

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer : _____

Product line : W40 JM Pump NEMA Premium Efficiency Three-Phase Product code : 14483518
 Catalog # : 02036OT3E254JM-W40

Frame : 254JM	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 : 222 lb
Protection degree : IP23	Moment of inertia (J) : 0.8718 sq.ft.lb
Design : B	

Output [HP]	20	15	15	15	
Poles	2	2	2	2	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	230/460	380	400	415	
Rated current [A]	48.6/24.3	21.6	21.2	21.5	
L. R. Amperes [A]	306/153	147	142	148	
LRC [A]	6.3x(Code G)	6.8x(Code H)	6.7x(Code H)	6.9x(Code J)	
No load current [A]	16.8/8.40	8.00	9.30	10.3	
Rated speed [RPM]	3535	2945	2950	2955	
Slip [%]	1.81	1.83	1.67	1.50	
Rated torque [ft.lb]	29.8	26.8	26.7	26.7	
Locked rotor torque [%]	200	200	220	229	
Breakdown torque [%]	280	290	320	350	
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)	18s (cold) 10s (hot)	19s (cold) 11s (hot)	19s (cold) 11s (hot)	
Noise level ²					
Efficiency (%)	25%	90.0	85.6	85.8	85.9
	50%	90.2	88.0	88.1	88.2
	75%	91.0	88.5	88.6	88.7
	100%	91.0	91.2	91.2	91.2
Power Factor	25%	0.48	0.46	0.39	0.35
	50%	0.72	0.69	0.62	0.57
	75%	0.82	0.80	0.75	0.70
	100%	0.85	0.85	0.82	0.78

	<u>Drive end</u>	<u>Non drive end</u>	Foundation loads
Bearing type :	6309 Z C3	6209 Z C3	Max. traction
Sealing :	Without	Without	Max. compression
	<u>Bearing Seal</u>	<u>Bearing Seal</u>	
Lubrication interval :	20000 h	20000 h	
Lubricant amount :	13 g	9 g	
Lubricant type :	Mobil Polyrex EM		

Notes
 USABLE @208V 53.7A SF 1.15 SFA 61.8A

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



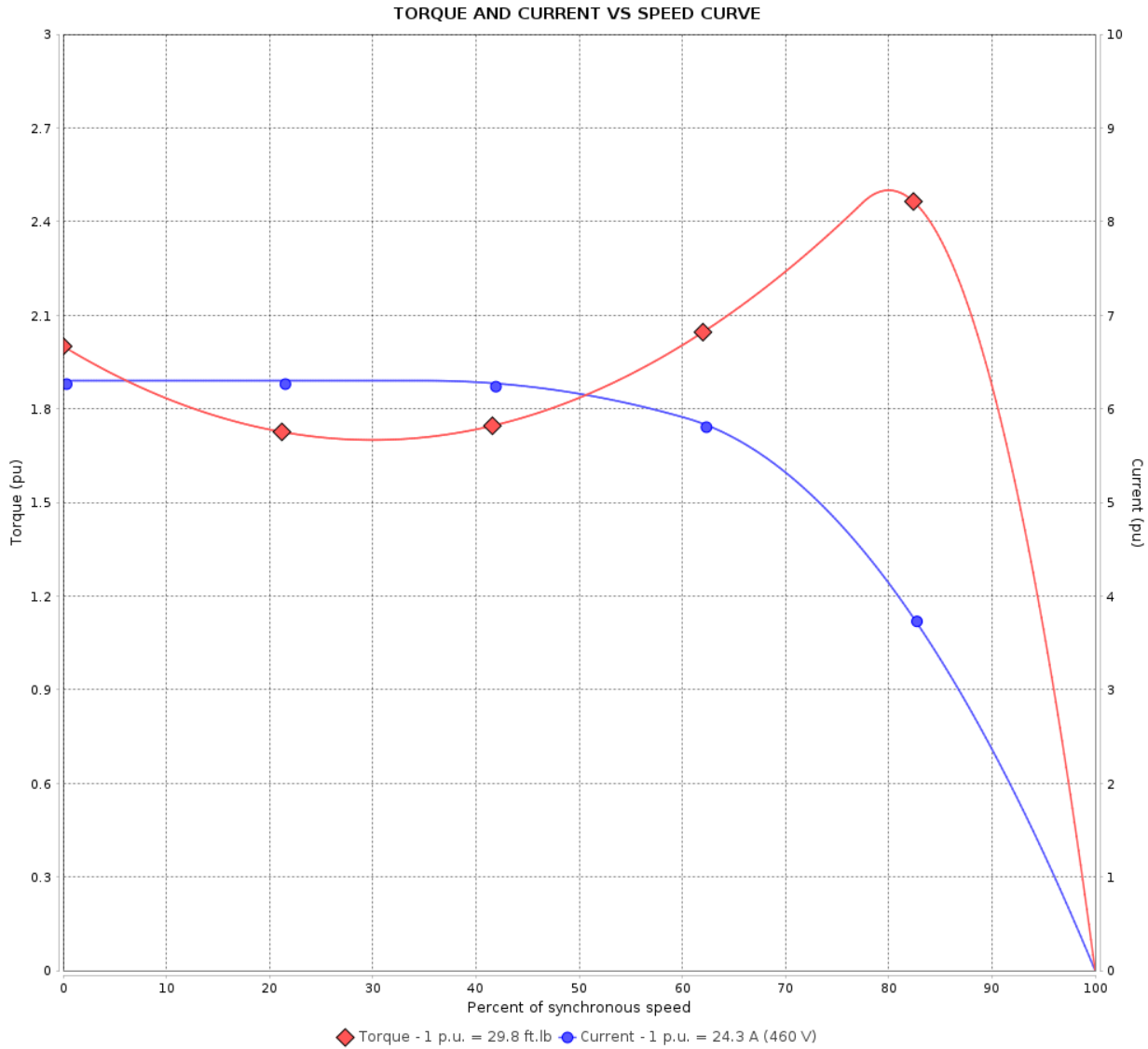
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 230/460 V 60 Hz 2P

Rated current	: 48.6/24.3 A	Moment of inertia (J)	: 0.8718 sq.ft.lb
LRC	: 6.3	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.25
Breakdown torque	: 280 %	Temperature rise	: 80 K
Rated speed	: 3535 rpm	Design	: B

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

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TORQUE AND CURRENT VS SPEED CURVE



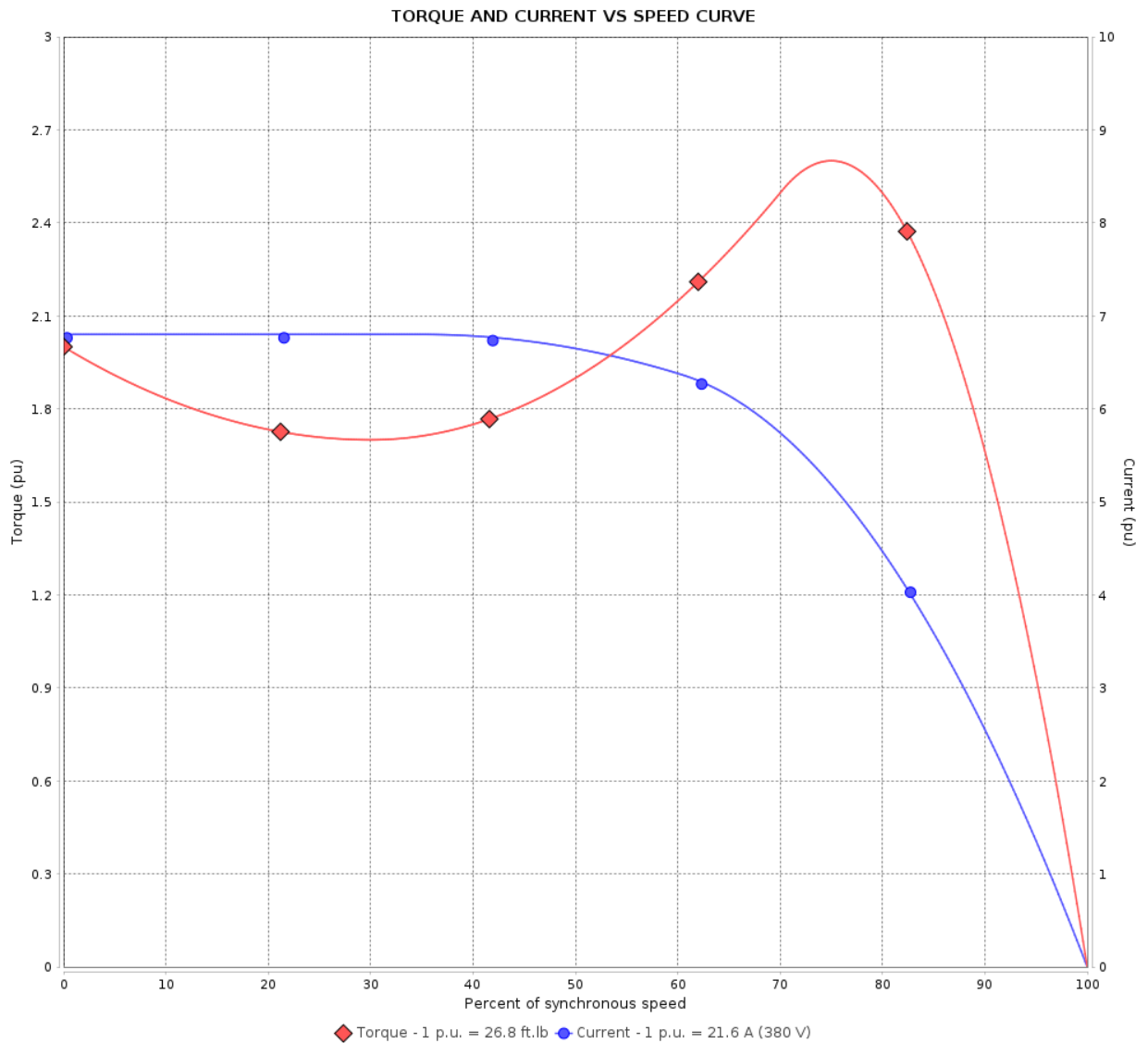
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 JM Pump NEMA Premium Efficiency Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 380 V 50 Hz 2P IE3

