209 Z C3	Foundation loads		
Sealing	: Without	Without	Max. traction		
	Bearing Seal	Bearing Seal	Max. compression		
Lubrication interval	: 20000 h	20000 h			
Lubricant amount	: 13 g	9 g			
Lubricant type	: Mobil Polyrex EM				
Notes					
USABLE @208V 53.3A SF 1.15 SFA 61.3A					
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



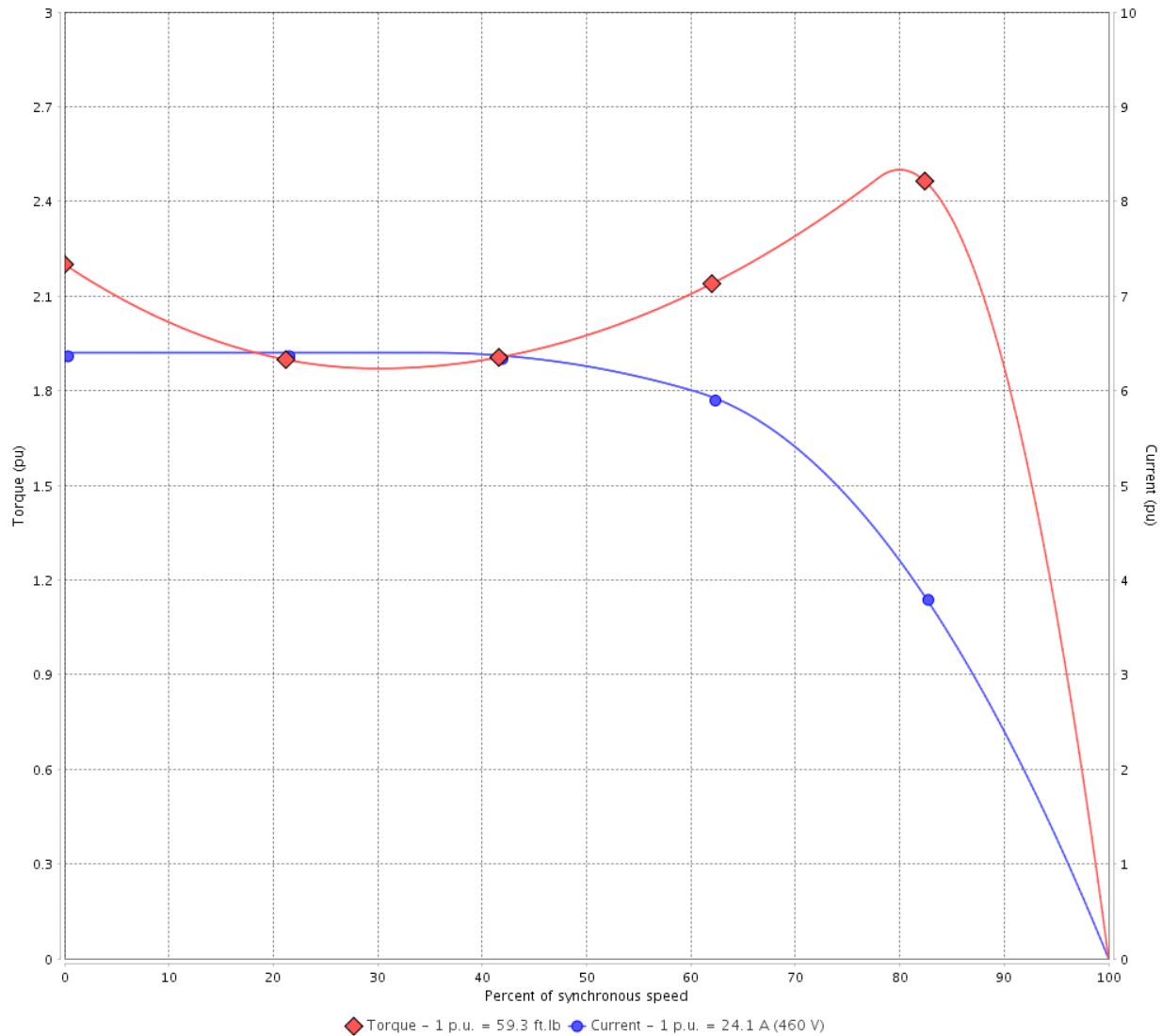
Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 4P

Rated current	: 48.2/24.1 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 59.3 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 1770 rpm	Design	: B

Locked rotor time : 46s (cold) 26s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



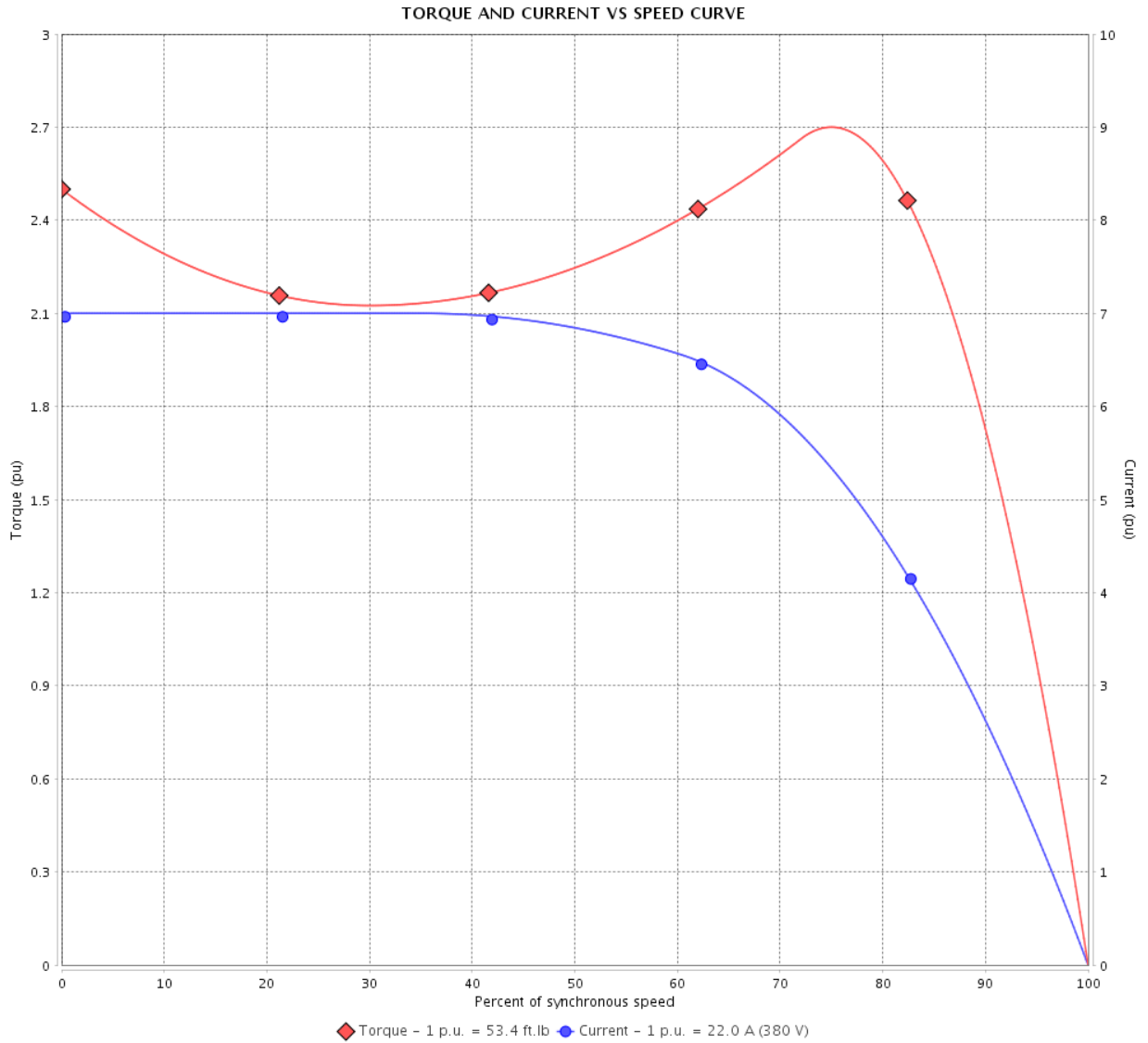
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current	: 22.0 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 7.0	Duty cycle	: Cont.(S1)
Rated torque	: 53.4 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

Locked rotor time : 61s (cold) 34s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



