

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :					
Product line	: W40 NEMA Premium Efficiency Three-Phase	Product code :	14503949		
		Catalog # :	04018OT3E324T-W40G		
Frame	: 324T	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>	: 449 lb		
Protection degree	: IP23	Moment of inertia (J)	: 5.69 sq.ft.lb		
Design	: B				
Output [HP]	40	30	30	30	30
Poles	4	4	4	4	4
Frequency [Hz]	60	50	50	50	50
Rated voltage [V]	230/460	380	400	415	415
Rated current [A]	95.2/47.6	43.3	42.2	41.7	41.7
L. R. Amperes [A]	590/295	290	283	313	313
LRC [A]	6.2x(Code G)	6.7x(Code H)	6.7x(Code H)	7.5x(Code J)	7.5x(Code J)
No load current [A]	37.0/18.5	18.3	20.3	22.1	22.1
Rated speed [RPM]	1775	1475	1480	1480	1480
Slip [%]	1.39	1.67	1.33	1.33	1.33
Rated torque [ft.lb]	118	107	106	106	106
Locked rotor torque [%]	200	229	260	280	280
Breakdown torque [%]	240	270	300	330	330
Service factor	1.25	1.00	1.00	1.00	1.00
Temperature rise	80 K	80 K	80 K	80 K	80 K
Locked rotor time	23s (cold) 13s (hot)	30s (cold) 17s (hot)	30s (cold) 17s (hot)	25s (cold) 14s (hot)	25s (cold) 14s (hot)
Noise level <sup>2</sup>	66.0 dB(A)				
Efficiency (%)	25%	93.5	92.4	92.5	92.4
	50%	93.6	92.6	92.6	92.5
	75%	94.1	93.0	93.0	93.0
	100%	94.1	93.0	93.0	93.0
Power Factor	25%	0.44	0.42	0.38	0.34
	50%	0.70	0.68	0.63	0.59
	75%	0.80	0.78	0.75	0.72
	100%	0.84	0.83	0.81	0.79
Bearing type	: Drive end : 6312 Z C3	Non drive end : 6211 Z C3	Foundation loads		
Sealing	: Without	Without	Max. traction		
	Bearing Seal	Bearing Seal	Max. compression		
Lubrication interval	: 20000 h	20000 h			
Lubricant amount	: 21 g	11 g			
Lubricant type	: Mobil Polyrex EM				
Notes					
USABLE @208V 105A SF 1.15 SFA 121A					
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



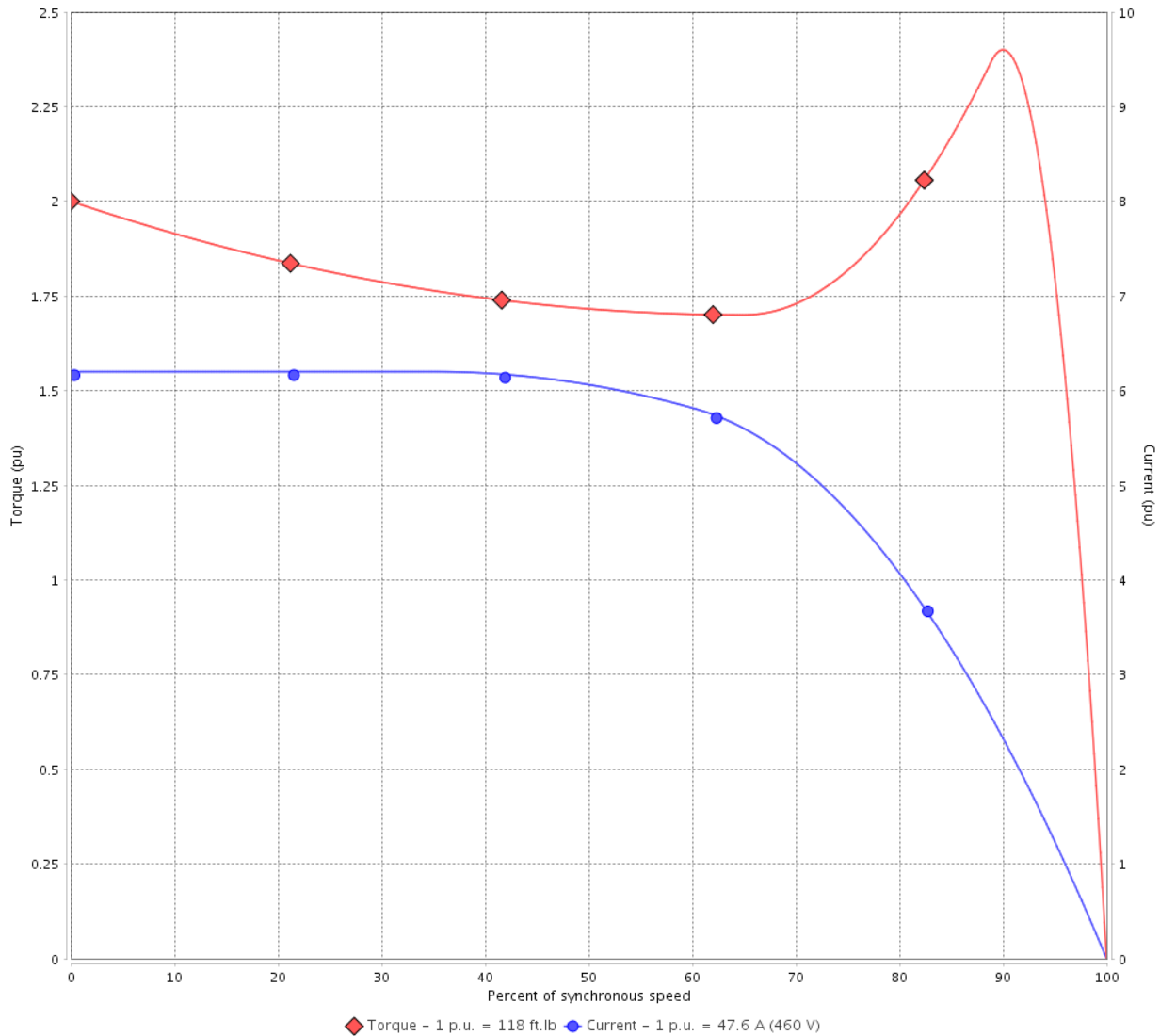
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 4P

Rated current : 95.2/47.6 A  
LRC : 6.2  
Rated torque : 118 ft.lb  
Locked rotor torque : 200 %  
Breakdown torque : 240 %  
Rated speed : 1775 rpm

Moment of inertia (J) : 5.69 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.25  
Temperature rise : 80 K  
Design : B

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

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# TORQUE AND CURRENT VS SPEED CURVE



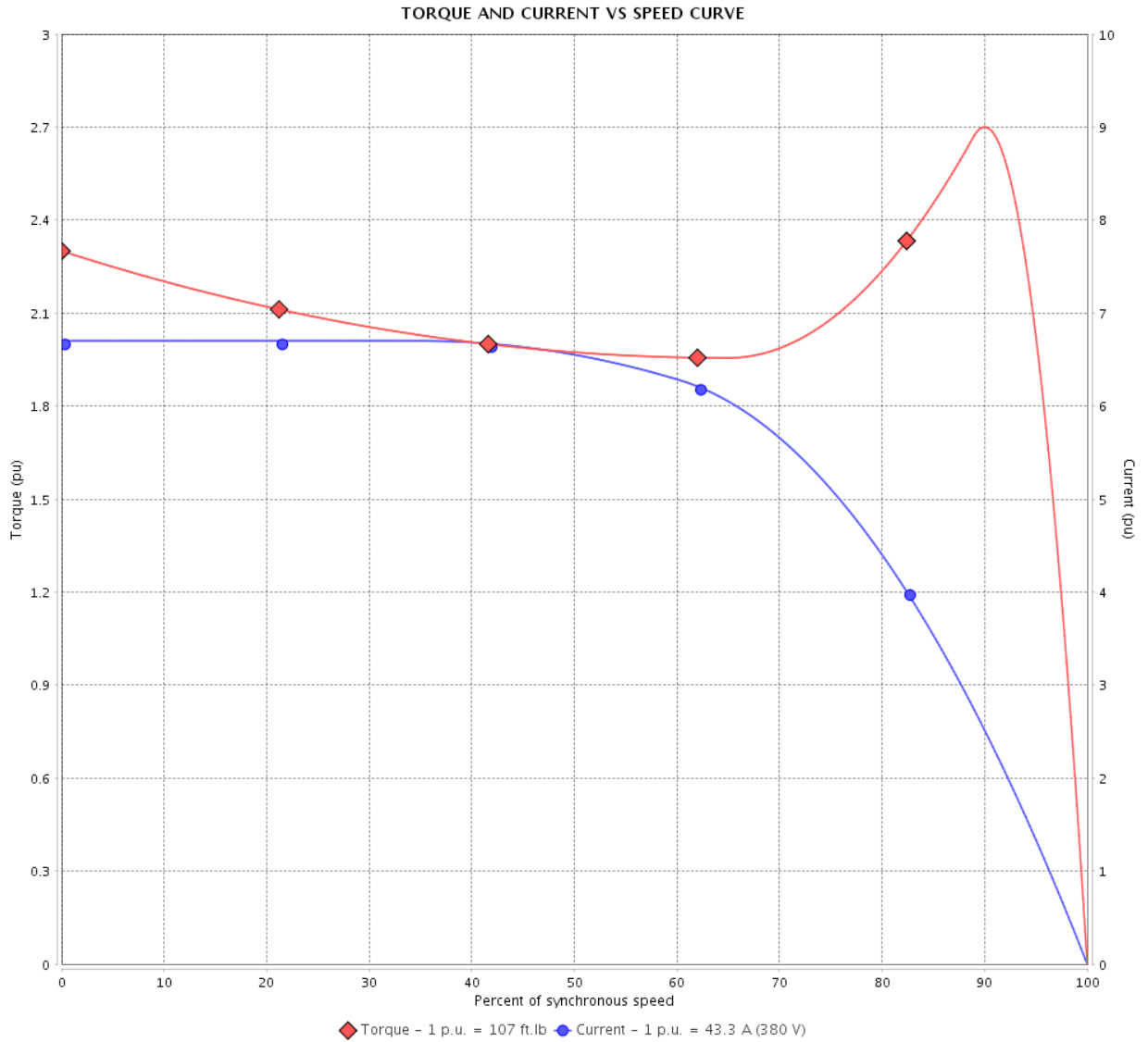
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G