Rated current	: 21.6 A	Moment of inertia (J)	: 0.8718 sq.ft.lb
LRC	: 6.8	Duty cycle	: Cont.(S1)
Rated torque	: 26.8 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 2945 rpm	Design	: B

Locked rotor time : 18s (cold) 10s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage

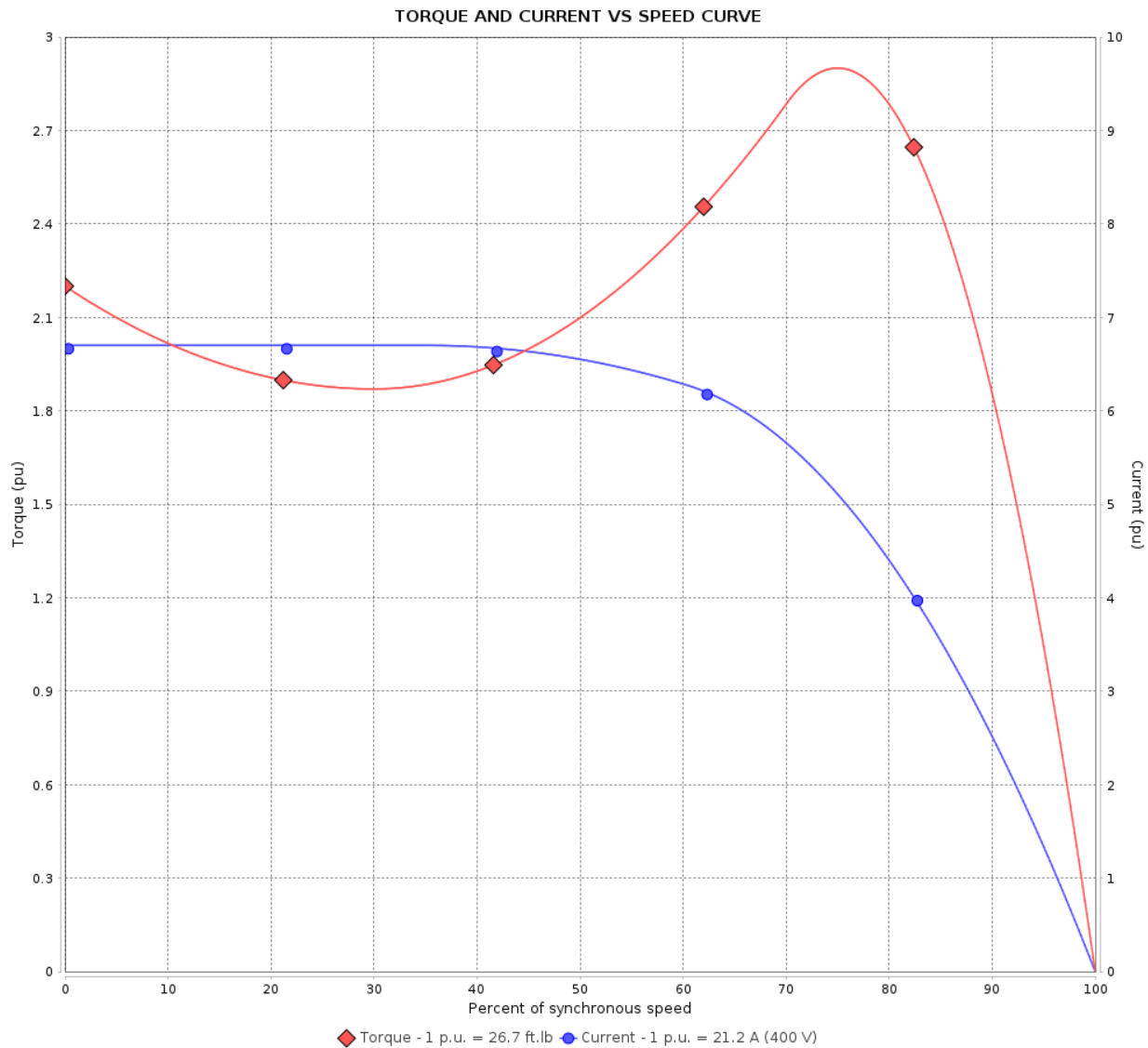


Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 400 V 50 Hz 2P IE3

Rated current	: 21.2 A	Moment of inertia (J)	: 0.8718 sq.ft.lb
LRC	: 6.7	Duty cycle	: Cont.(S1)
Rated torque	: 26.7 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 320 %	Temperature rise	: 80 K
Rated speed	: 2950 rpm	Design	: B

Locked rotor time : 19s (cold) 11s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



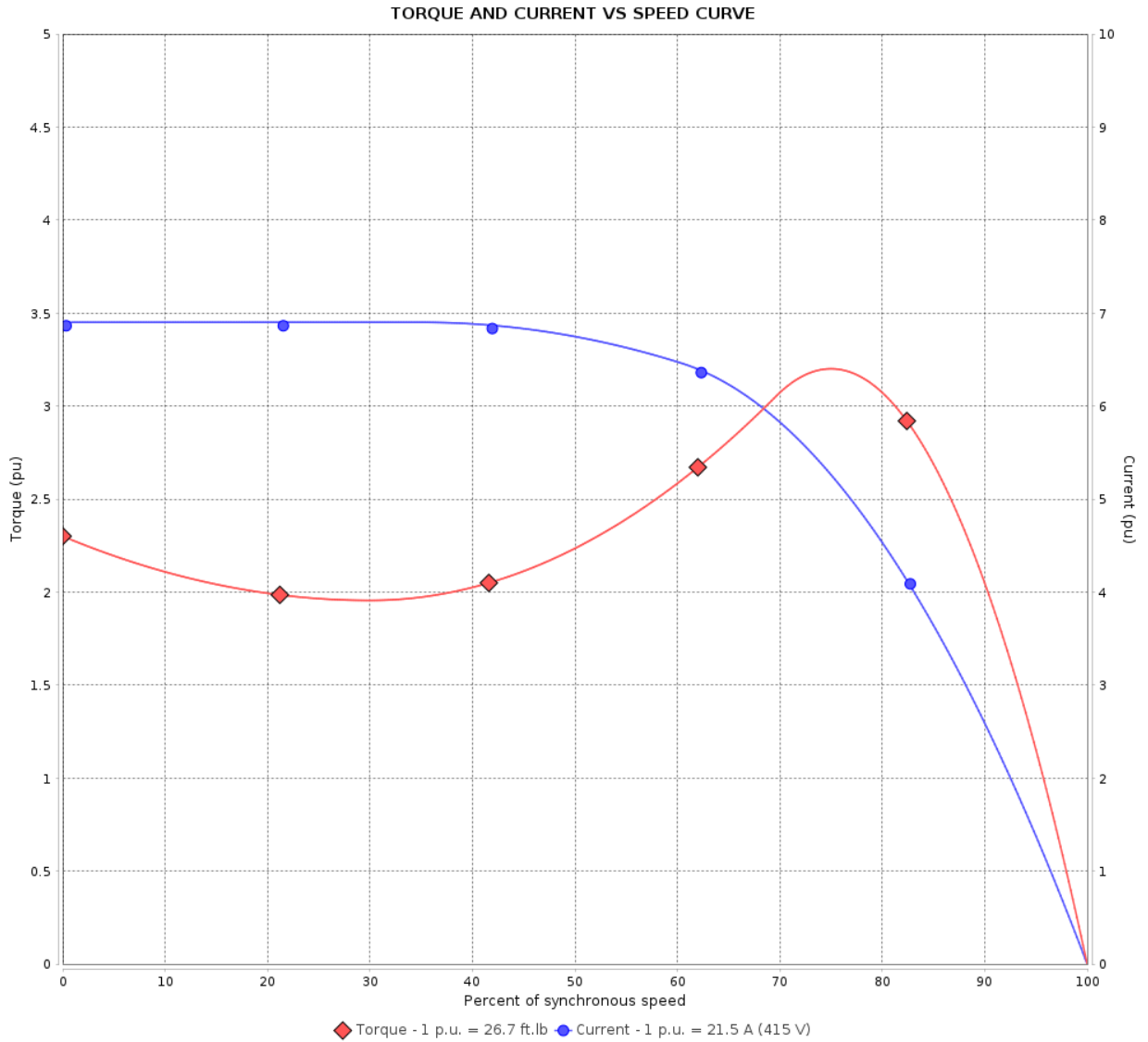
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 415 V 50 Hz 2P IE3

Rated current : 21.5 A
LRC : 6.9
Rated torque : 26.7 ft.lb
Locked rotor torque : 229 %
Breakdown torque : 350 %
Rated speed : 2955 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Locked rotor time : 19s (cold) 11s (hot)