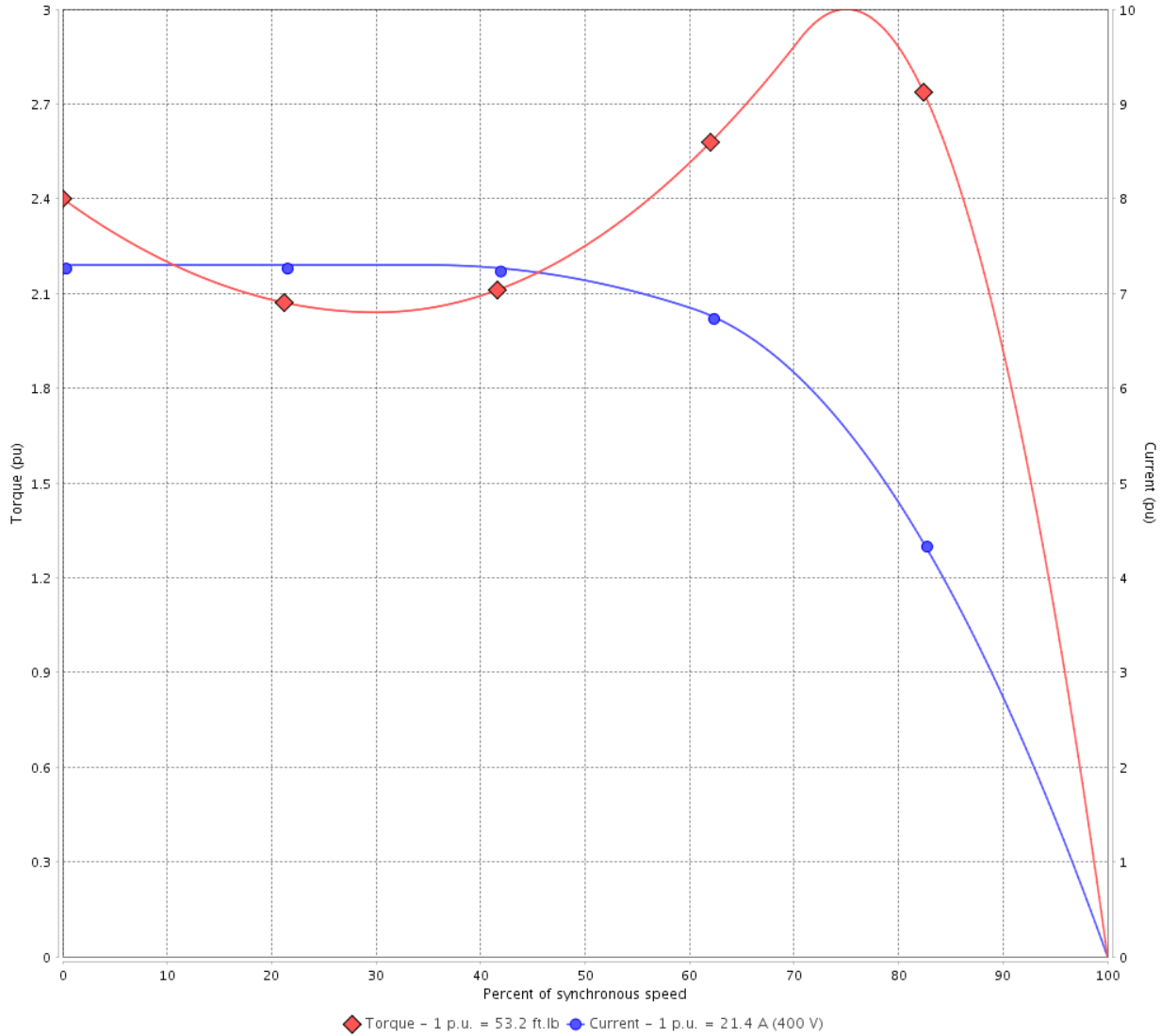
Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 21.4 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 53.2 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 52s (cold) 29s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



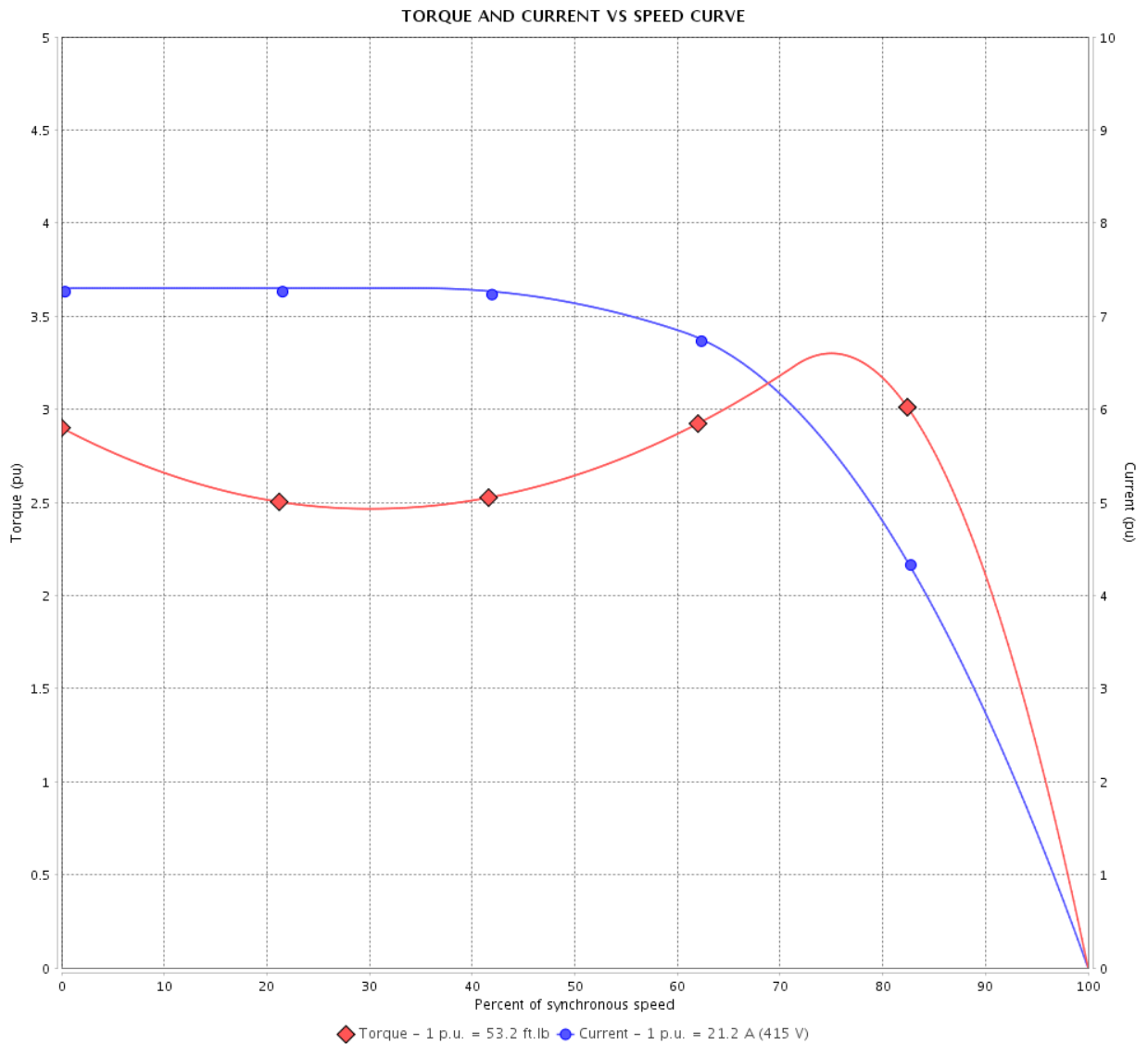
Three Phase Induction Motor - Squirrel Cage

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Product code : 14494774

Catalog # : 02018OT3E256TC-W40



Performance : 415 V 50 Hz 4P IE3

Rated current	: 21.2 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 53.2 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 46s (cold) 26s (hot)