Performance : 380 V 50 Hz 4P IE3

Rated current	: 43.3 A	Moment of inertia (J)	: 5.69 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 107 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

Locked rotor time : 30s (cold) 17s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



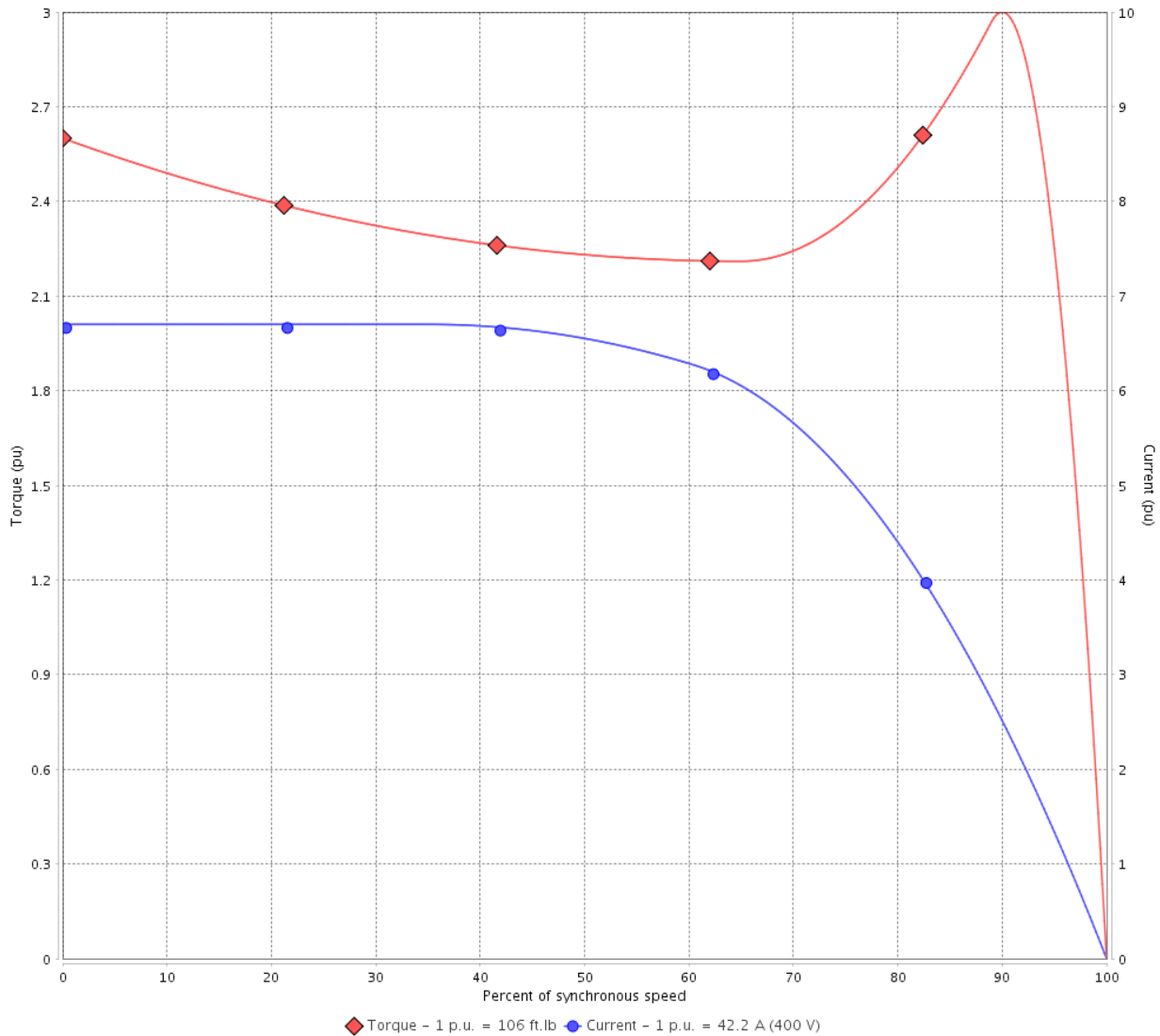
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 4P IE3

Rated current	: 42.2 A	Moment of inertia (J)	: 5.69 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

Locked rotor time : 30s (cold) 17s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



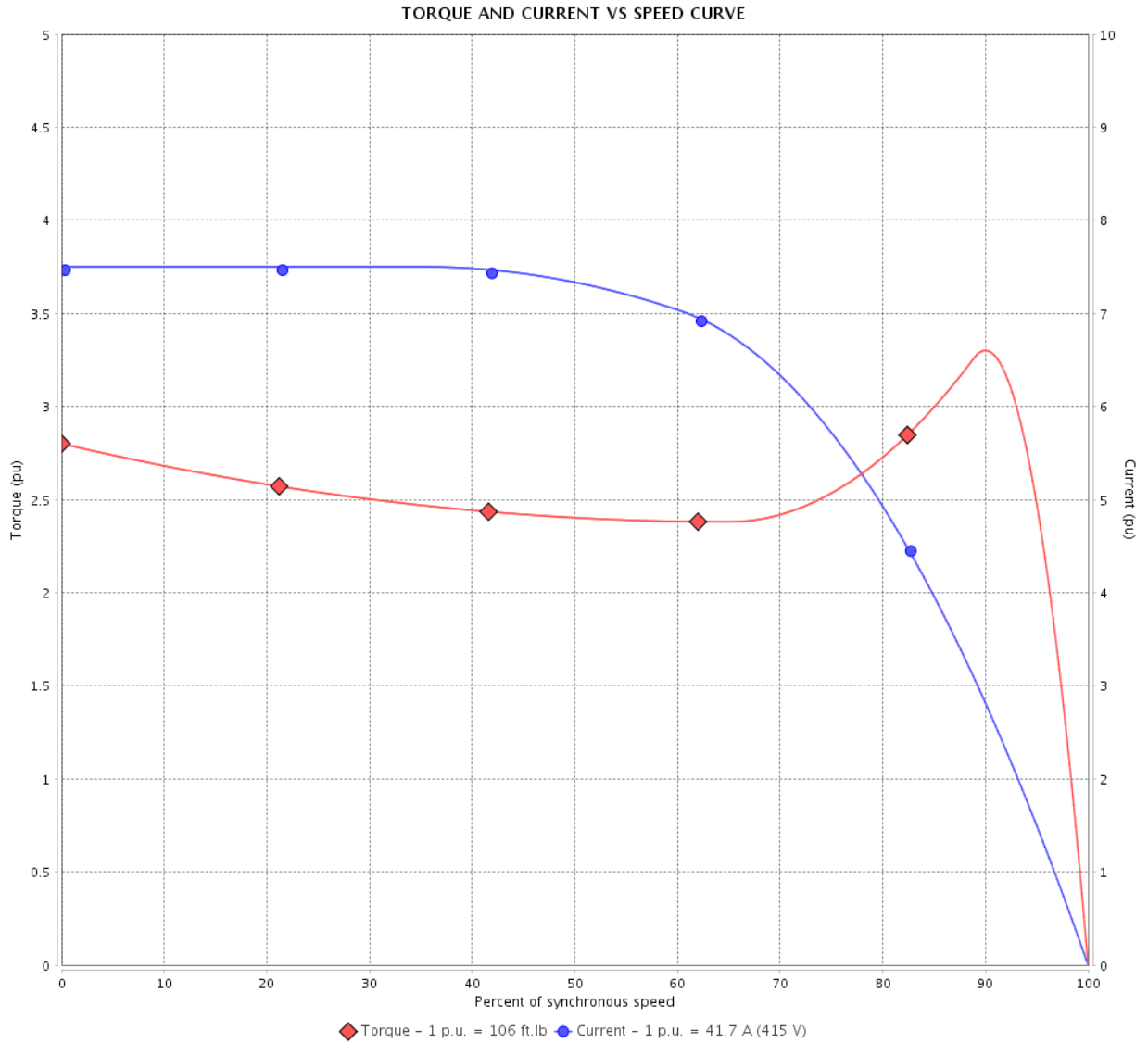
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G



Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.7 A	Moment of inertia (J)	: 5.69 sq.ft.lb
LRC	: 7.5	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	Service factor	: 1.00
Breakdown torque	: 330 %	Temperature rise	: 80 K
Rated speed	: 1480 rpm	Design	: B

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

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# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



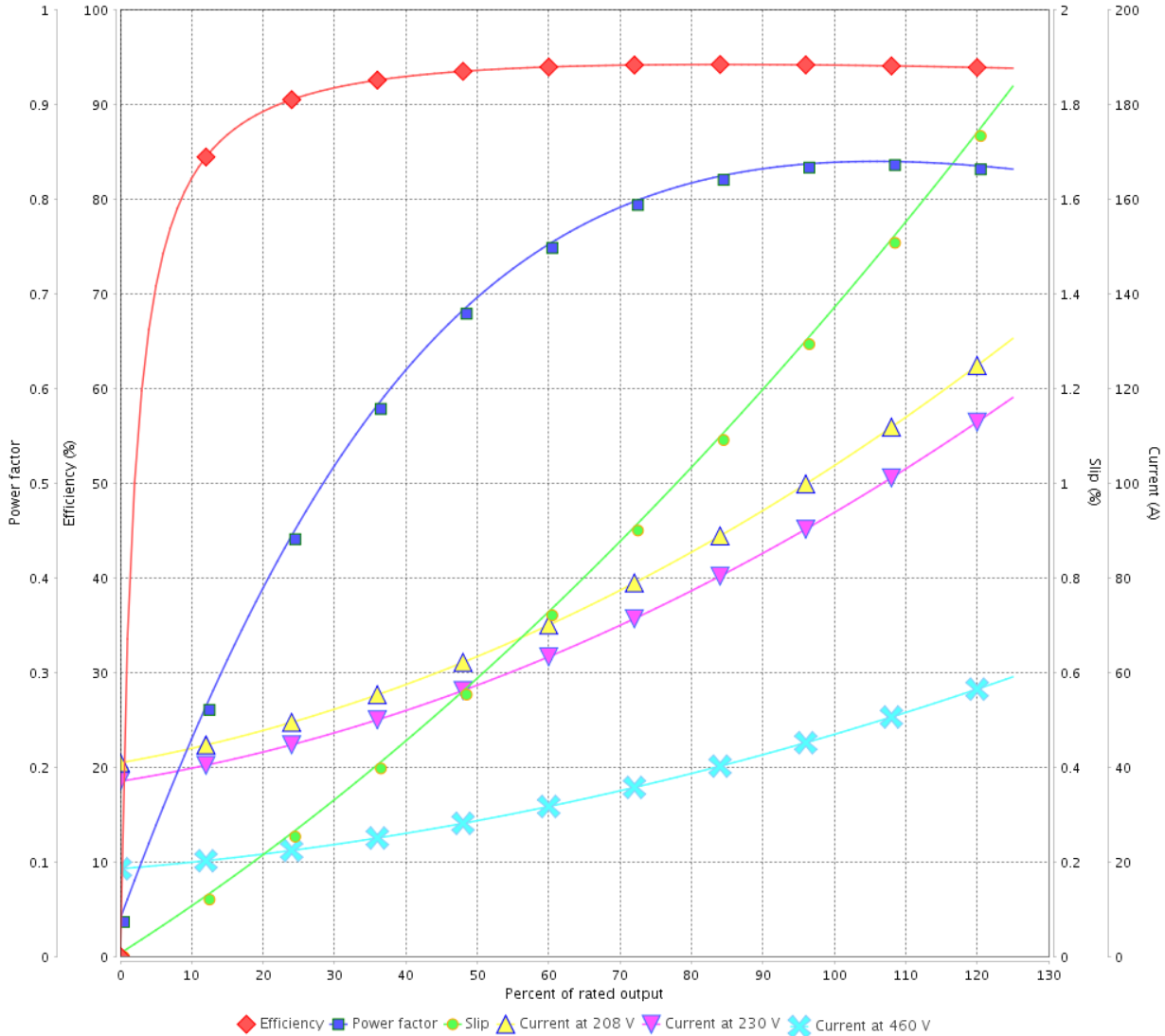
Customer :

Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G

LOAD PERFORMANCE CURVE



Performance : 230/460 V 60 Hz 4P

Rated current : 95.2/47.6 A  
 LRC : 6.2  
 Rated torque : 118 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 1775 rpm

Moment of inertia (J) : 5.69 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

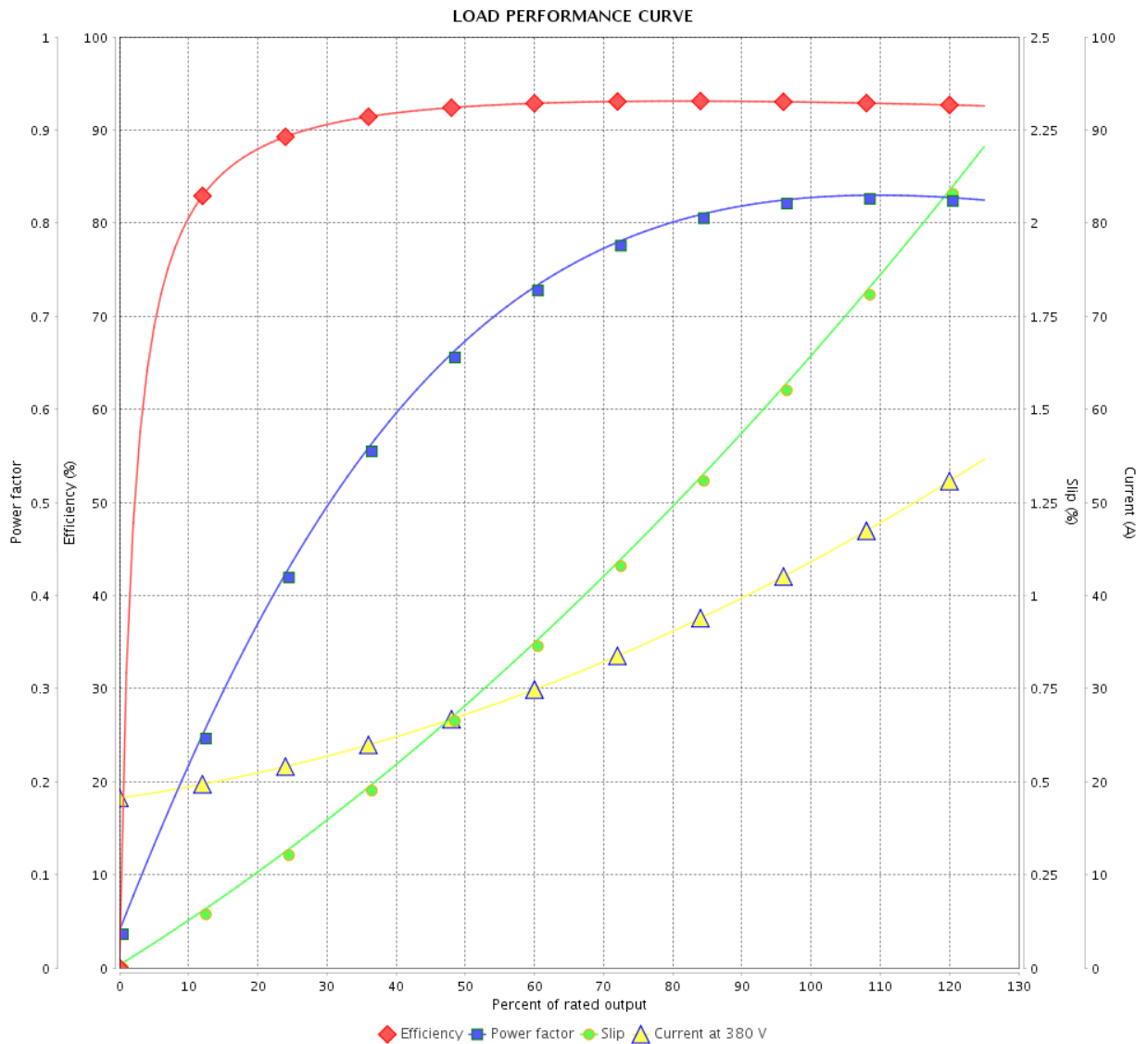


Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G



Performance : 380 V 50 Hz 4P IE3

Rated current : 43.3 A  
 LRC : 6.7  
 Rated torque : 107 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 5.69 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