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LOAD PERFORMANCE CURVE

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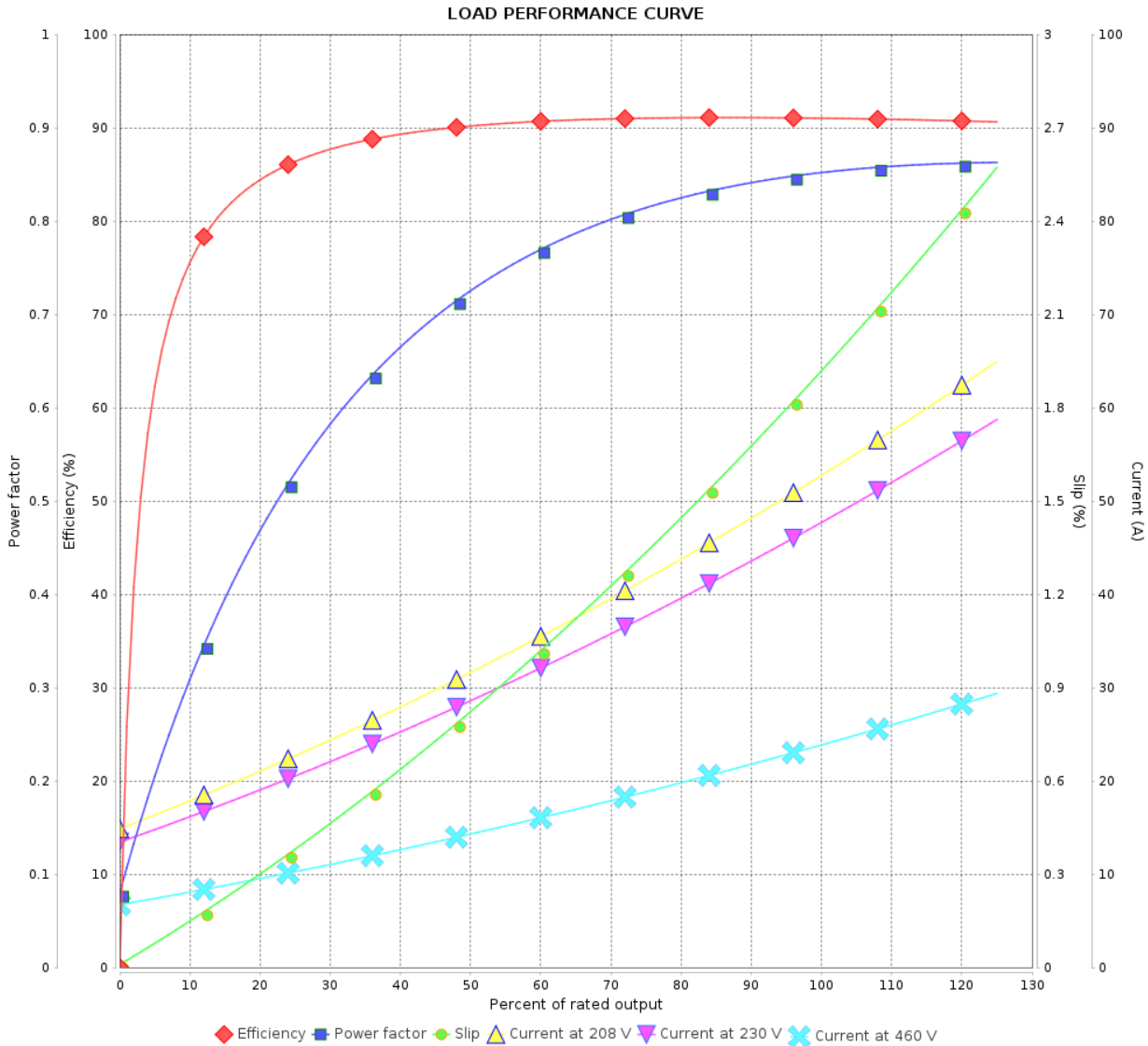


Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 230/460 V 60 Hz 2P

Rated current : 48.6/24.3 A
 LRC : 6.3
 Rated torque : 29.8 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 280 %
 Rated speed : 3535 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.25
 Temperature rise : 80 K
 Design : B

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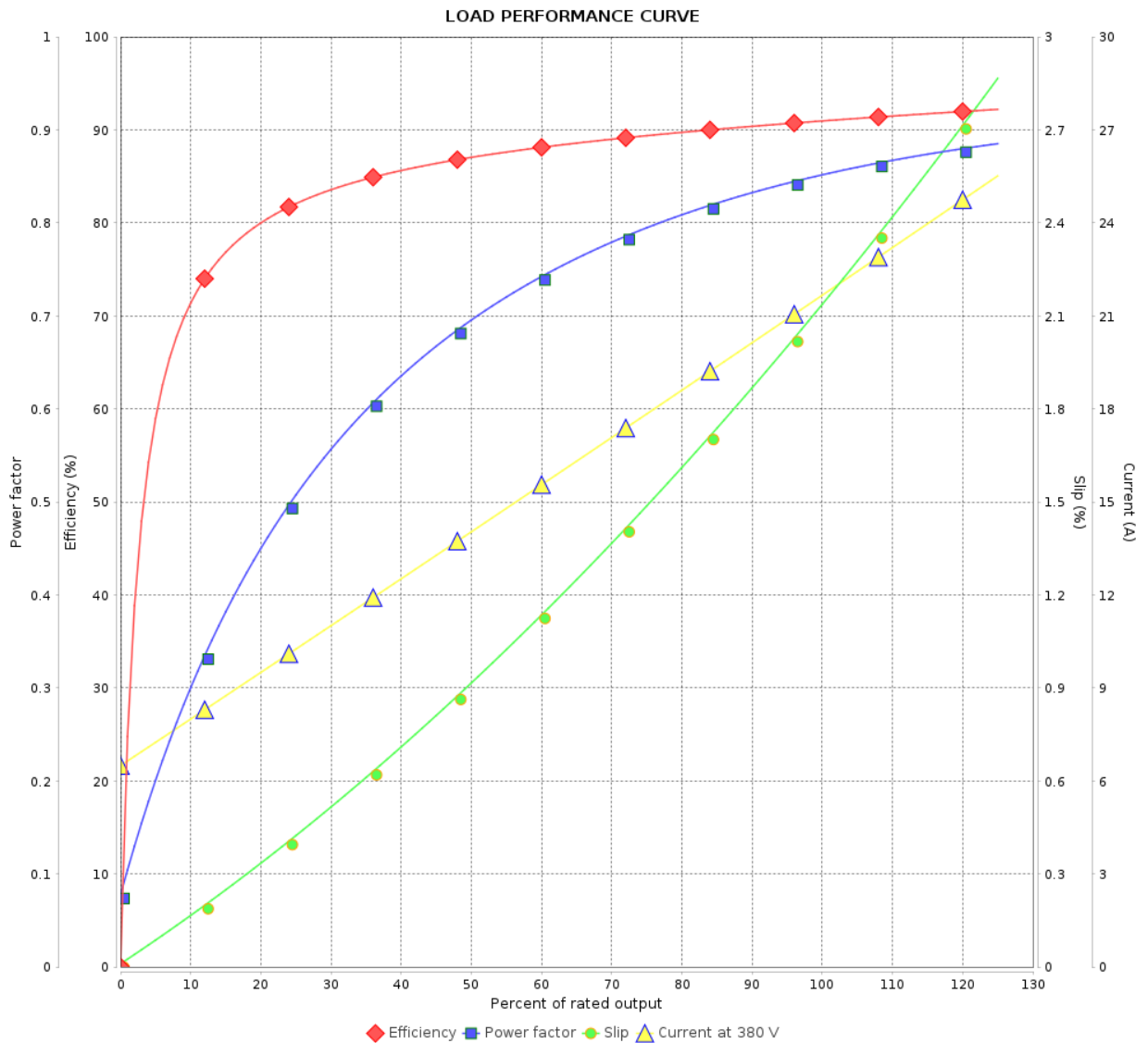


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Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 380 V 50 Hz 2P IE3

Rated current : 21.6 A
 LRC : 6.8
 Rated torque : 26.8 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 290 %
 Rated speed : 2945 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : B