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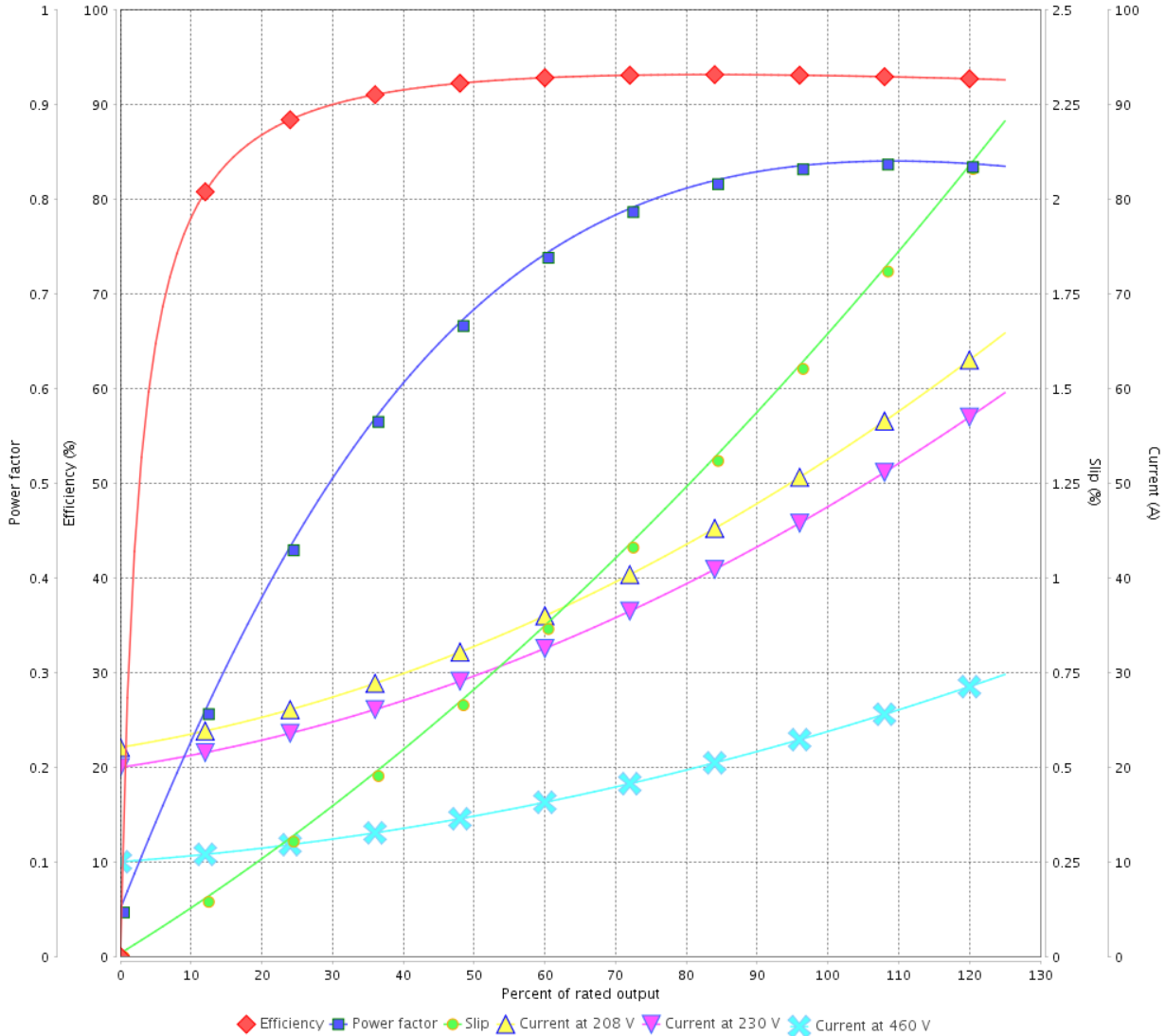
Customer :

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Product code : 14494774

Catalog # : 02018OT3E256TC-W40

LOAD PERFORMANCE CURVE



Performance : 230/460 V 60 Hz 4P

Rated current : 48.2/24.1 A
 LRC : 6.4
 Rated torque : 59.3 ft.lb
 Locked rotor torque : 220 %
 Breakdown torque : 250 %
 Rated speed : 1770 rpm

Moment of inertia (J) : 3.13 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

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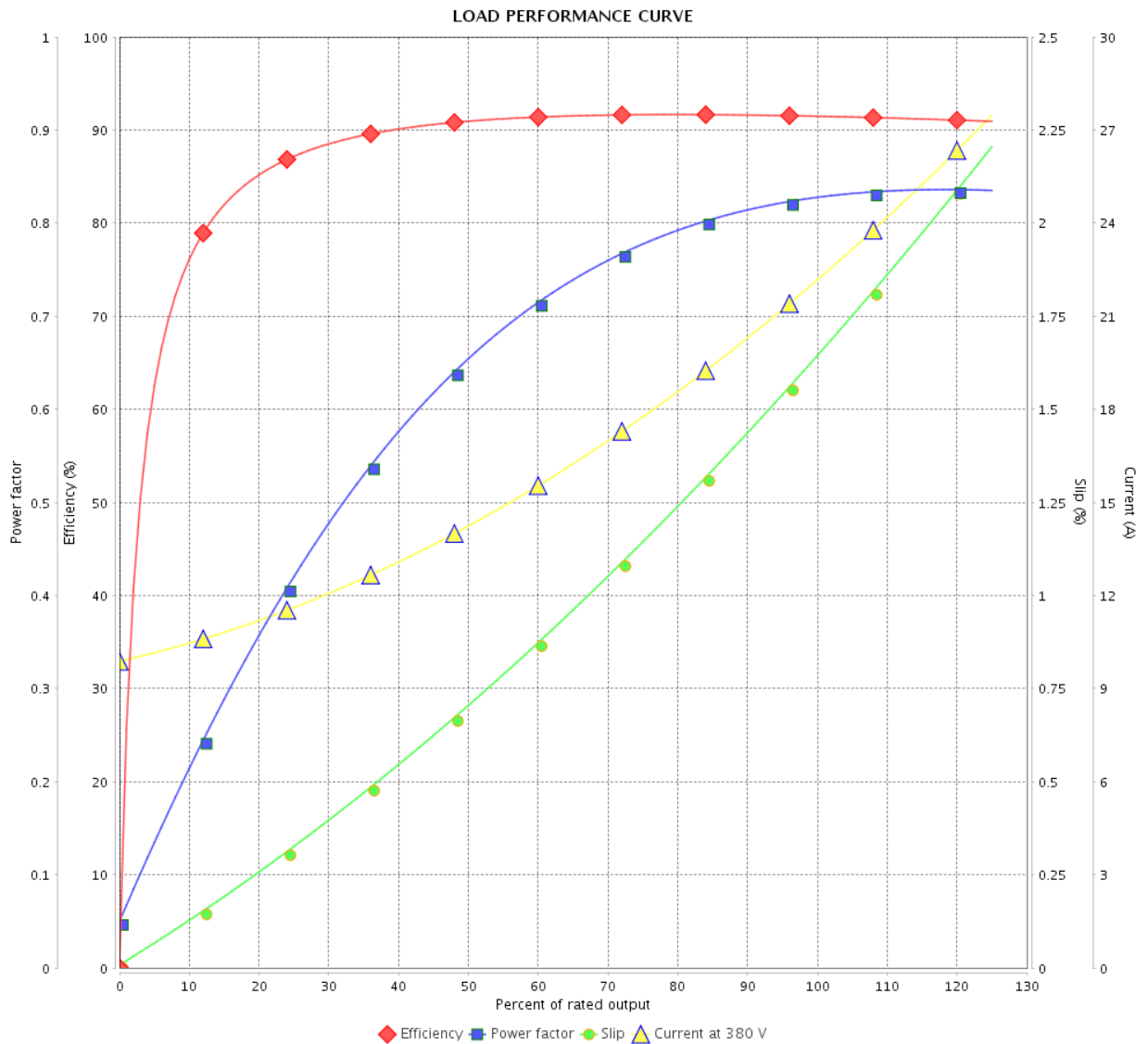


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Performance : 380 V 50 Hz 4P IE3

Rated current : 22.0 A
LRC : 7.0
Rated torque : 53.4 ft.lb
Locked rotor torque : 250 %
Breakdown torque : 270 %
Rated speed : 1475 rpm

Moment of inertia (J) : 3.13 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

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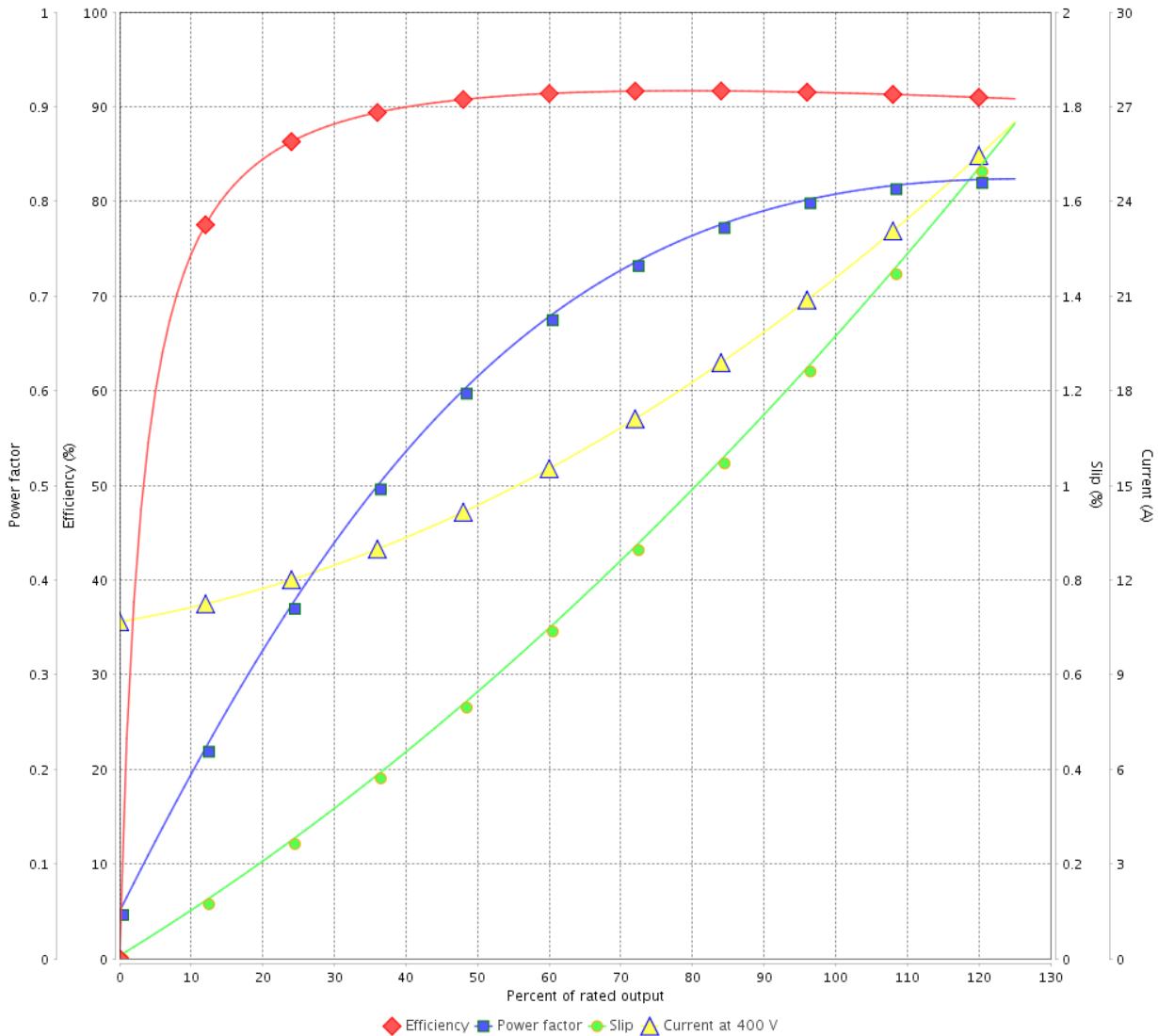
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LOAD PERFORMANCE CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 21.4 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 53.2 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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Three Phase Induction Motor - Squirrel Cage