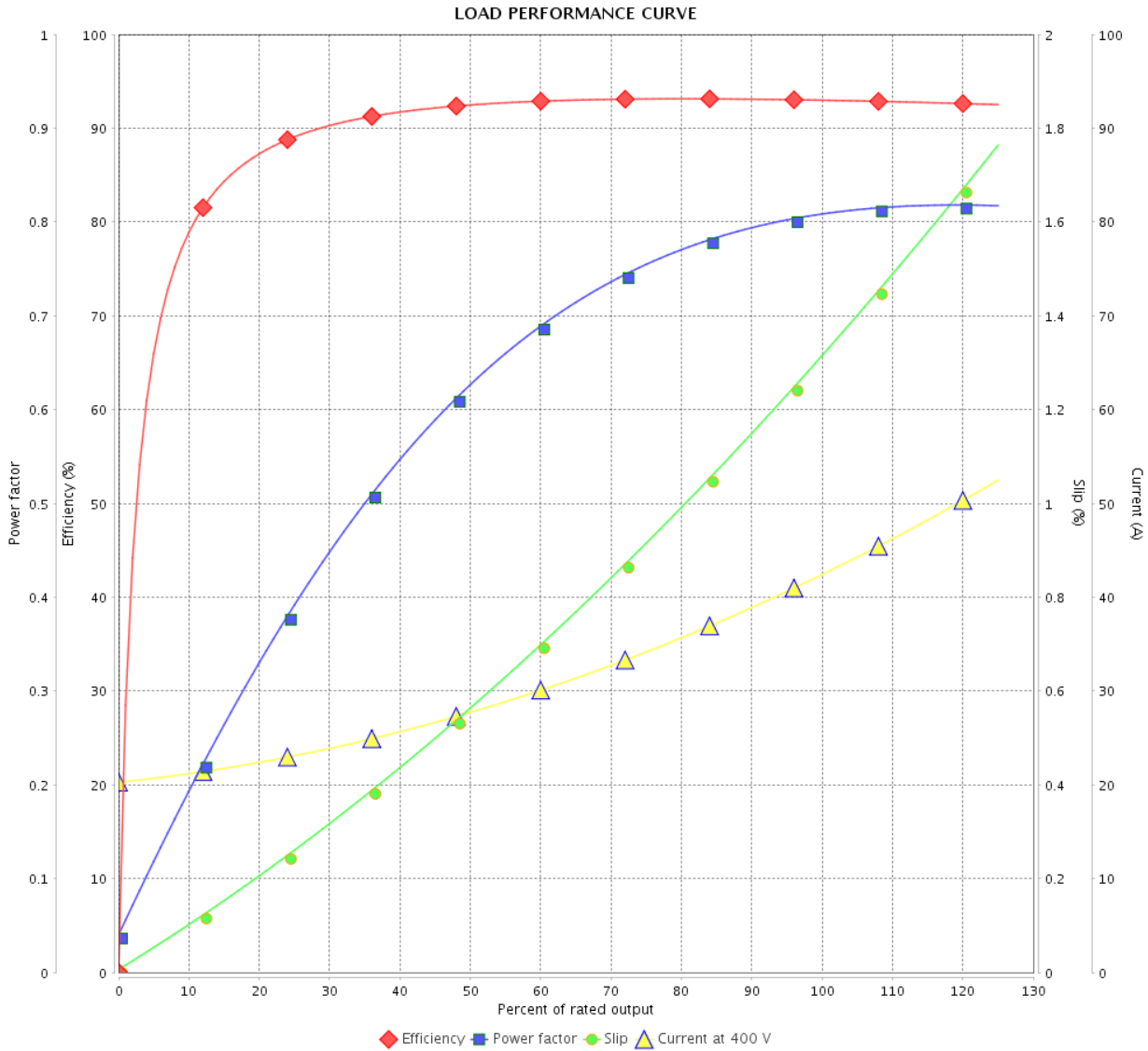


Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G



Performance : 400 V 50 Hz 4P IE3

Rated current : 42.2 A  
 LRC : 6.7  
 Rated torque : 106 ft.lb  
 Locked rotor torque : 260 %  
 Breakdown torque : 300 %  
 Rated speed : 1480 rpm

Moment of inertia (J) : 5.69 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

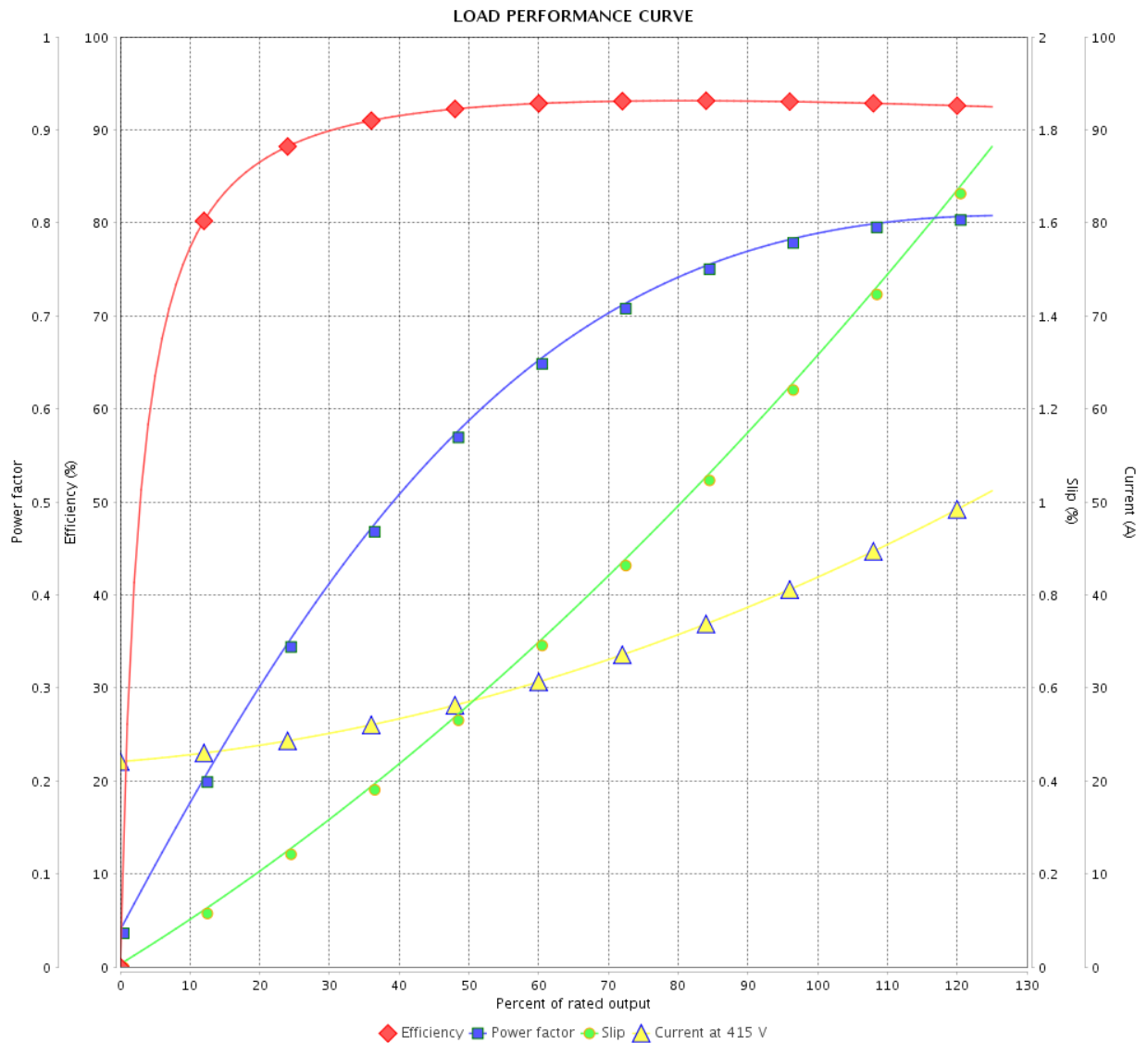


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 Locked rotor torque : 280 %  
 Breakdown torque : 330 %  
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Moment of inertia (J) : 5.69 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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# THERMAL LIMIT CURVE

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Rated speed : 1775 rpm

Moment of inertia (J) : 5.69 sq.ft.lb  
Duty cycle : Cont.(S1)  
Insulation class : F  
Service factor : 1.25  
Temperature rise : 80 K  
Design : B