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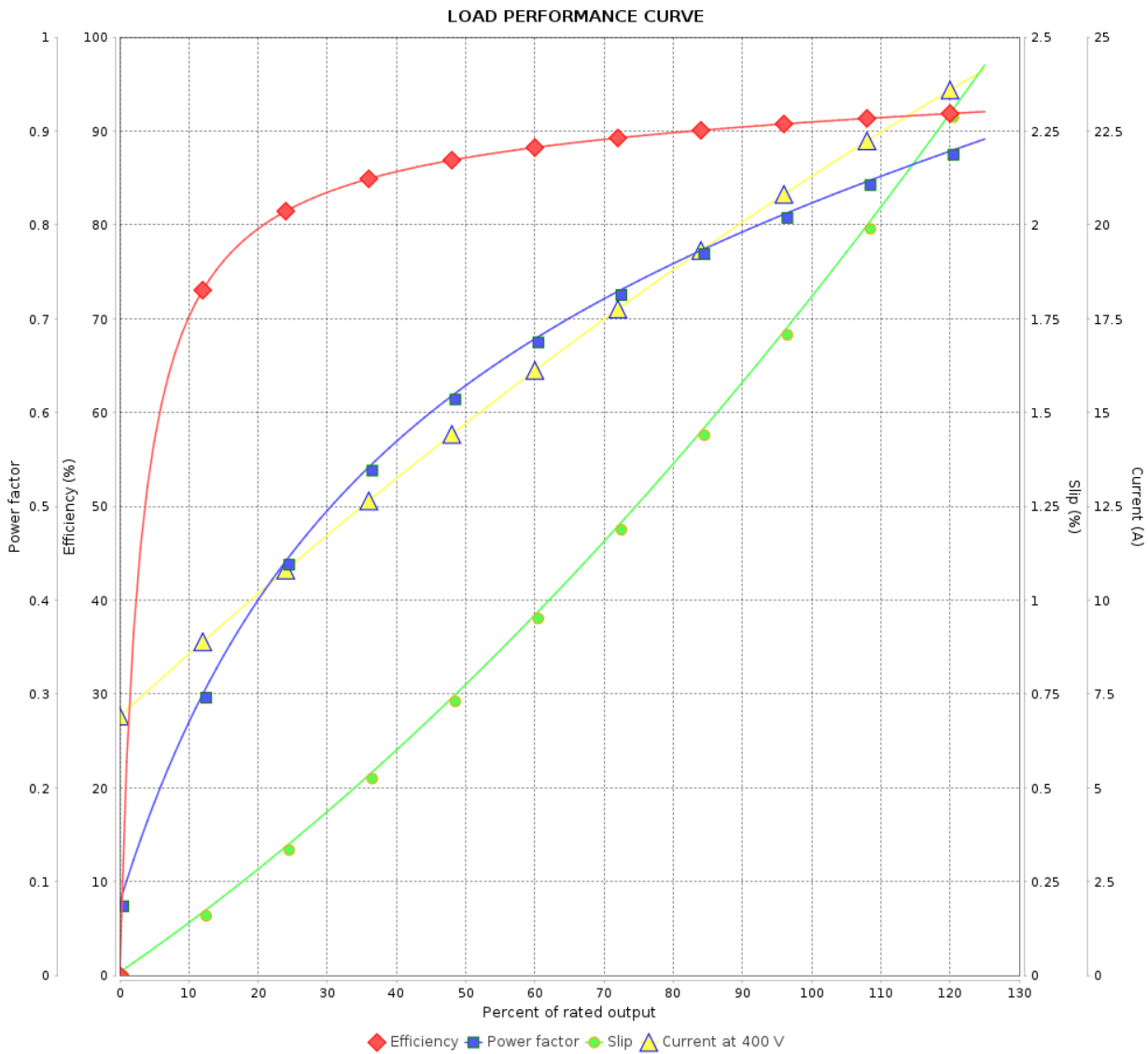


Customer :

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Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 400 V 50 Hz 2P IE3

Rated current : 21.2 A
 LRC : 6.7
 Rated torque : 26.7 ft.lb
 Locked rotor torque : 220 %
 Breakdown torque : 320 %
 Rated speed : 2950 rpm

Moment of inertia (J) : 0.8718 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

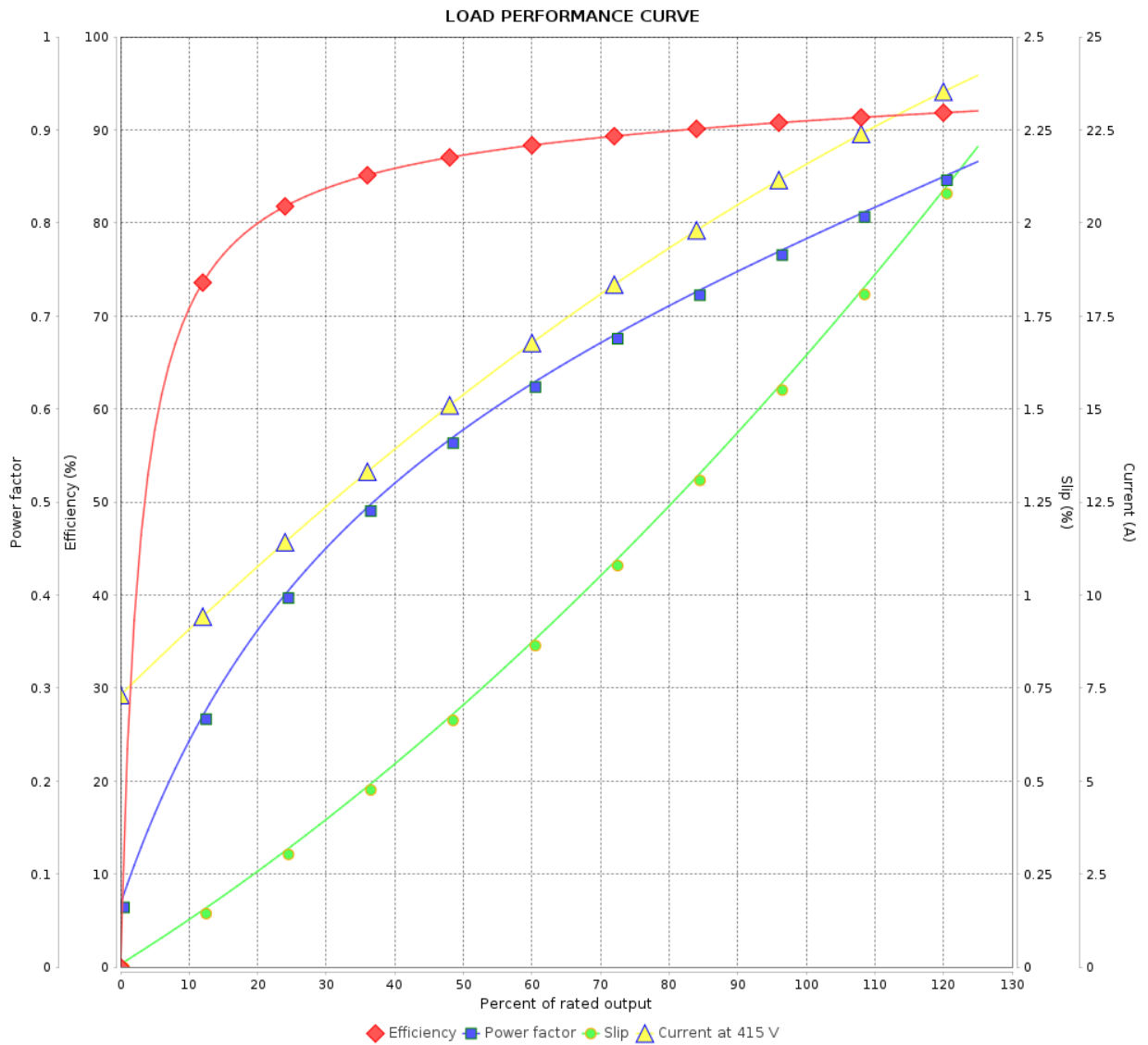


Customer :

Product line : W40 JM Pump NEMA Premium Efficiency Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 415 V 50 Hz 2P IE3

Rated current : 21.5 A
 LRC : 6.9
 Rated torque : 26.7 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 350 %
 Rated speed : 2955 rpm

Moment of inertia (J) : 0.8718 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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Locked rotor torque : 200 %
Breakdown torque : 280 %
Rated speed : 3535 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.25
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

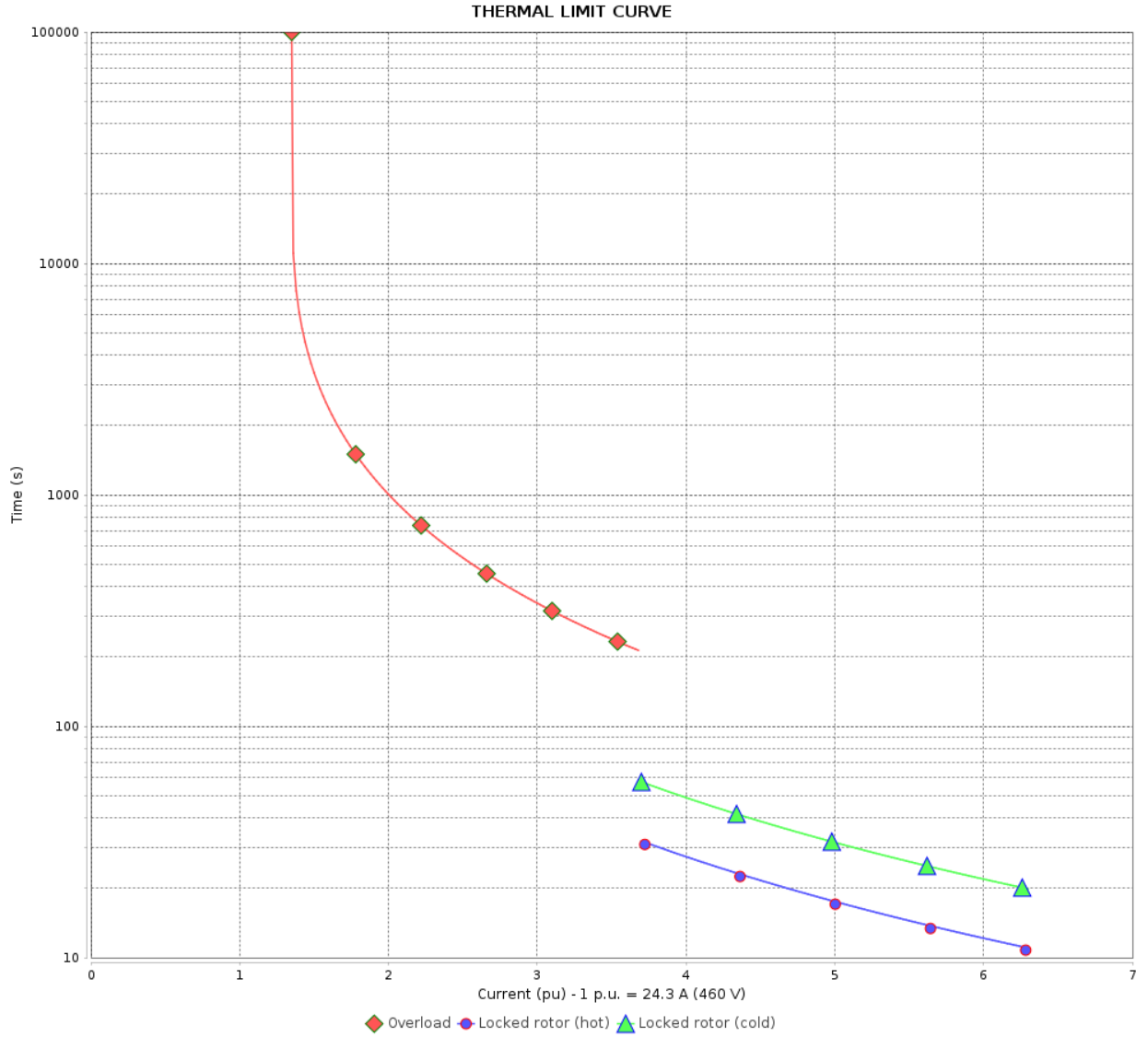
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Three Phase Induction Motor - Squirrel Cage