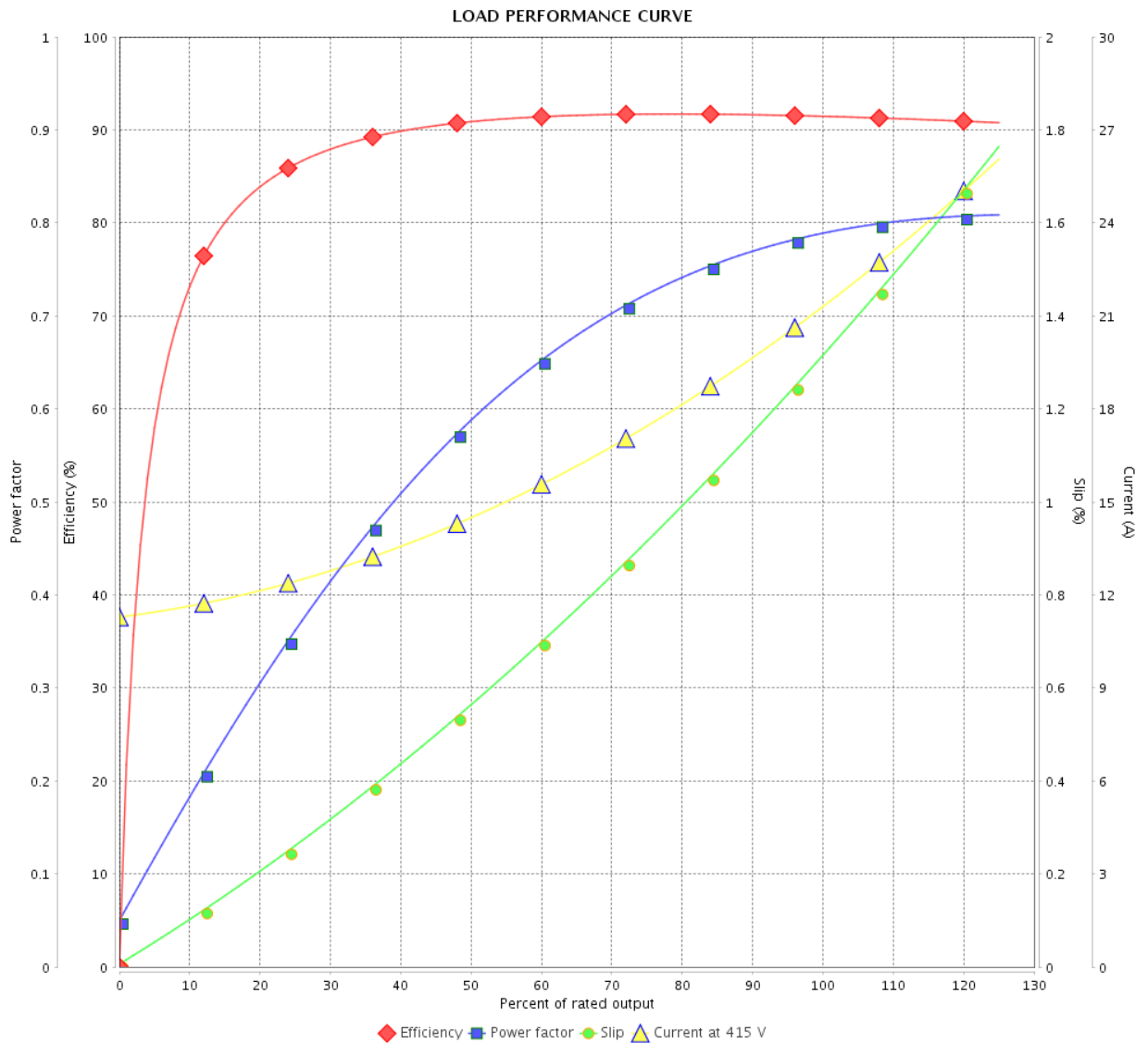


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Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40



Performance : 415 V 50 Hz 4P IE3

Rated current : 21.2 A
 LRC : 7.3
 Rated torque : 53.2 ft.lb
 Locked rotor torque : 290 %
 Breakdown torque : 330 %
 Rated speed : 1480 rpm

Moment of inertia (J) : 3.13 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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Locked rotor torque : 220 %
Breakdown torque : 250 %
Rated speed : 1770 rpm

Moment of inertia (J) : 3.13 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.25
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

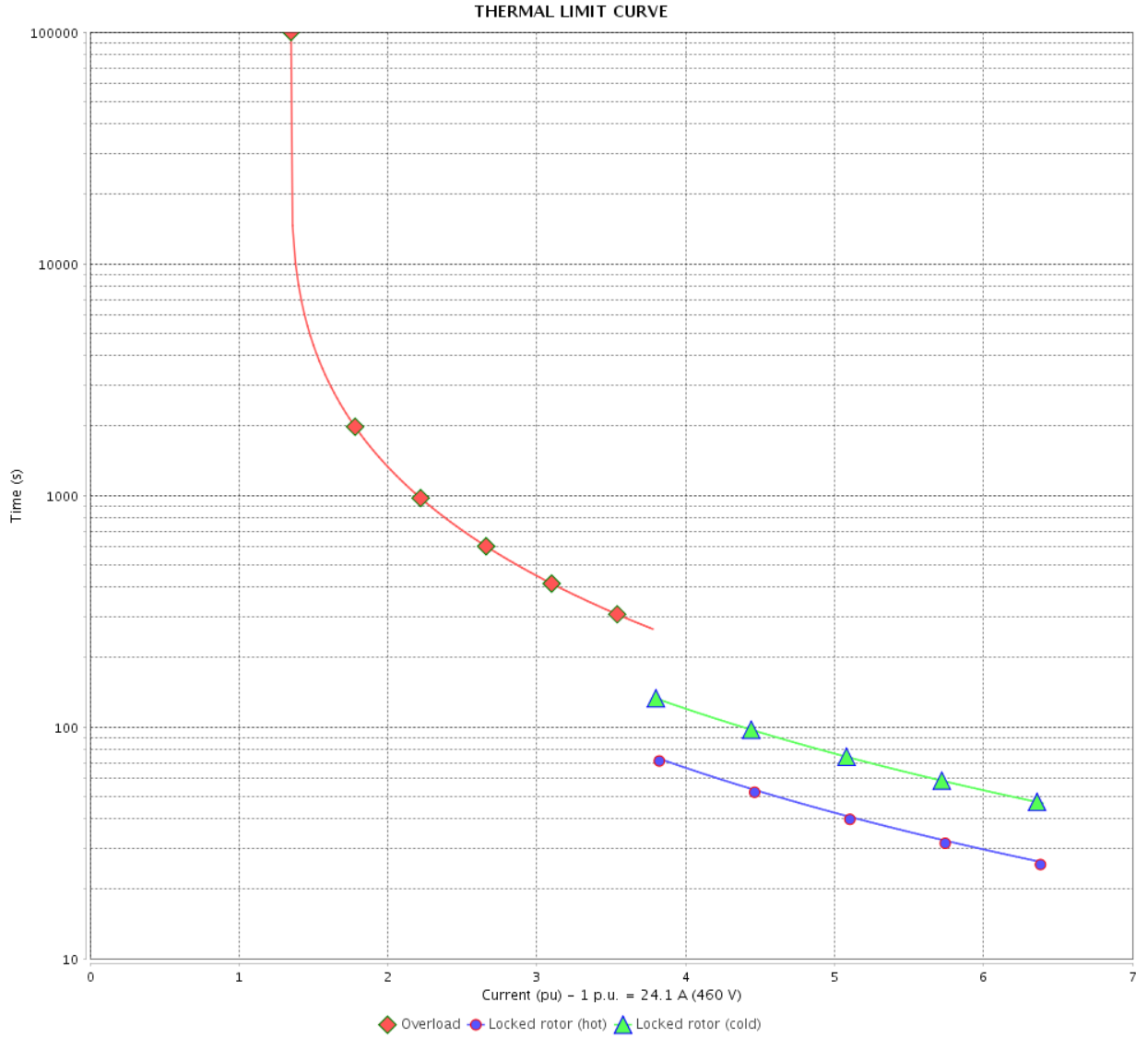
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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Locked rotor torque : 250 %
Breakdown torque : 270 %
Rated speed : 1475 rpm