Heating constant

Cooling constant

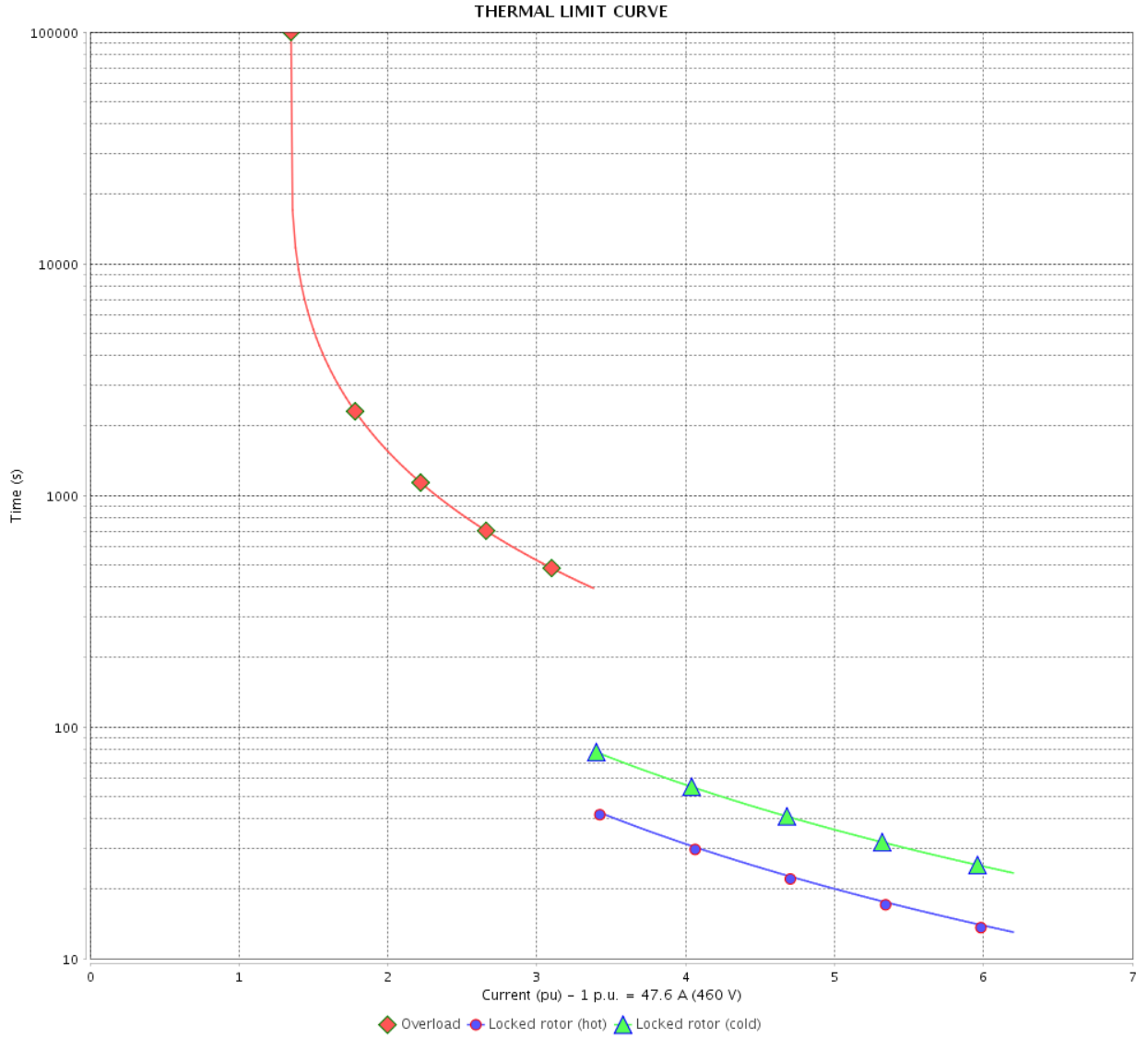
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Three Phase Induction Motor - Squirrel Cage



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Performance : 380 V 50 Hz 4P IE3

Rated current	: 43.3 A	Moment of inertia (J)	: 5.69 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 107 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 270 %	Temperature rise	: 80 K
Rated speed	: 1475 rpm	Design	: B

Heating constant

Cooling constant

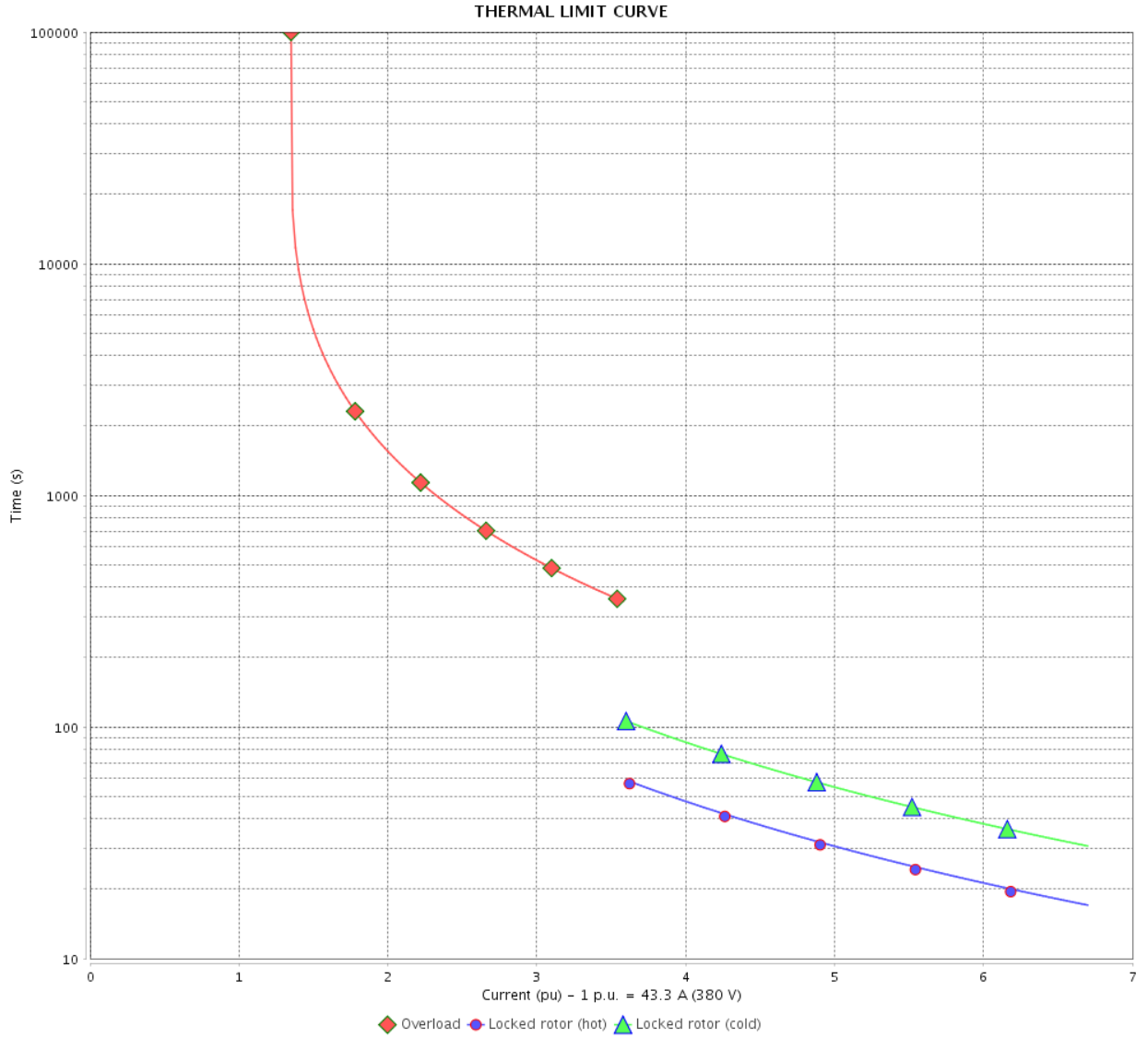
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Three Phase Induction Motor - Squirrel Cage



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Product line : W40 NEMA Premium Efficiency  
Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G

Performance : 400 V 50 Hz 4P IE3

Rated current : 42.2 A	Moment of inertia (J) : 5.69 sq.ft.lb
LRC : 6.7	Duty cycle : Cont.(S1)
Rated torque : 106 ft.lb	Insulation class : F
Locked rotor torque : 260 %	Service factor : 1.00
Breakdown torque : 300 %	Temperature rise : 80 K
Rated speed : 1480 rpm	Design : B

Heating constant

Cooling constant

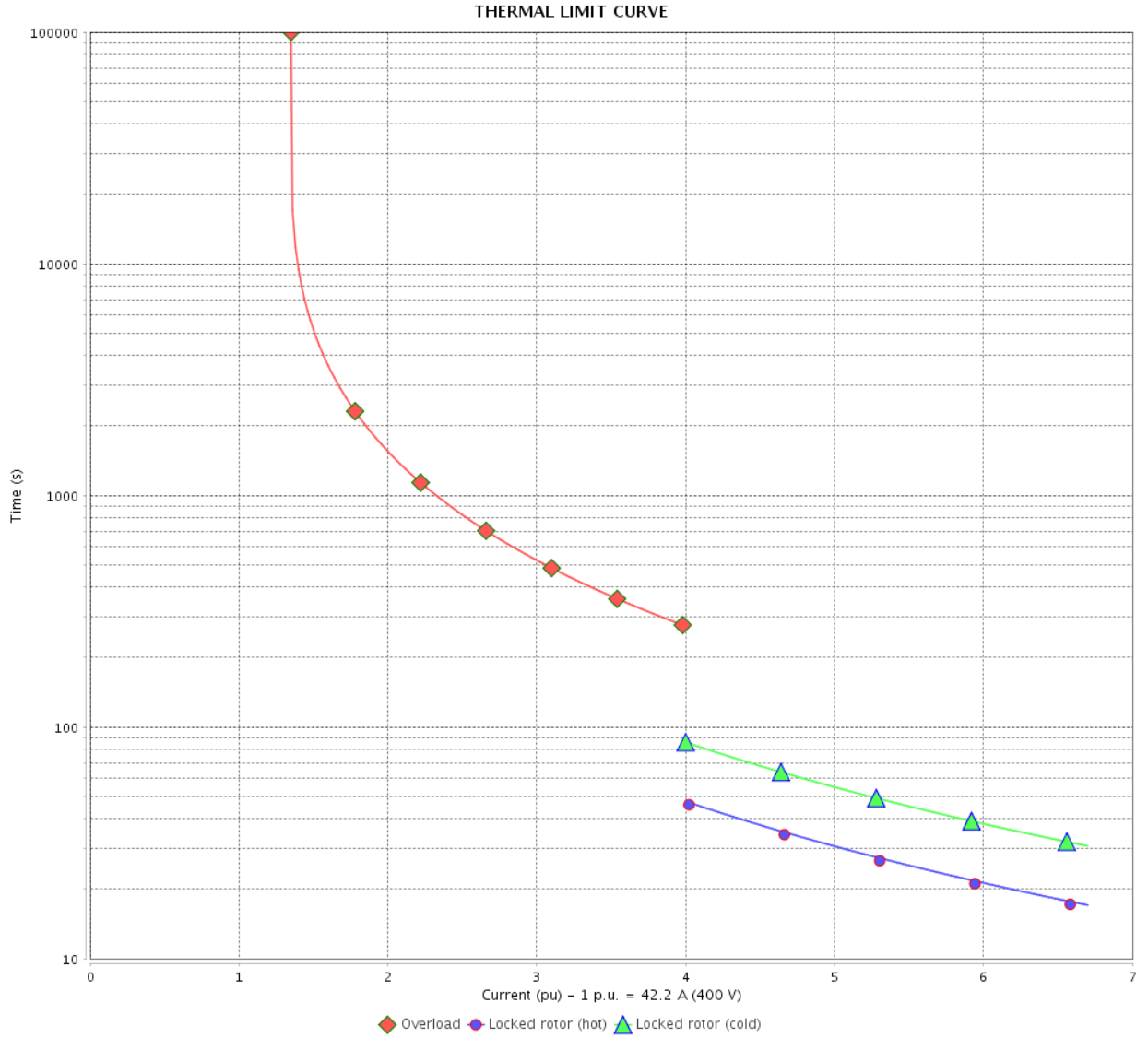
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Product code : 14503949