Customer : _____



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THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

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Catalog # : 02036OT3E254JM-W40

Performance : 380 V 50 Hz 2P IE3

Rated current : 21.6 A
LRC : 6.8
Rated torque : 26.8 ft.lb
Locked rotor torque : 200 %
Breakdown torque : 290 %
Rated speed : 2945 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

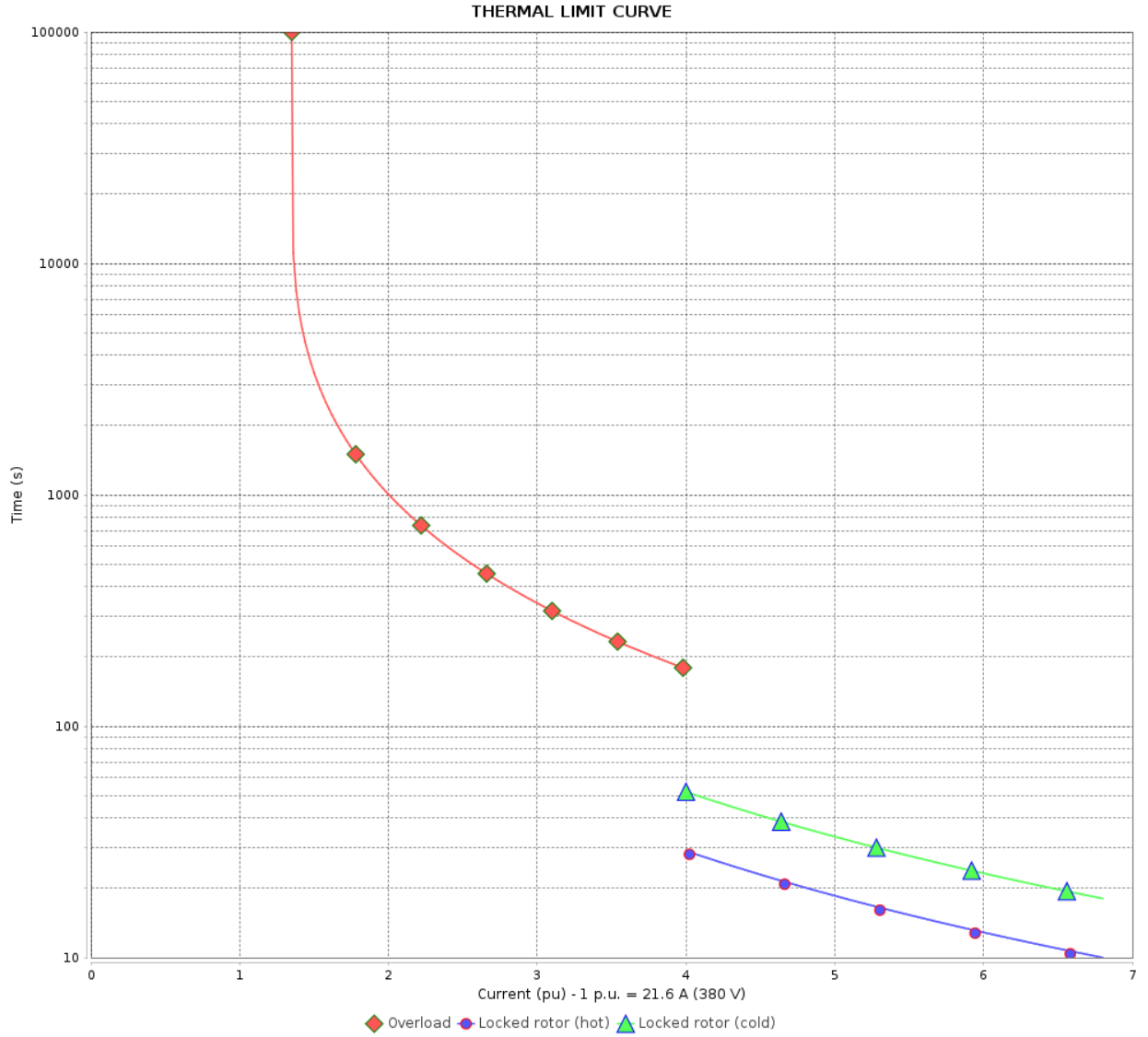
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Three Phase Induction Motor - Squirrel Cage



Customer : _____



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THERMAL LIMIT CURVE



Three Phase Induction Motor - Squirrel Cage

Customer :

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Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40

Performance : 400 V 50 Hz 2P IE3

Rated current : 21.2 A
LRC : 6.7
Rated torque : 26.7 ft.lb
Locked rotor torque : 220 %
Breakdown torque : 320 %
Rated speed : 2950 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

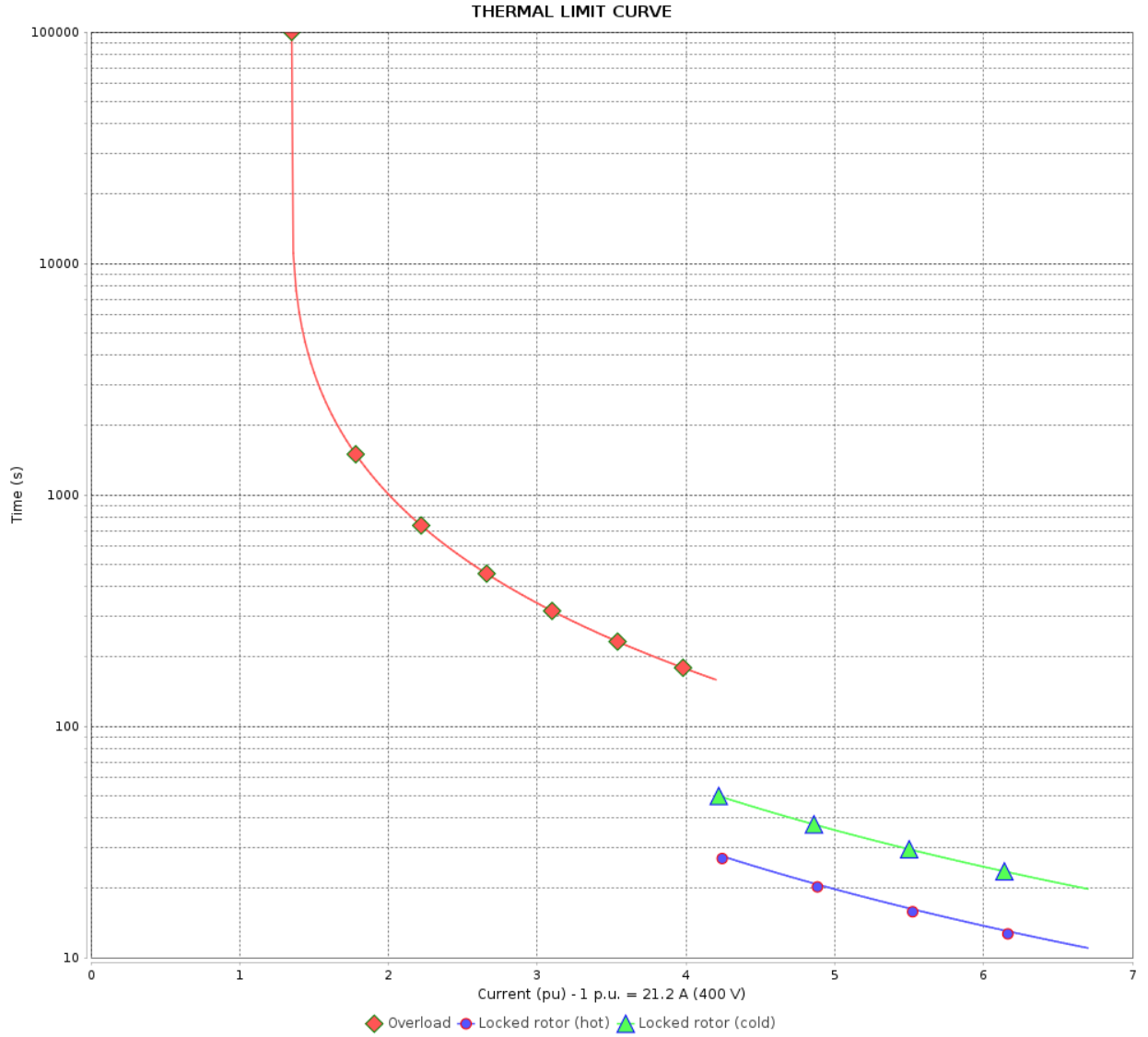
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Three Phase Induction Motor - Squirrel Cage