Moment of inertia (J) : 3.13 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

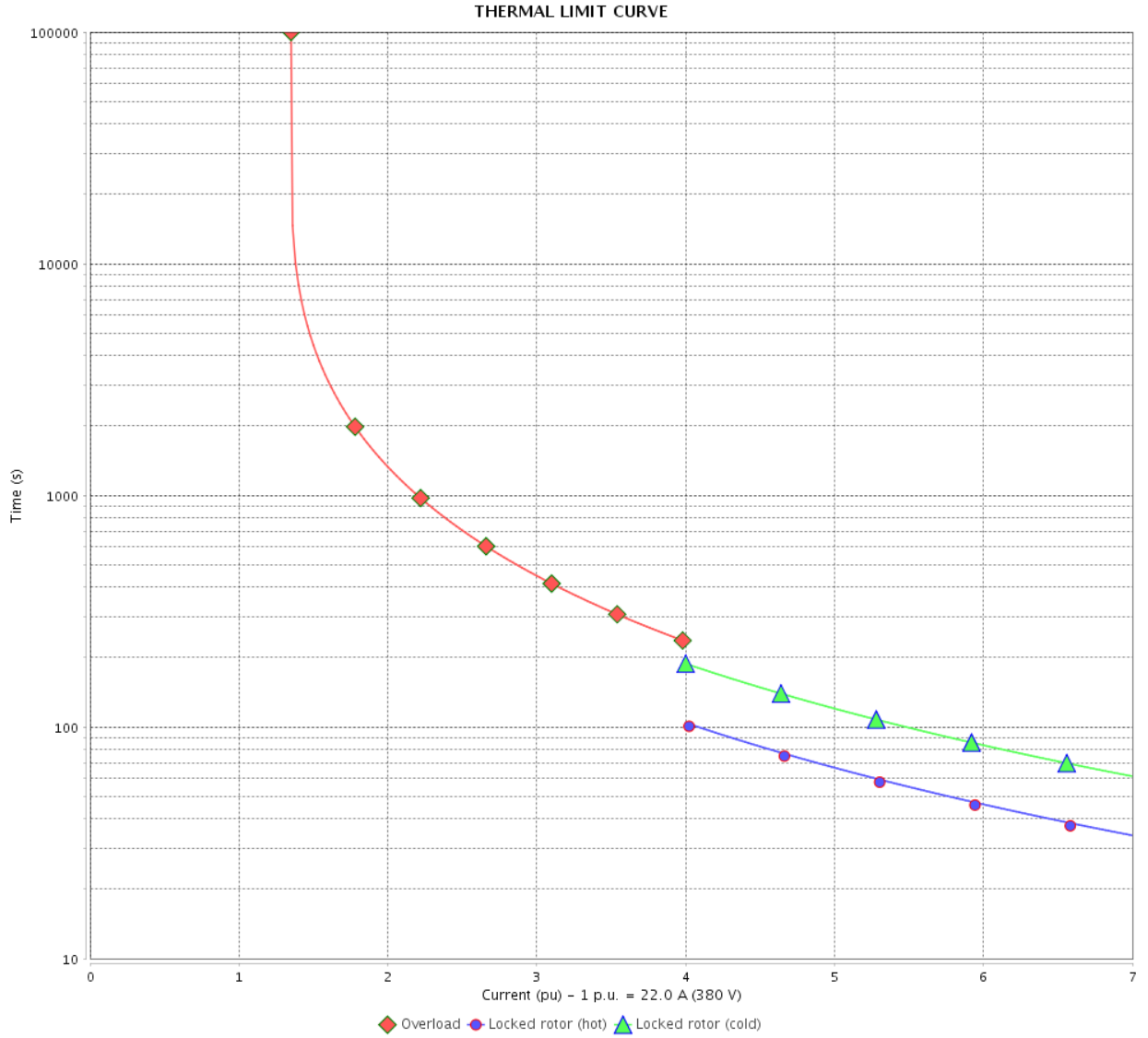
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Three Phase Induction Motor - Squirrel Cage



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Performance : 400 V 50 Hz 4P IE3

Rated current	: 21.4 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 53.2 ft.lb	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Heating constant

Cooling constant

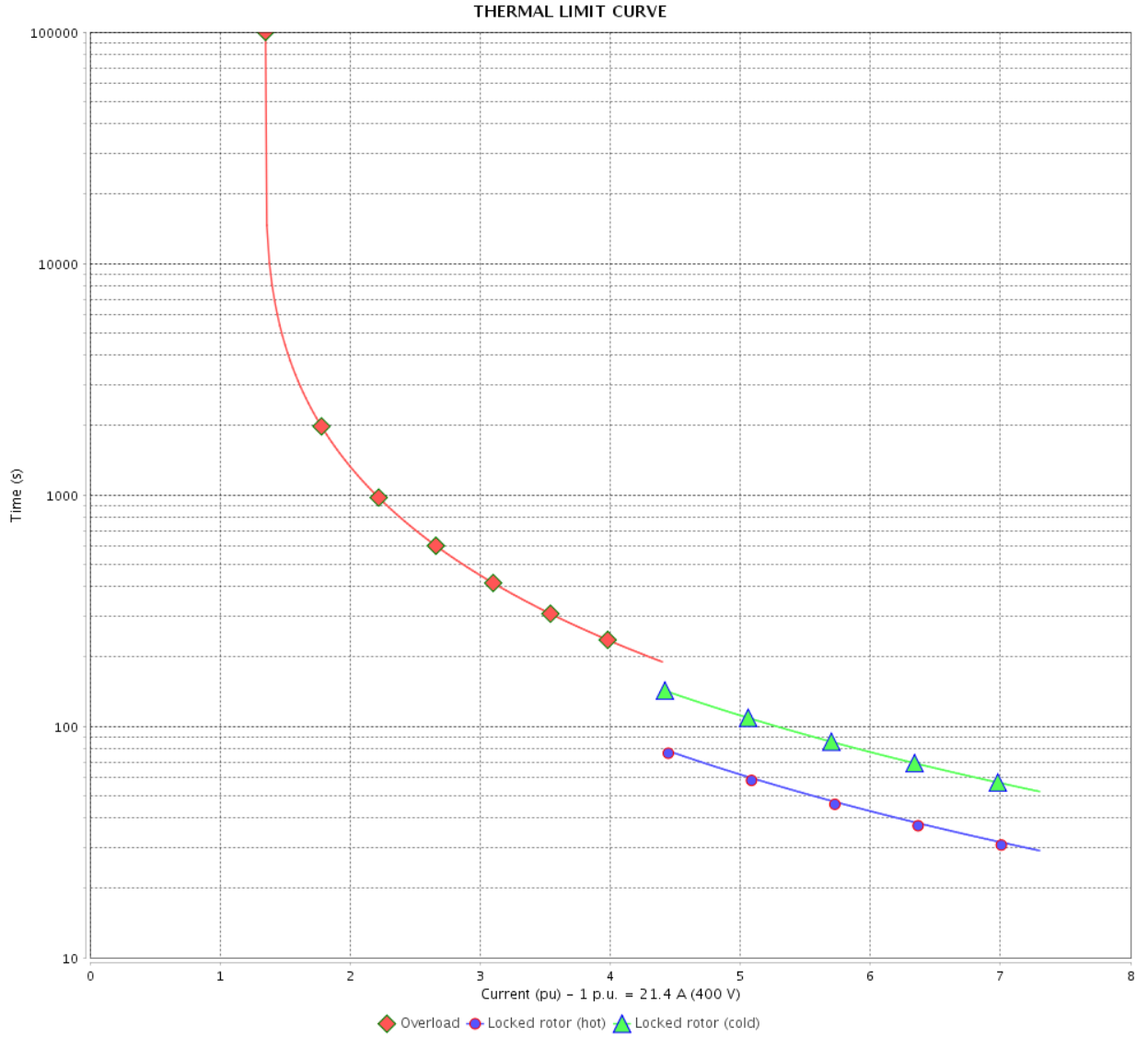
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THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40