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Performance : 415 V 50 Hz 4P IE3

Rated current	: 41.7 A	Moment of inertia (J)	: 5.69 sq.ft.lb
LRC	: 7.5	Duty cycle	: Cont.(S1)
Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 280 %	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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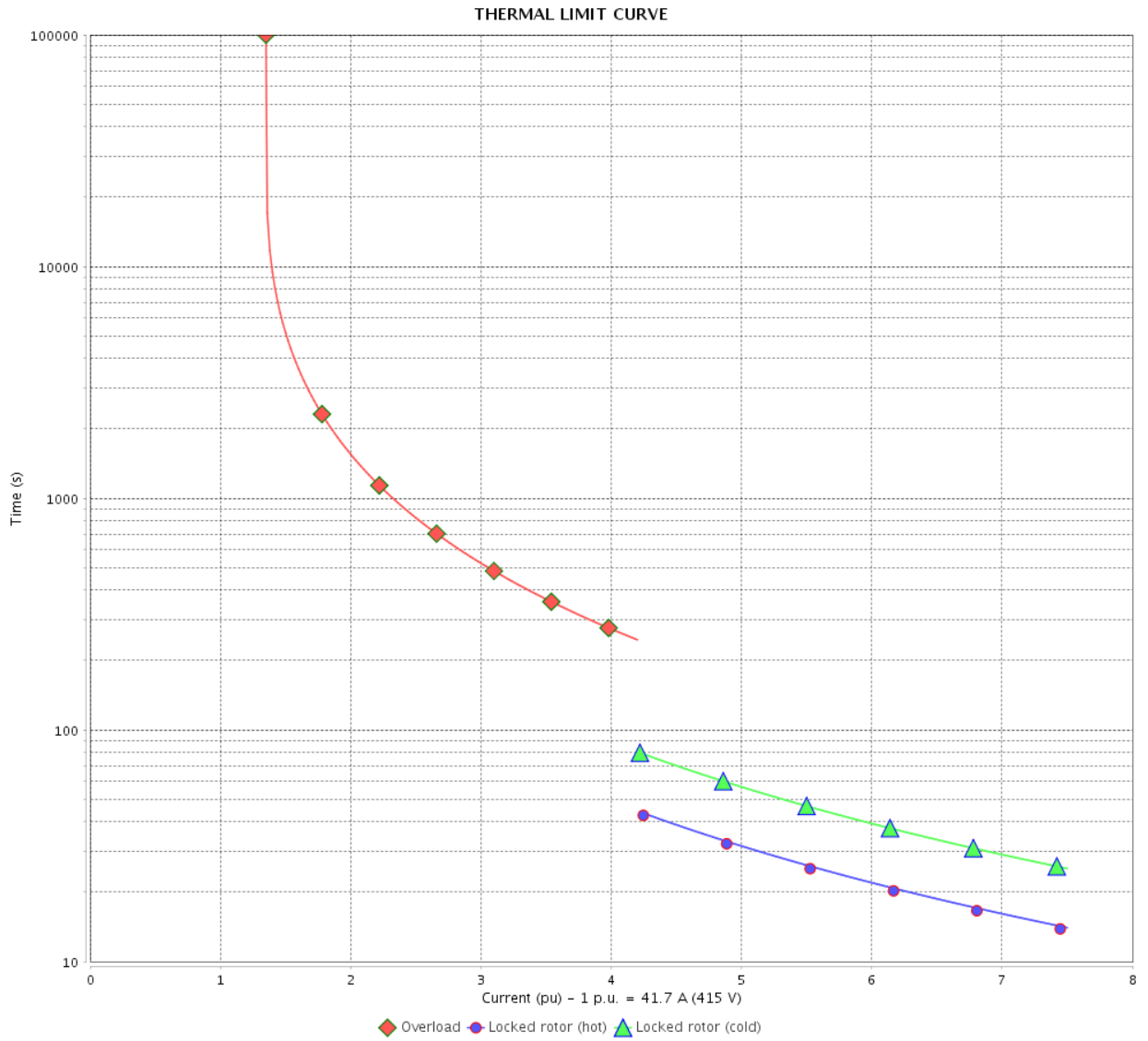


# THERMAL LIMIT CURVE

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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

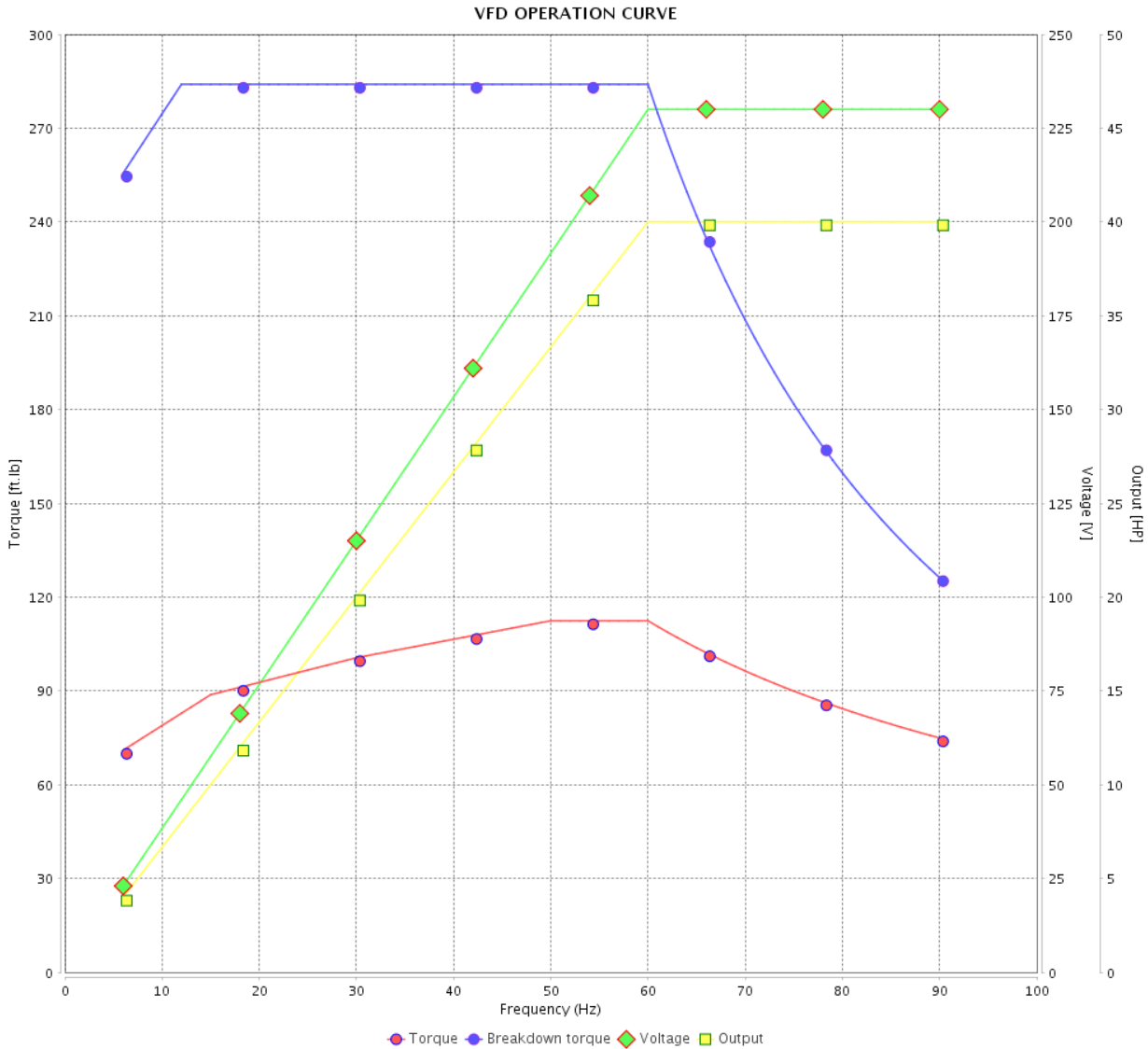


Customer :