Customer : _____



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Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40

Performance : 415 V 50 Hz 2P IE3

Rated current : 21.5 A
LRC : 6.9
Rated torque : 26.7 ft.lb
Locked rotor torque : 229 %
Breakdown torque : 350 %
Rated speed : 2955 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
Temperature rise : 80 K
Design : B

Heating constant

Cooling constant

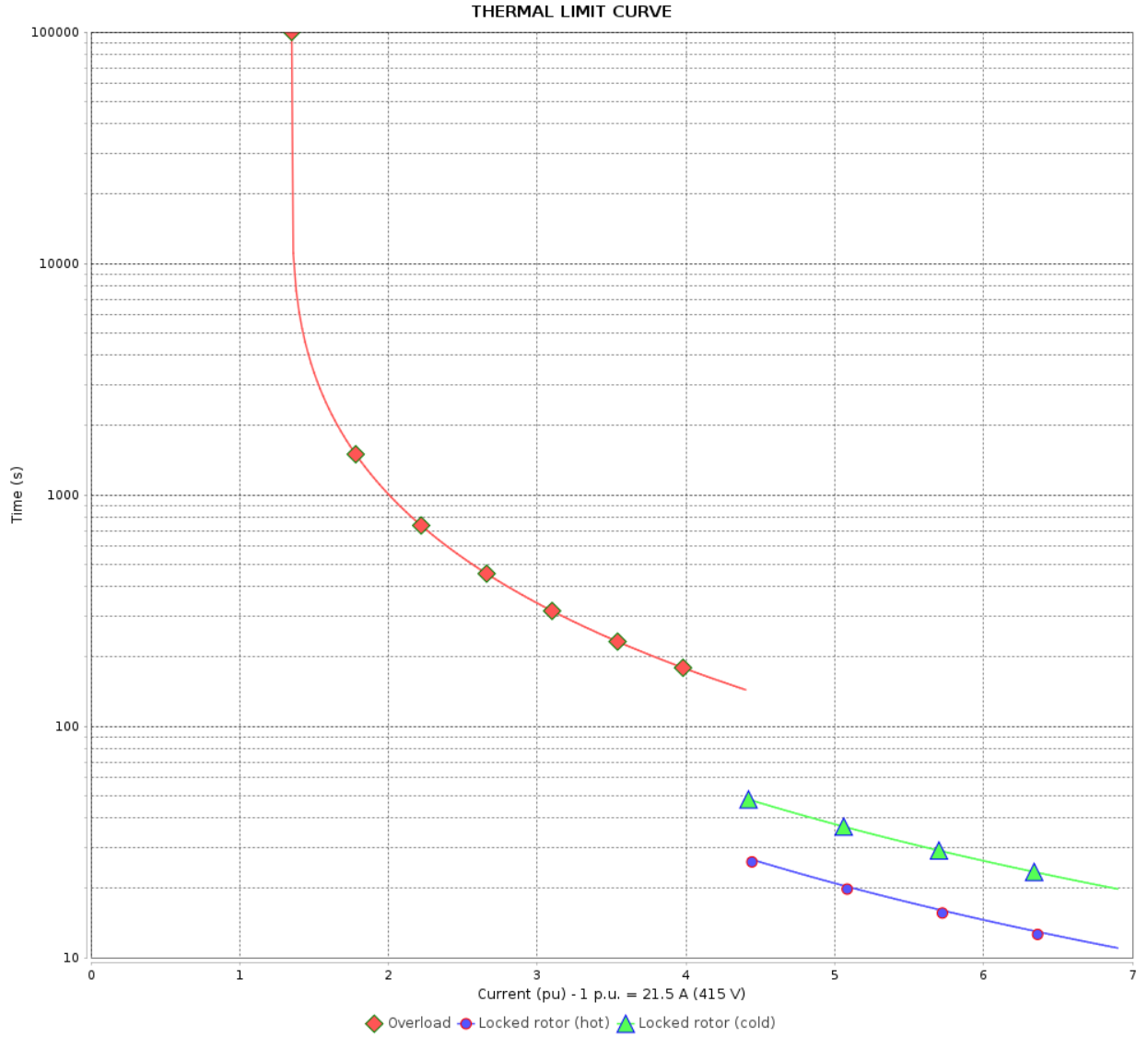
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THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : _____



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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

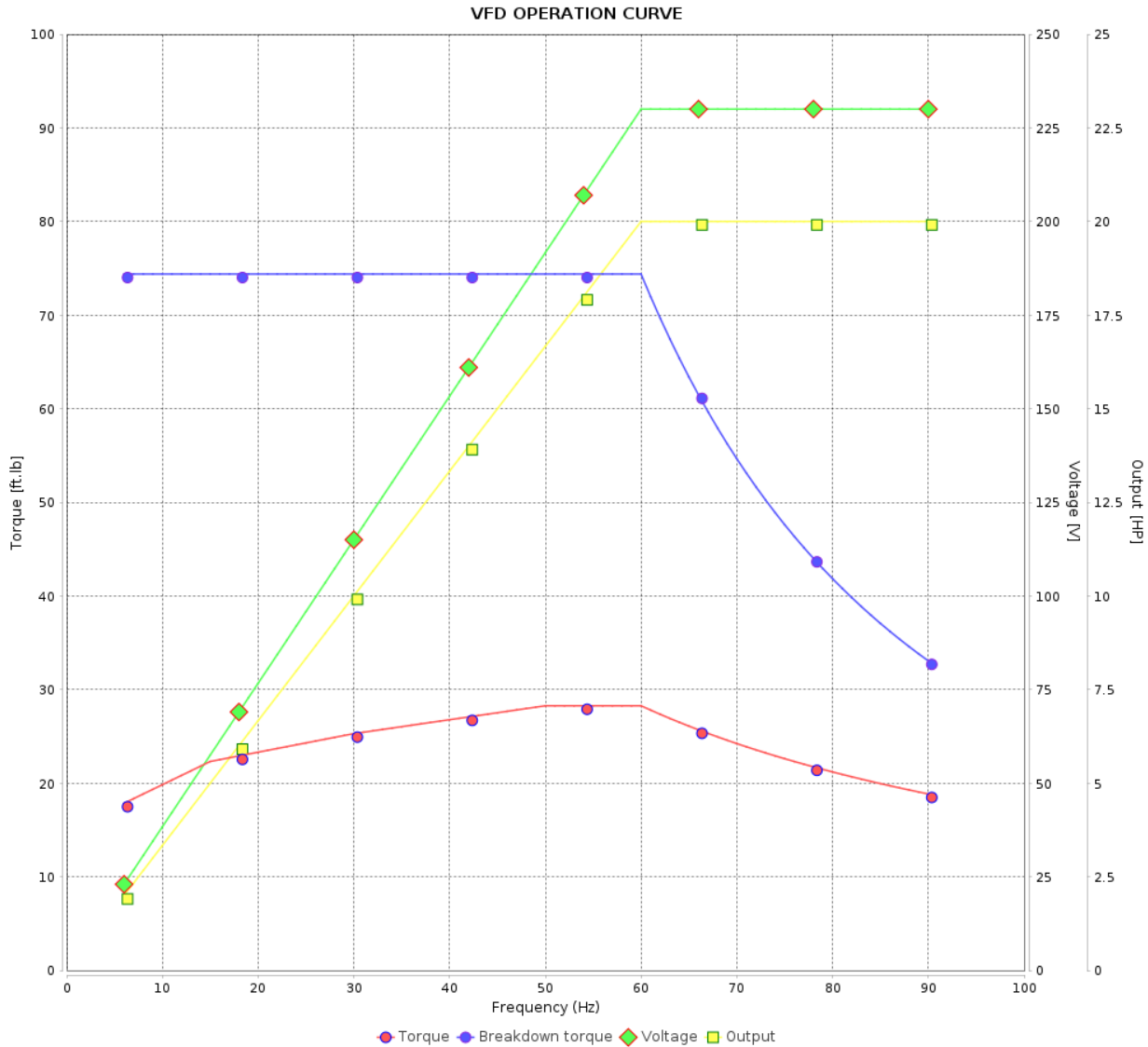


Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 230/460 V 60 Hz 2P

Rated current : 48.6/24.3 A
LRC : 6.3
Rated torque : 29.8 ft.lb
Locked rotor torque : 200 %
Breakdown torque : 280 %
Rated speed : 3535 rpm

Moment of inertia (J) : 0.8718 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