Performance : 415 V 50 Hz 4P IE3

Rated current	: 21.2 A	Moment of inertia (J)	: 3.13 sq.ft.lb
LRC	: 7.3	Duty cycle	: Cont.(S1)
Rated torque	: 53.2 ft.lb	Insulation class	: F
Locked rotor torque	: 290 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Heating constant

Cooling constant

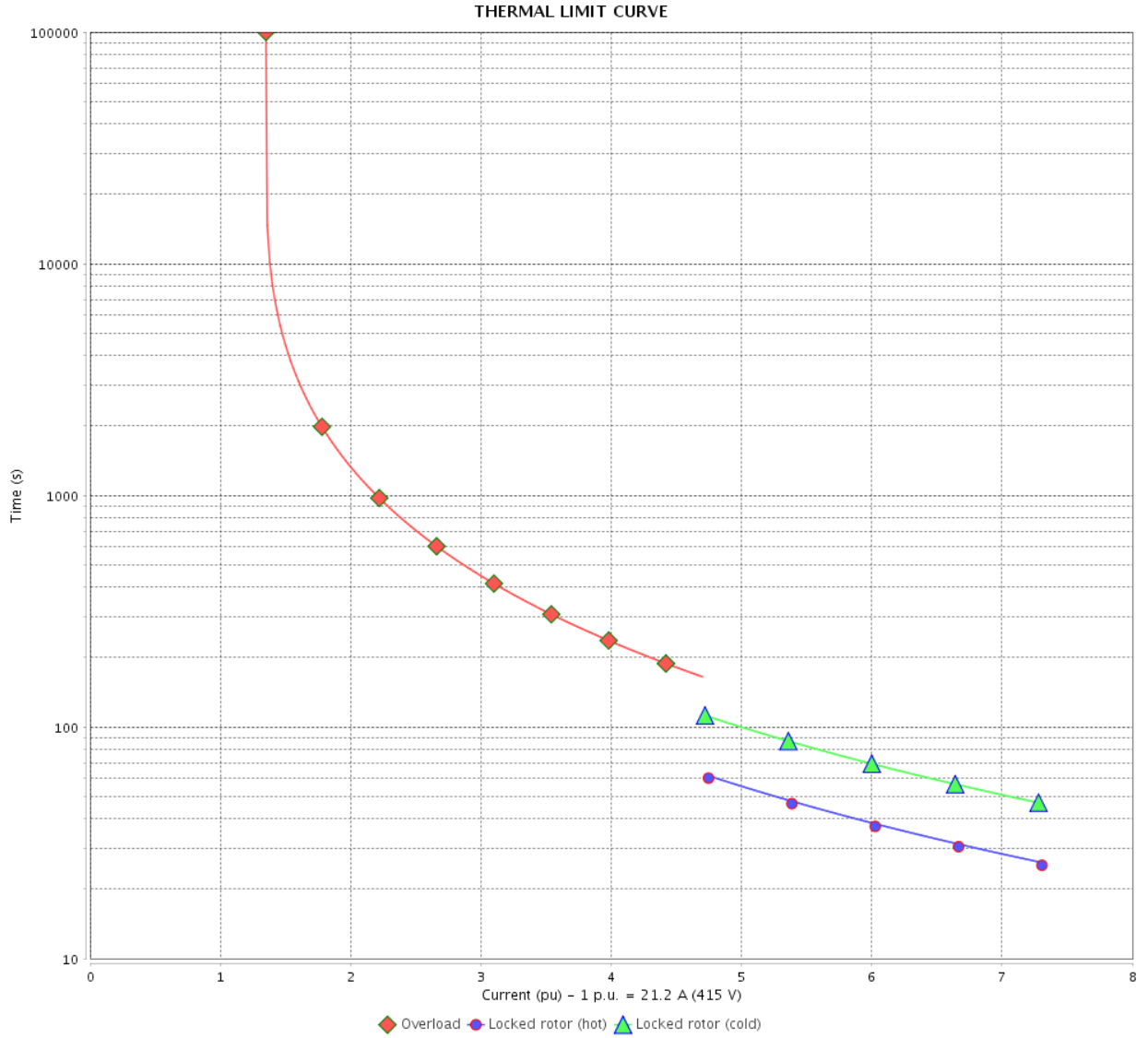
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Three Phase Induction Motor - Squirrel Cage



Customer : _____



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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

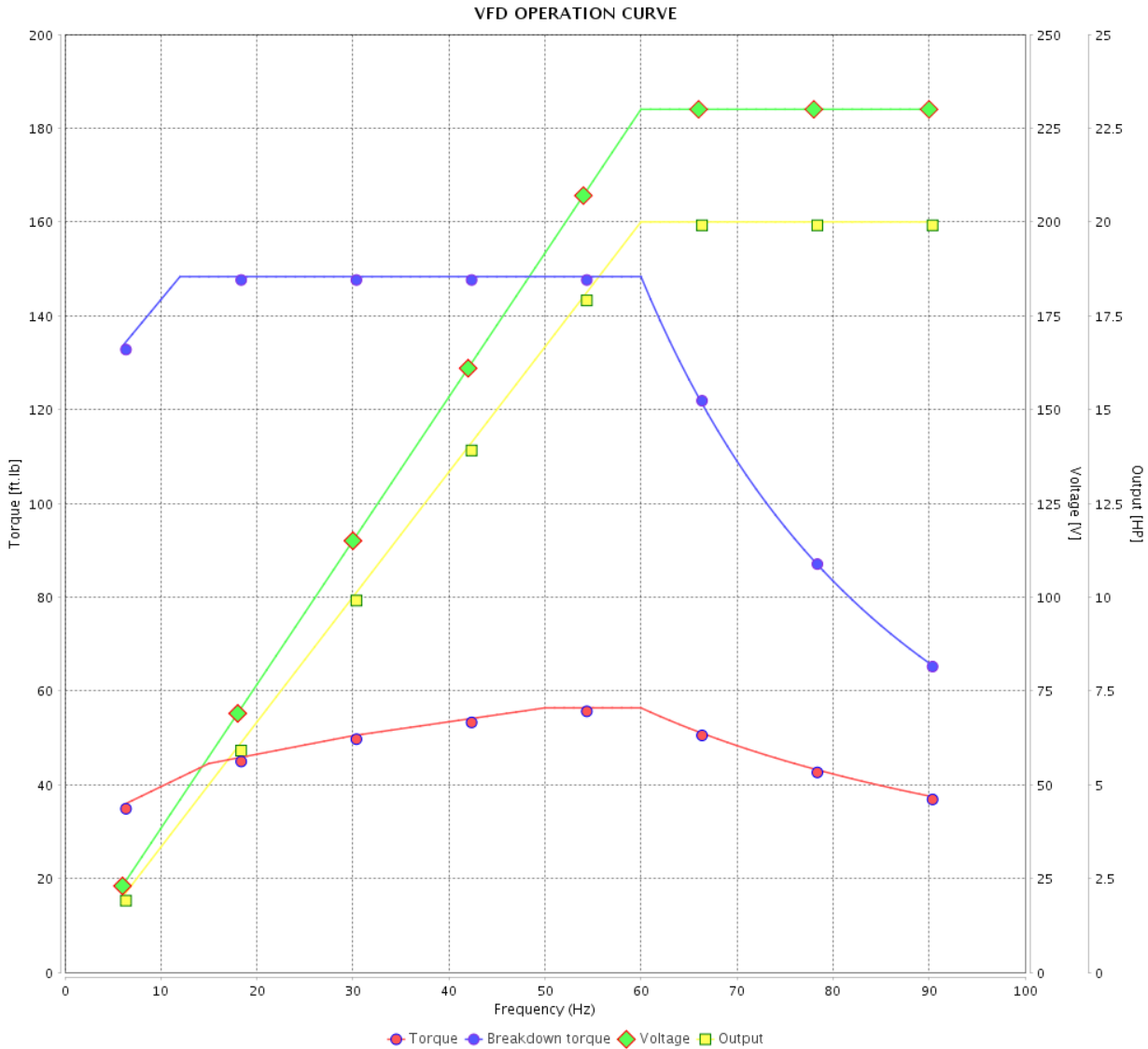


Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40



Performance : 230/460 V 60 Hz 4P

Rated current : 48.2/24.1 A
 LRC : 6.4
 Rated torque : 59.3 ft.lb
 Locked rotor torque : 220 %
 Breakdown torque : 250 %
 Rated speed : 1770 rpm

Moment of inertia (J) : 3.13 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
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Date				

VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

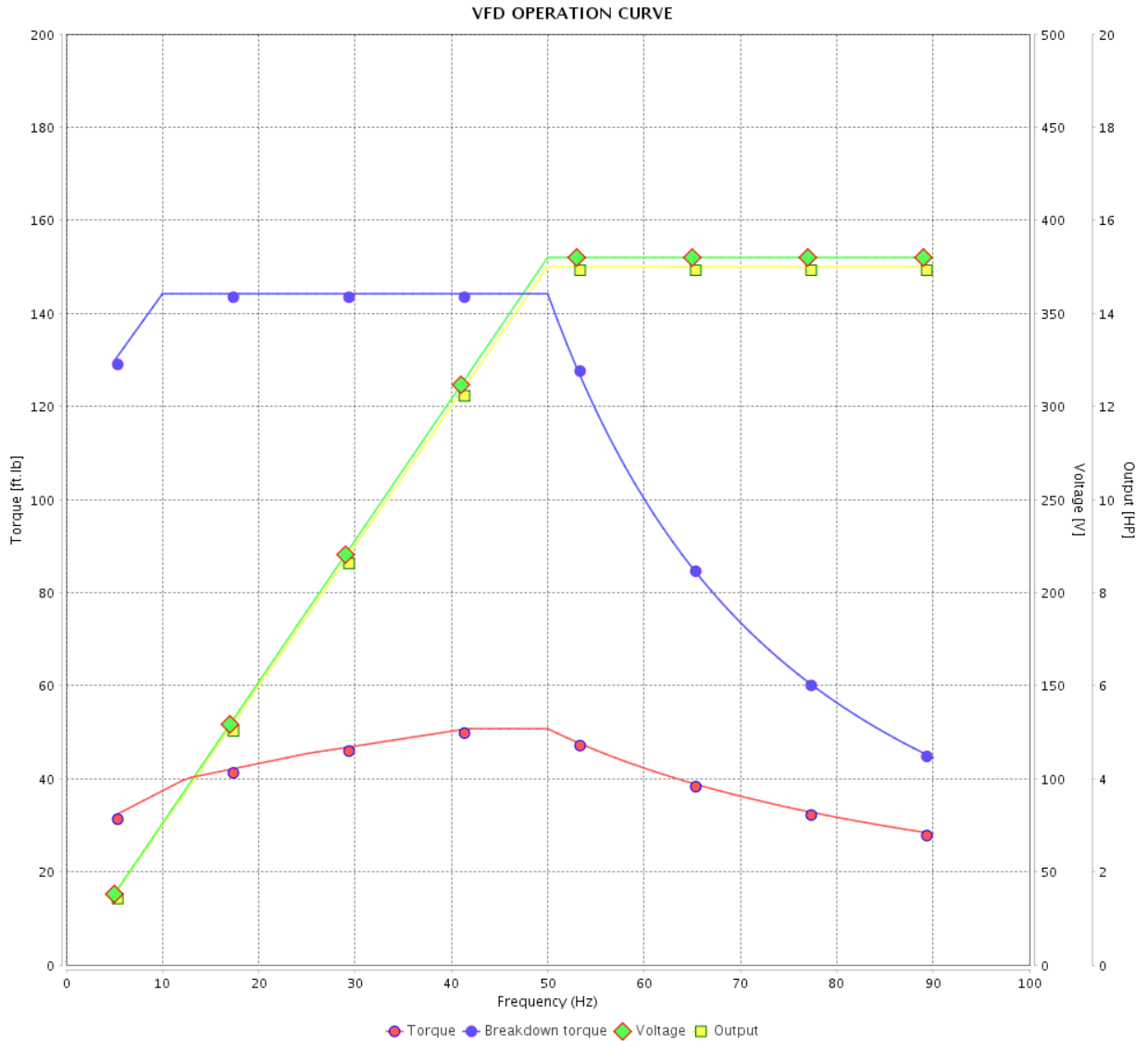


Customer :

Product line : W40 NEMA Premium Efficiency
Three-Phase

Product code : 14494774

Catalog # : 02018OT3E256TC-W40



Performance : 380 V 50 Hz 4P IE3

Rated current : 22.0 A
LRC : 7.0
Rated torque : 53.4 ft.lb
Locked rotor torque : 250 %
Breakdown torque : 270 %
Rated speed : 1475 rpm

Moment of inertia (J) : 3.13 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



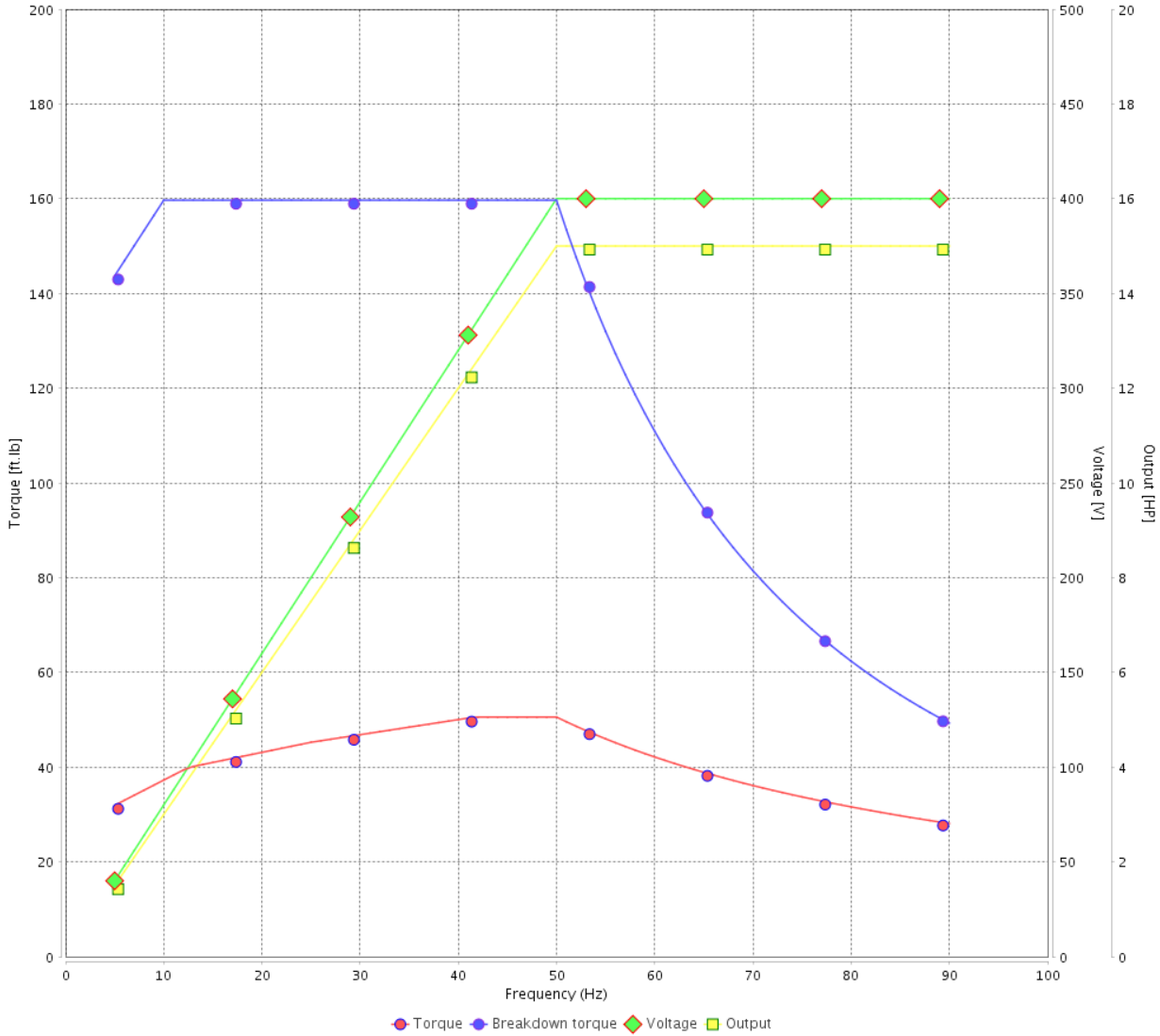
Customer :

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Product code : 14494774

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VFD OPERATION CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current : 21.4 A
 LRC : 7.3
 Rated torque : 53.2 ft.lb
 Locked rotor torque : 240 %
 Breakdown torque : 300 %
 Rated speed : 1480 rpm

Moment of inertia (J) : 3.13 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