Product line : W40 NEMA Premium Efficiency Three-Phase

Product code : 14503949

Catalog # : 04018OT3E324T-W40G



Performance : 230/460 V 60 Hz 4P

Rated current : 95.2/47.6 A  
 LRC : 6.2  
 Rated torque : 118 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 240 %  
 Rated speed : 1775 rpm

Moment of inertia (J) : 5.69 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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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

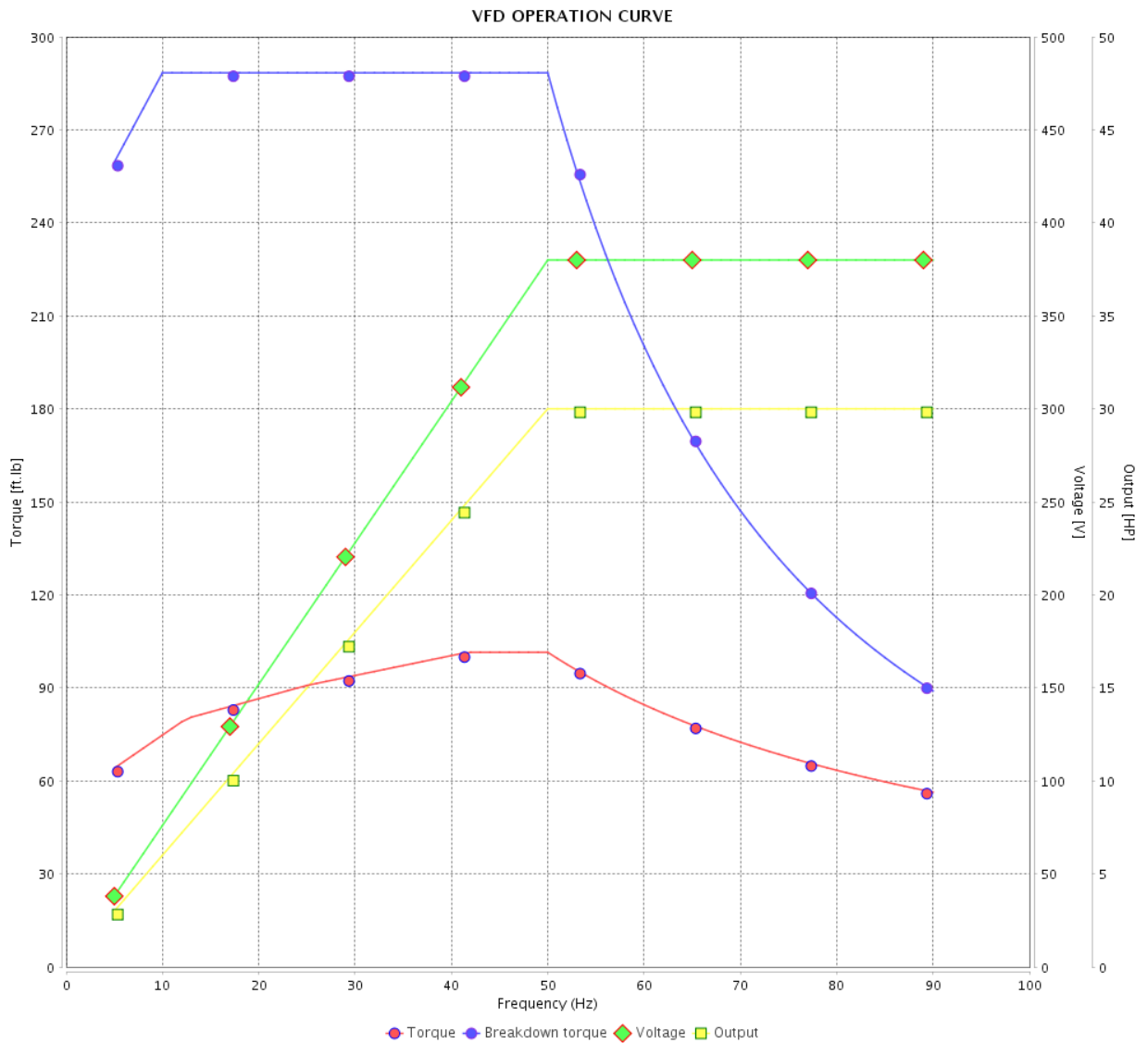


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Performance : 380 V 50 Hz 4P IE3

Rated current : 43.3 A  
 LRC : 6.7  
 Rated torque : 107 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 270 %  
 Rated speed : 1475 rpm

Moment of inertia (J) : 5.69 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



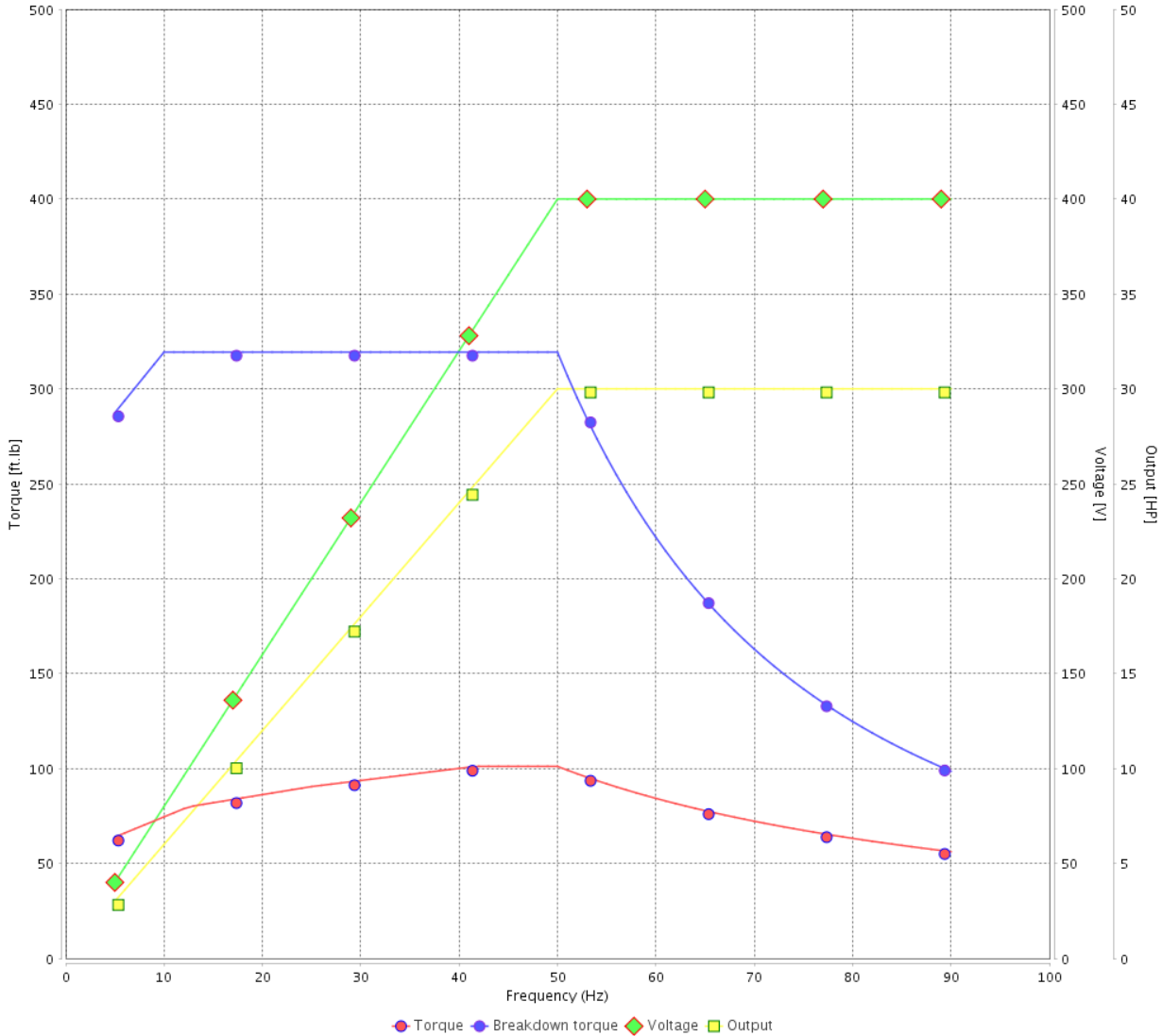
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VFD OPERATION CURVE



Performance : 400 V 50 Hz 4P IE3

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Rated torque	: 106 ft.lb	Insulation class	: F
Locked rotor torque	: 260 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
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# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage

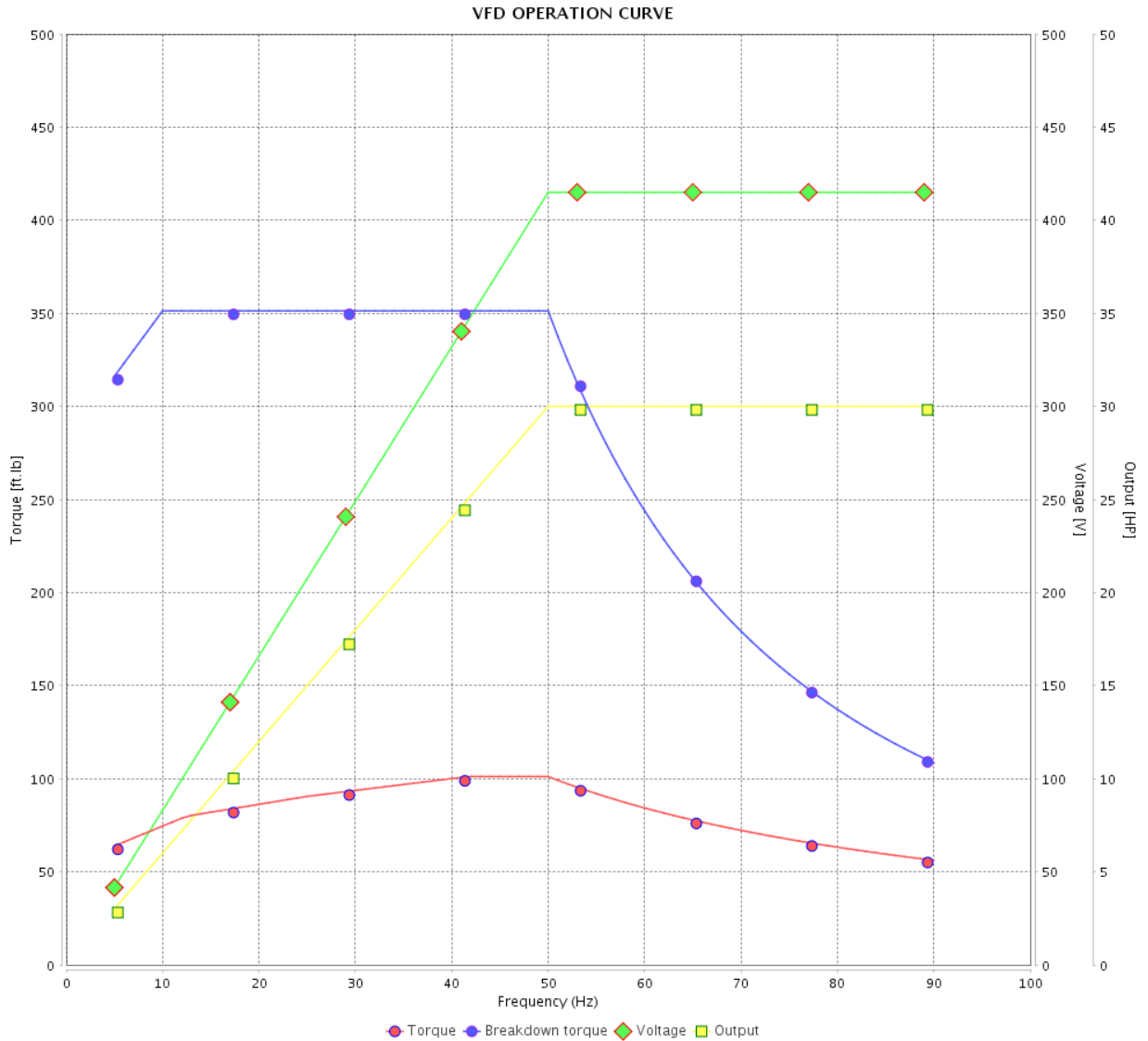


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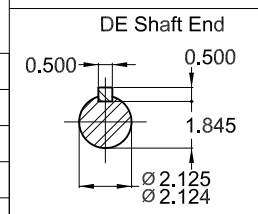
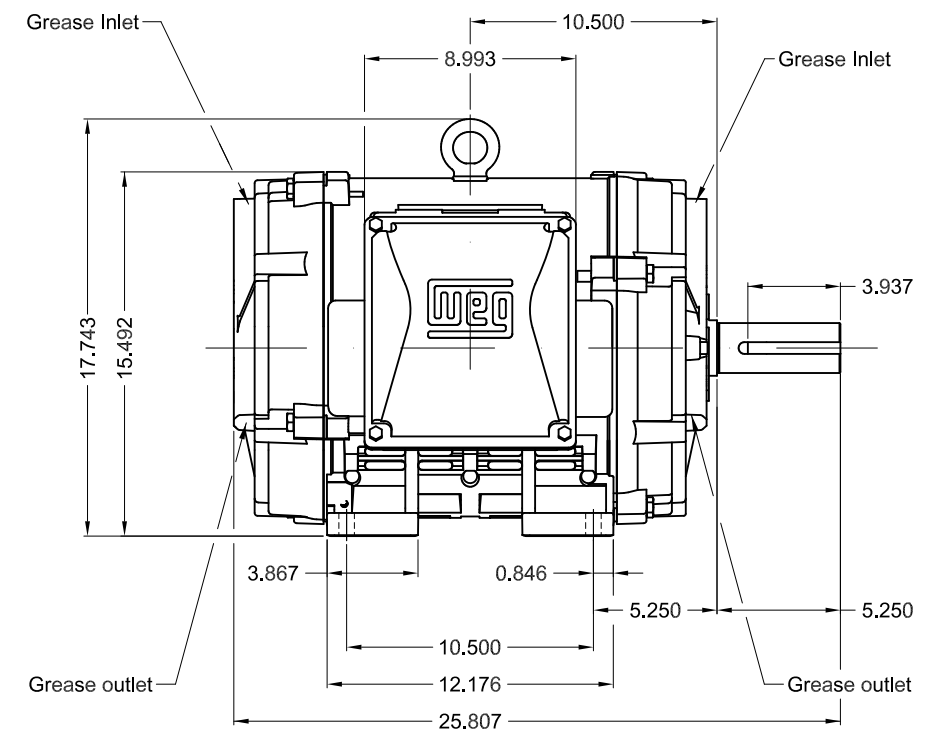
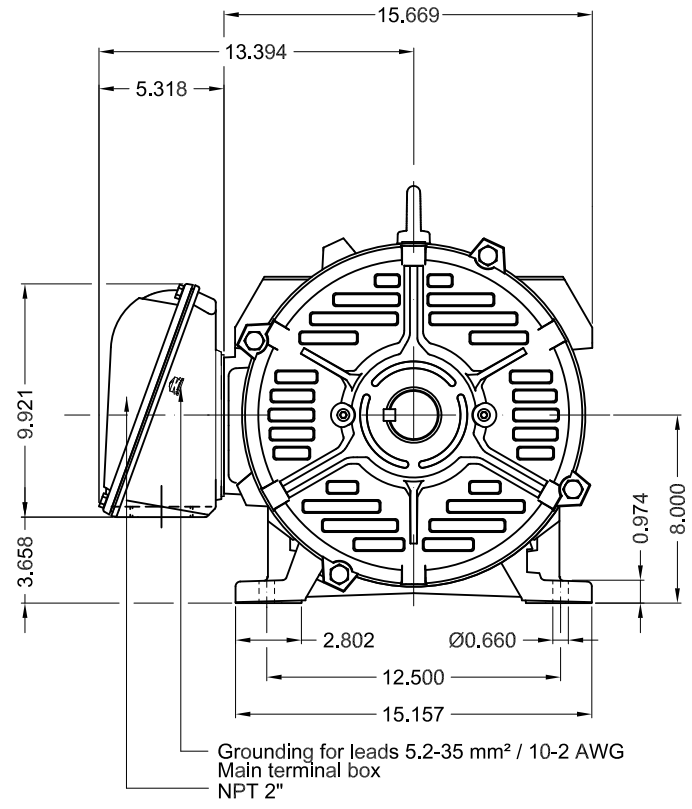


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Rated current : 41.7 A  
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Rated torque : 106 ft.lb  
Locked rotor torque : 280 %  
Breakdown torque : 330 %  
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Moment of inertia (J) : 5.69 sq.ft.lb  
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Design : B

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Internal AEGIS ground ring on the DE
Color RAL 5009
Painting plan 203A
Mounting NEMA F-1
Mounting B3R(D)

40 HP 04 Poles 60 Hz A

1:8

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W40 PREM. EFF.					
CHECKED		FRAME 324T 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 040180T3E324T-W40G  
 MADE IN BRAZIL  
 14503949

PH 3	FR 324T	HP(kW) 40.0(30.0)		Hz 60	
V 230/460		A 95.2/47.6		RPM 1775	DES B
NEMA NOM EFF 94.1 %		INS. CL. F $\Delta$ T 80 K		IP23	
ENCL ODP		DUTY CONT.		AMB. 40°C	
CODE G	PF 0.84	SF 1.25	SFA 119/59.5		
USABLE @208V 105 A		SF 1.15	SFA 121		
30HP 22kW 50Hz 380V 43.3A 1475RPM SF1.00 EFF 93.0% (IE3)				ALT 1000 m.a.s.l.	450 Lbs

<p><math>\Delta</math> L2 L3 L1 208-230V</p>	<p><math>\Delta</math> L2 L3 L1 460//380V</p>
<p>→ 6312-Z-C3          → 6211-Z-C3</p>	<p>MOBIL POLYREX EM          21 g 20000 h</p>