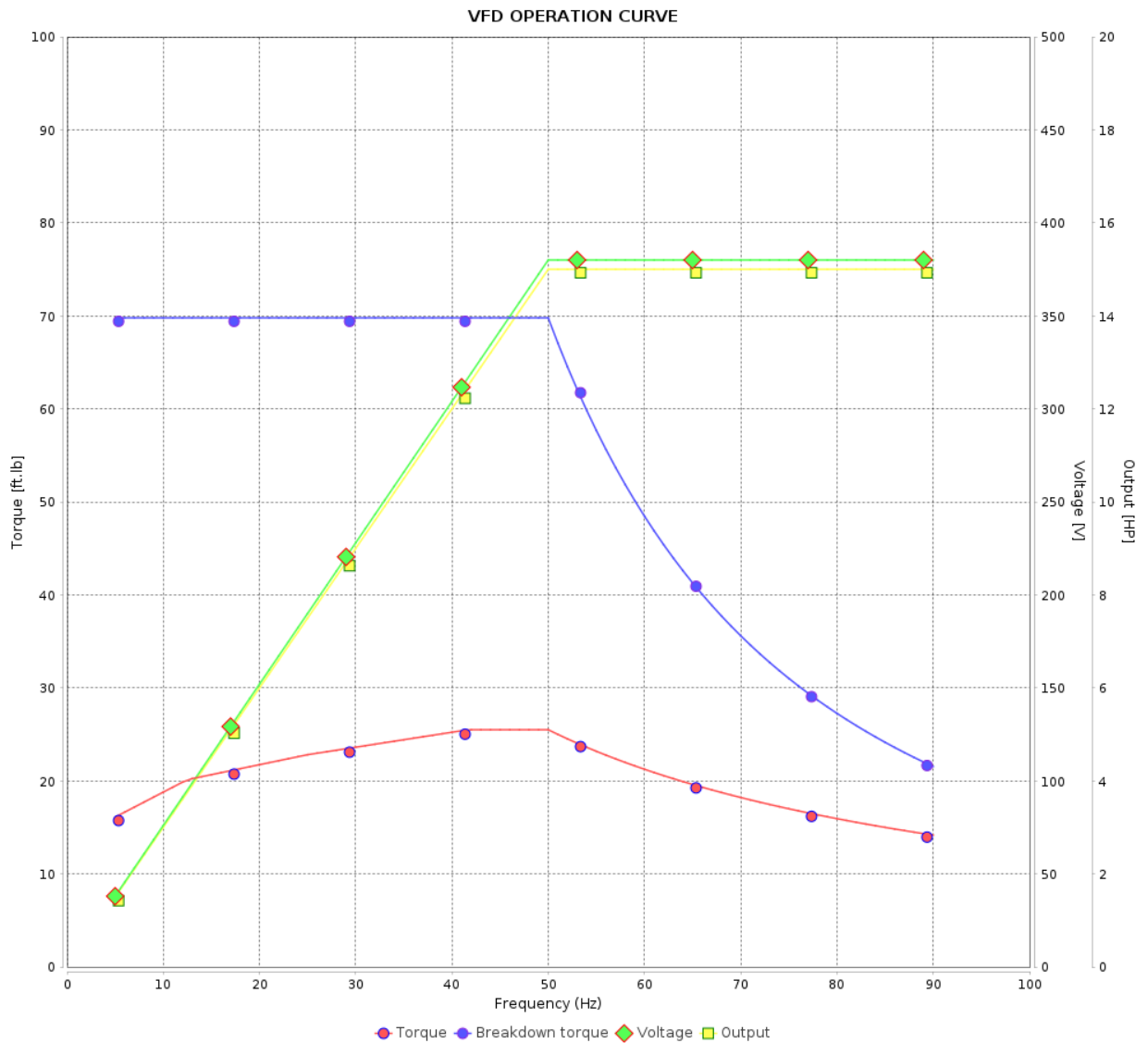


Customer :

Product line : W40 JM Pump NEMA Premium Efficiency Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 380 V 50 Hz 2P IE3

Rated current : 21.6 A
 LRC : 6.8
 Rated torque : 26.8 ft.lb
 Locked rotor torque : 200 %
 Breakdown torque : 290 %
 Rated speed : 2945 rpm

Moment of inertia (J) : 0.8718 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

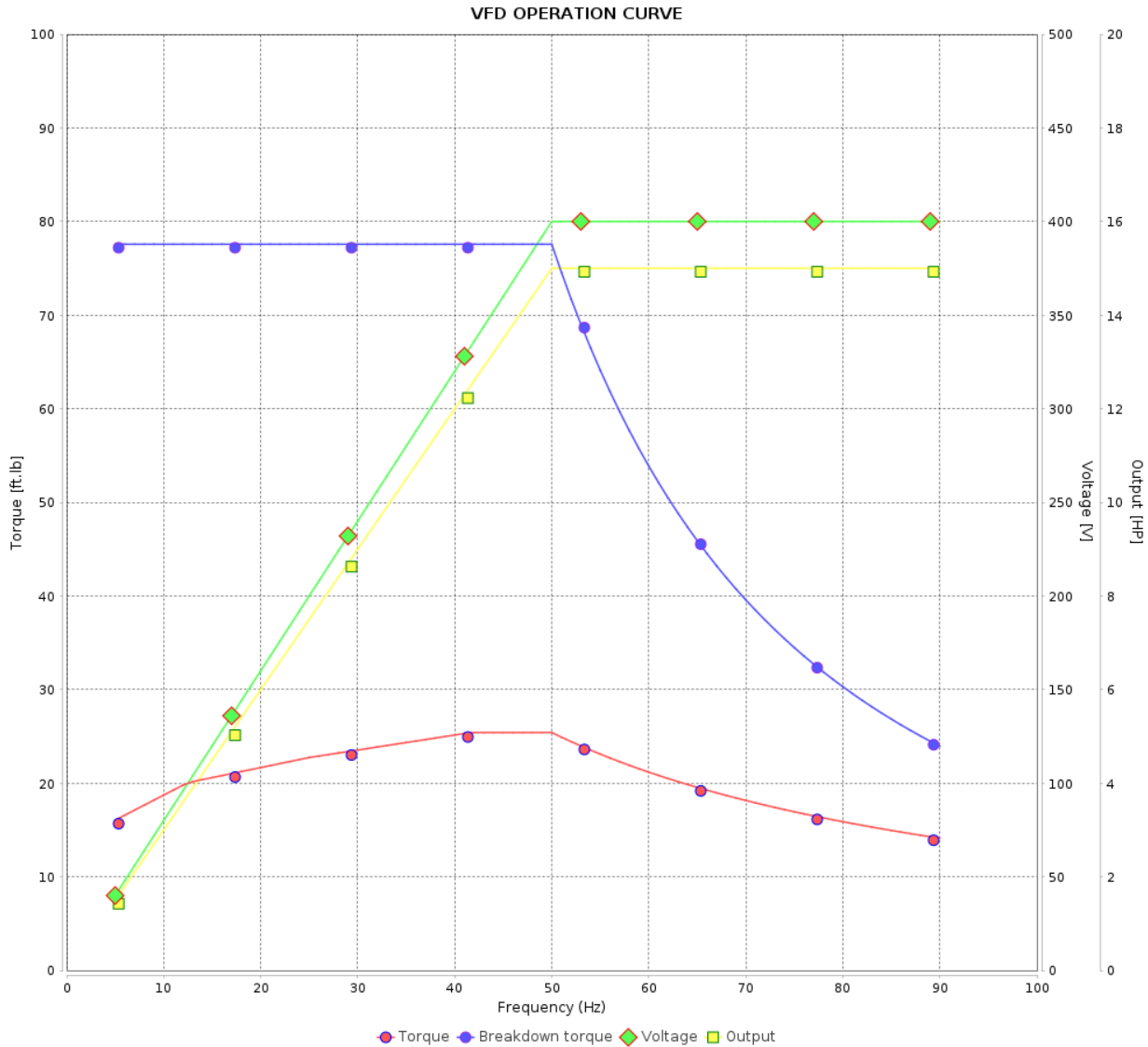


Customer :

Product line : W40 JM Pump NEMA Premium Efficiency
Three-Phase

Product code : 14483518

Catalog # : 02036OT3E254JM-W40



Performance : 400 V 50 Hz 2P IE3

Rated current : 21.2 A
LRC : 6.7
Rated torque : 26.7 ft.lb
Locked rotor torque : 220 %
Breakdown torque : 320 %
Rated speed : 2950 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
Duty cycle : Cont.(S1)
Insulation class : F
Service factor : 1.00
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