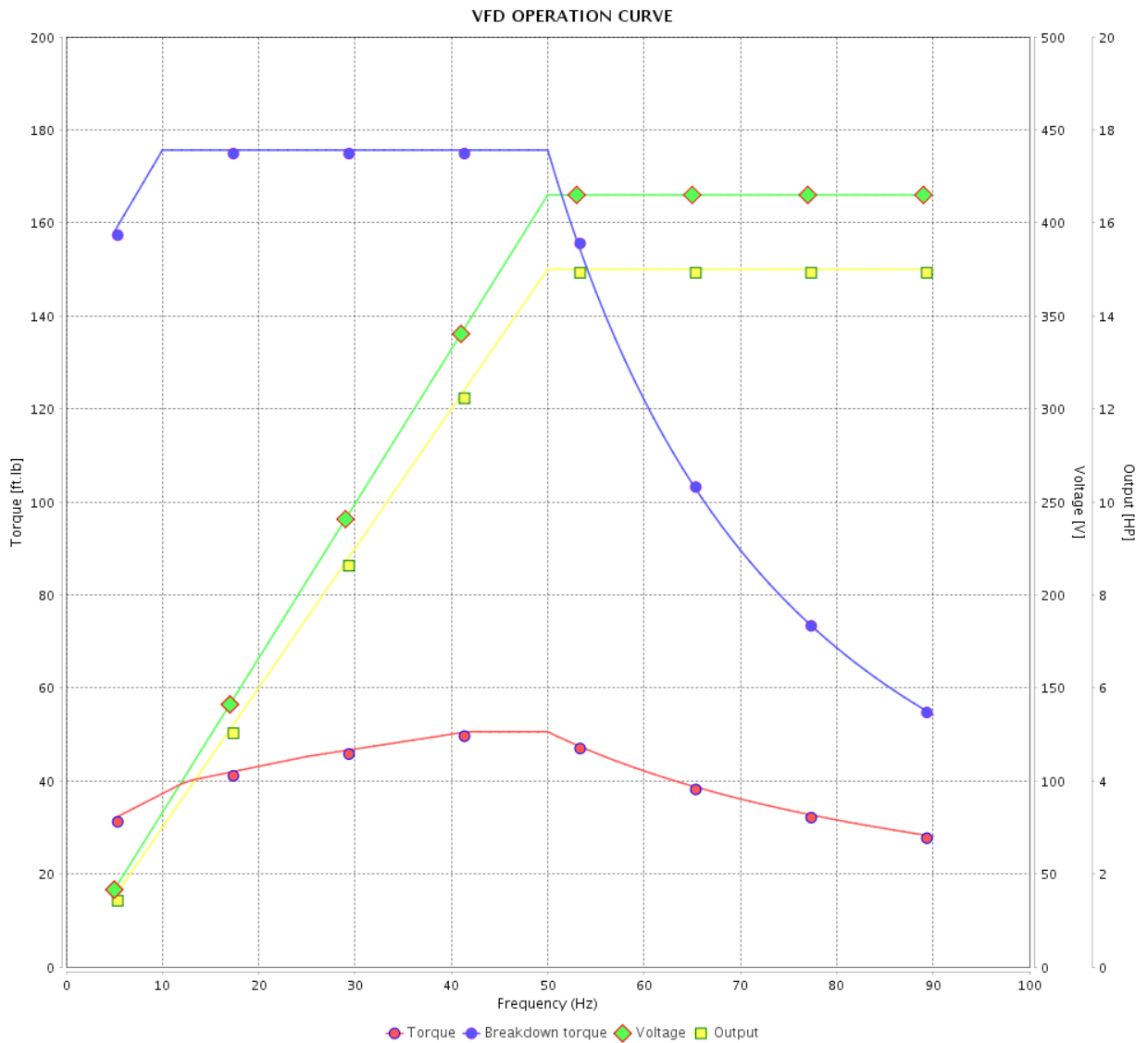


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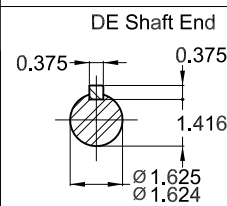
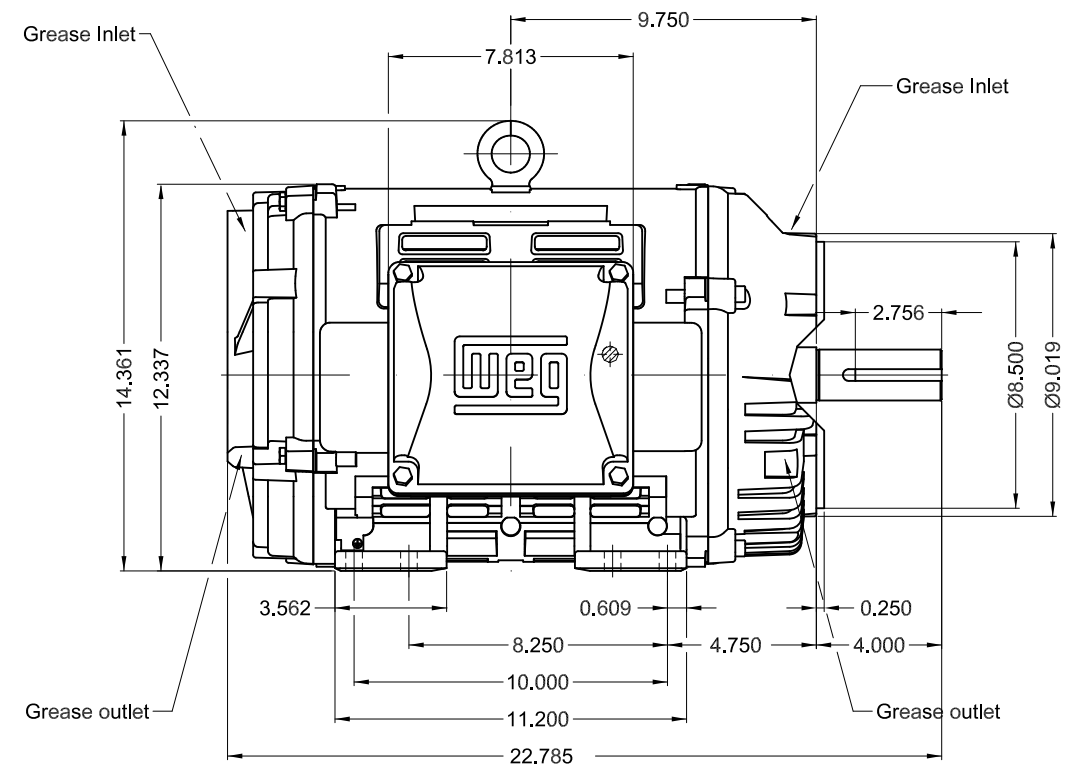
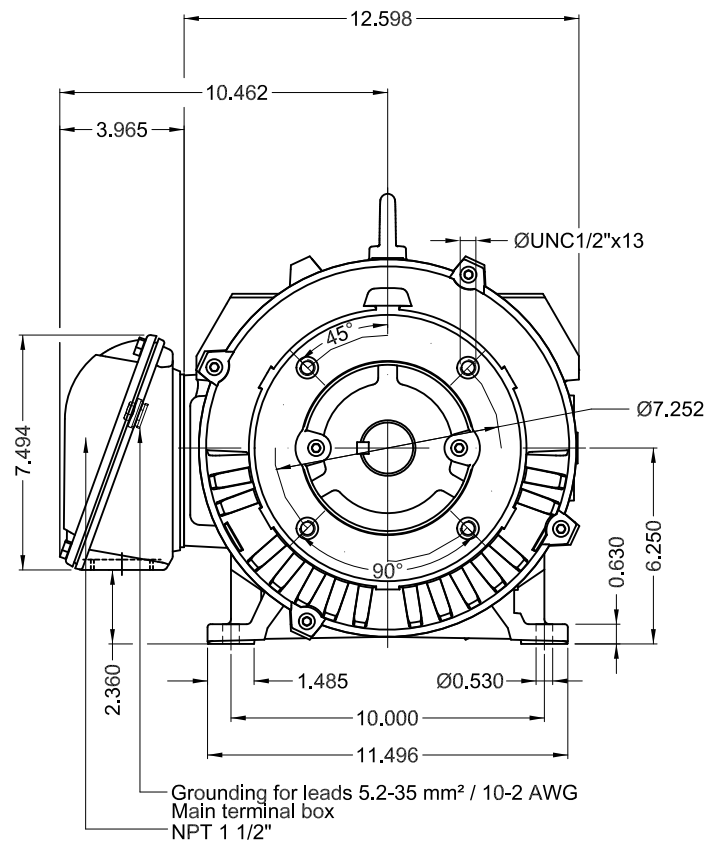


Performance : 415 V 50 Hz 4P IE3

Rated current : 21.2 A
LRC : 7.3
Rated torque : 53.2 ft.lb
Locked rotor torque : 290 %
Breakdown torque : 330 %
Rated speed : 1480 rpm

Moment of inertia (J) : 3.13 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

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

20 HP 04 Poles 60 Hz A

1:6

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER	THREE PH. MOTOR W40 PREM. EFF.					
CHECKED		FRAME 254/6TC IP23 ODP					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW
WDD



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



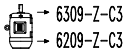
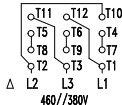
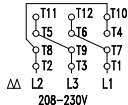
IEC 60034-1
 MOD.T01#FOXON



For 60Hz use on PWM, VT 1000:1, CT 3:1, 1.0SF

MODEL 020180T3E256TC-W40
 MADE IN BRAZIL
 14494774

PH 3	FR 254/6TC	HP(kW) 20.0(15.0)	Hz 60
V 230/460	A 48.2/24.1	RPM 1770	DES B
NEMA NOM EFF 93.0 %	INS. CL. F Δ T 80 K	IP23	
ENCL ODP	DUTY CONT.	AMB. 40°C	
CODE G	PF 0.84	SF 1.25	SFA 60.3/30.1
USABLE @208V	53.3 A	SF 1.15	SFA 61.3
15HP 11kW 50Hz 380V 22.0A 1475RPM SF1.00 EFF 91.5% (IE3)	ALT 1000 m.a.s.l.		



MOBIL POLYREX EM
 13 g 20000 h

ALT 1000 m.a.s.l. 282 Lbs