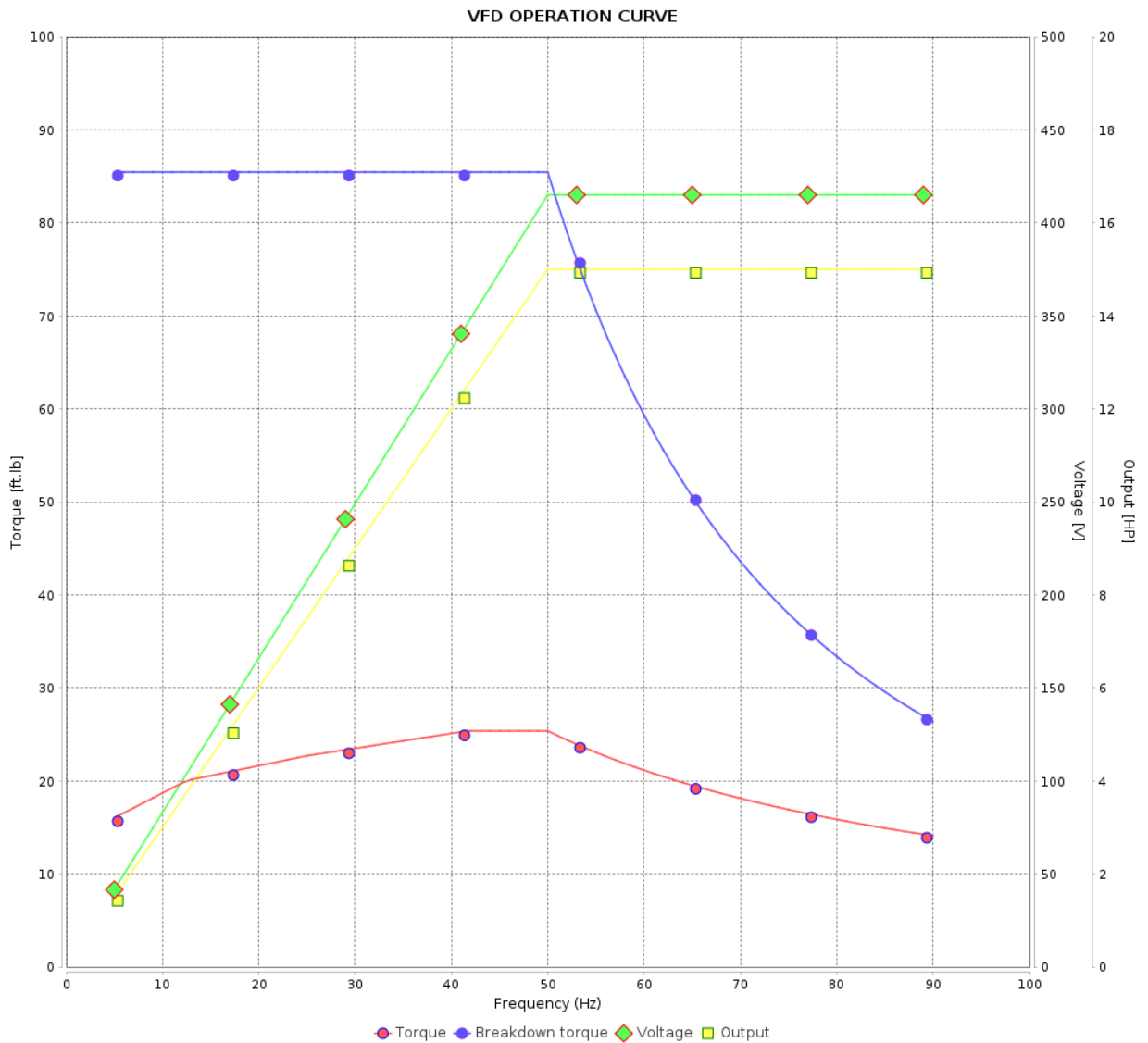


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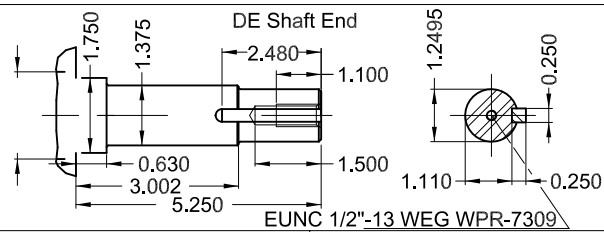
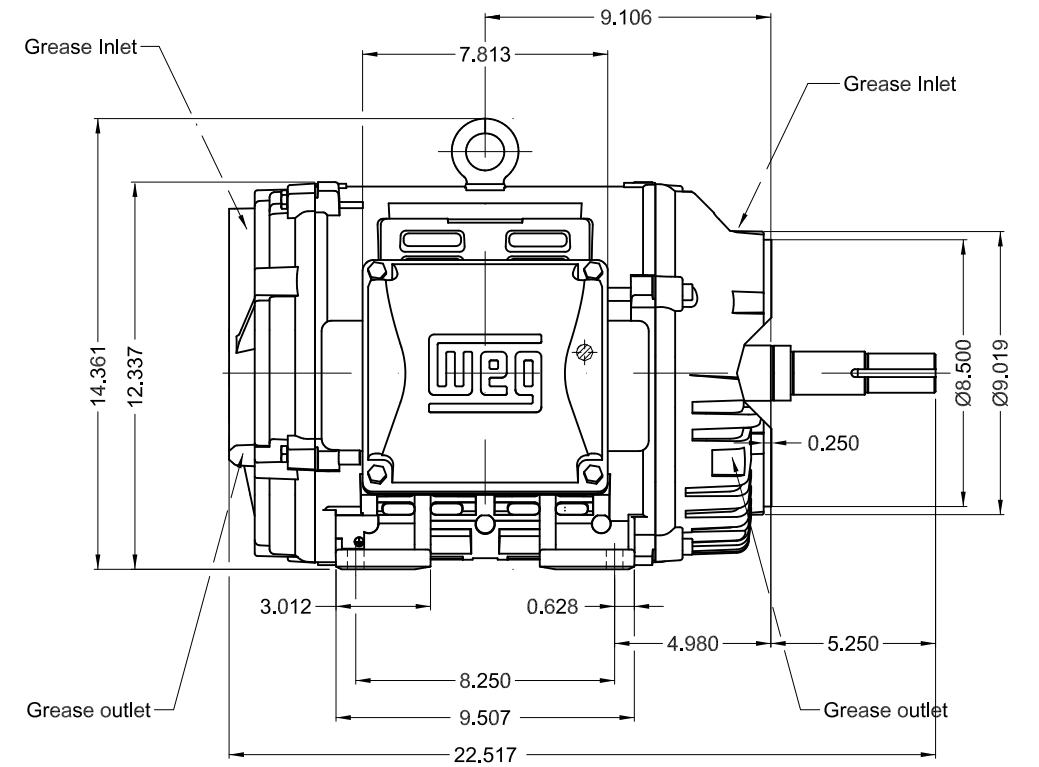
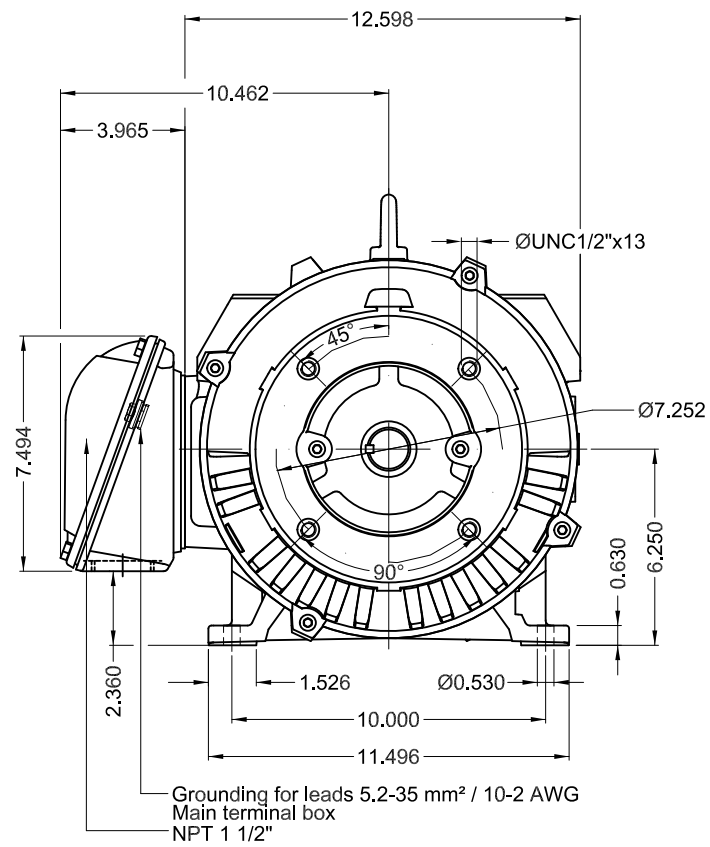


Performance : 415 V 50 Hz 2P IE3

Rated current : 21.5 A
 LRC : 6.9
 Rated torque : 26.7 ft.lb
 Locked rotor torque : 229 %
 Breakdown torque : 350 %
 Rated speed : 2955 rpm

Moment of inertia (J) : 0.8718 sq.ft.lb
 Duty cycle : Cont.(S1)
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 Temperature rise : 80 K
 Design : B

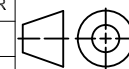
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20 HP 02 Poles 60 Hz A

1:6

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	HYBRISUSER	THREE PH. MOTOR W40 CLOSE COUPLED PUMP JM TYPE NEMA PREMIUM EFF					
CHECKED		FRAME 254JM IP23 ODP					
RELEASED							
REL. DATE		WMO Jaragua do Sul					



PREVIEW

WDD 00



SHEET 1 / 1

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

**W40****NEMA Premium****UK CA****US 3PT9 LISTED**

IEC 60034-1

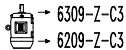
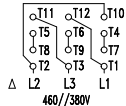
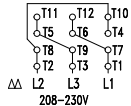
MOD.T01#FOXON



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

*Inverter Duty Motor*MODEL 020360T3E254JM-W40
MADE IN BRAZIL
14483518

PH 3	FR 254JM	HP(kW) 20.0(15.0)	Hz 60
V 230/460	A 48.6/24.3	RPM 3535	DES B
NEMA NOM EFF 91.0 %	INS. CL. F Δ T 80 K	IP23	
ENCL ODP	DUTY CONT.	AMB. 40°C	
CODE G	PF 0.85	SF 1.25	SFA 60.8/30.4
USABLE @208V	53.7 A	SF 1.15	SFA 61.8
15HP 11kW 50Hz 380V 21.6A 2945RPM SF1.00 EFF 91.2% (IE3)	ALT 1000 m.a.s.l.		

MOBIL POLYREX EM
13 g 20000 h

ALT 1000 m.a.s.l. 222 Lbs