

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer					
Product line		: NEMA Premium Efficiency Three-Phase	Product code :		12384947
			Catalog # :		00509ST3QIE254TC-W22
Frame		: 254/6TC	Cooling method		: IC411 - TEFC
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		: 277 lb
Protection degree		: IP55	Moment of inertia (J)		: 3.41 sq.ft.lb
Design		: B			
Output [HP]	5	5	5	5	
Poles	8	8	8	8	
Frequency [Hz]	60	50	50	50	
Rated voltage [V]	460	380	400	415	
Rated current [A]	7.58	8.84	8.56	8.48	
L. R. Amperes [A]	40.2	38.0	40.2	42.4	
LRC [A]	5.3x(Code H)	4.3x(Code F)	4.7x(Code F)	5.0x(Code G)	
No load current [A]	4.50	4.45	4.75	4.95	
Rated speed [RPM]	882	725	725	730	
Slip [%]	2.00	3.33	3.33	2.67	
Rated torque [ft.lb]	29.8	36.2	36.2	36.0	
Locked rotor torque [%]	220	150	170	190	
Breakdown torque [%]	250	190	210	229	
Service factor	1.25	1.15	1.15	1.15	
Temperature rise	80 K	105 K	80 K	80 K	
Locked rotor time	79s (cold) 44s (hot)	59s (cold) 33s (hot)	59s (cold) 33s (hot)	59s (cold) 33s (hot)	
Noise level ²	54.0 dB(A)	51.0 dB(A)	51.0 dB(A)	51.0 dB(A)	
Efficiency (%)	25%	85.2	85.9	86.1	84.5
	50%	85.5	85.5	85.5	84.0
	75%	87.5	85.5	86.5	86.5
	100%	87.5	84.8	85.5	85.5
Power Factor	25%	0.28	0.33	0.30	0.29
	50%	0.49	0.56	0.52	0.50
	75%	0.62	0.68	0.65	0.63
	100%	0.70	0.75	0.73	0.71
Bearing type		: <u>Drive end</u> 6309 C3 <u>Non drive end</u> 6209 C3	Foundation loads		
Sealing		: Inpro/Seal Inpro/Seal	Max. traction : 258 lb		
Lubrication interval		: 20000 h 20000 h	Max. compression : 535 lb		
Lubricant amount		: 13 g 9 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



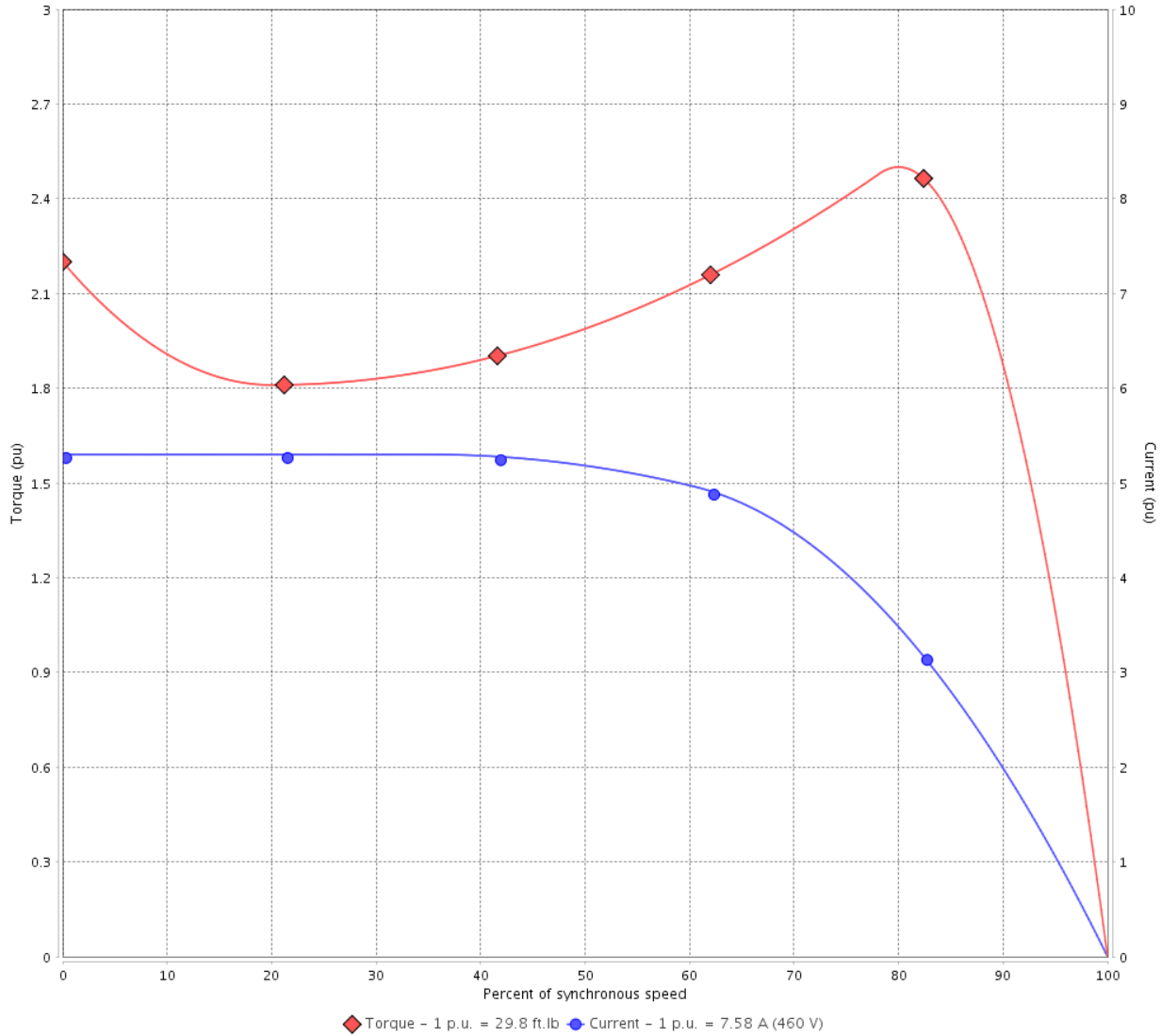
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12384947

Catalog # : 00509ST3QIE254TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 460 V 60 Hz 8P

Rated current	: 7.58 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 882 rpm	Design	: B

Locked rotor time : 79s (cold) 44s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



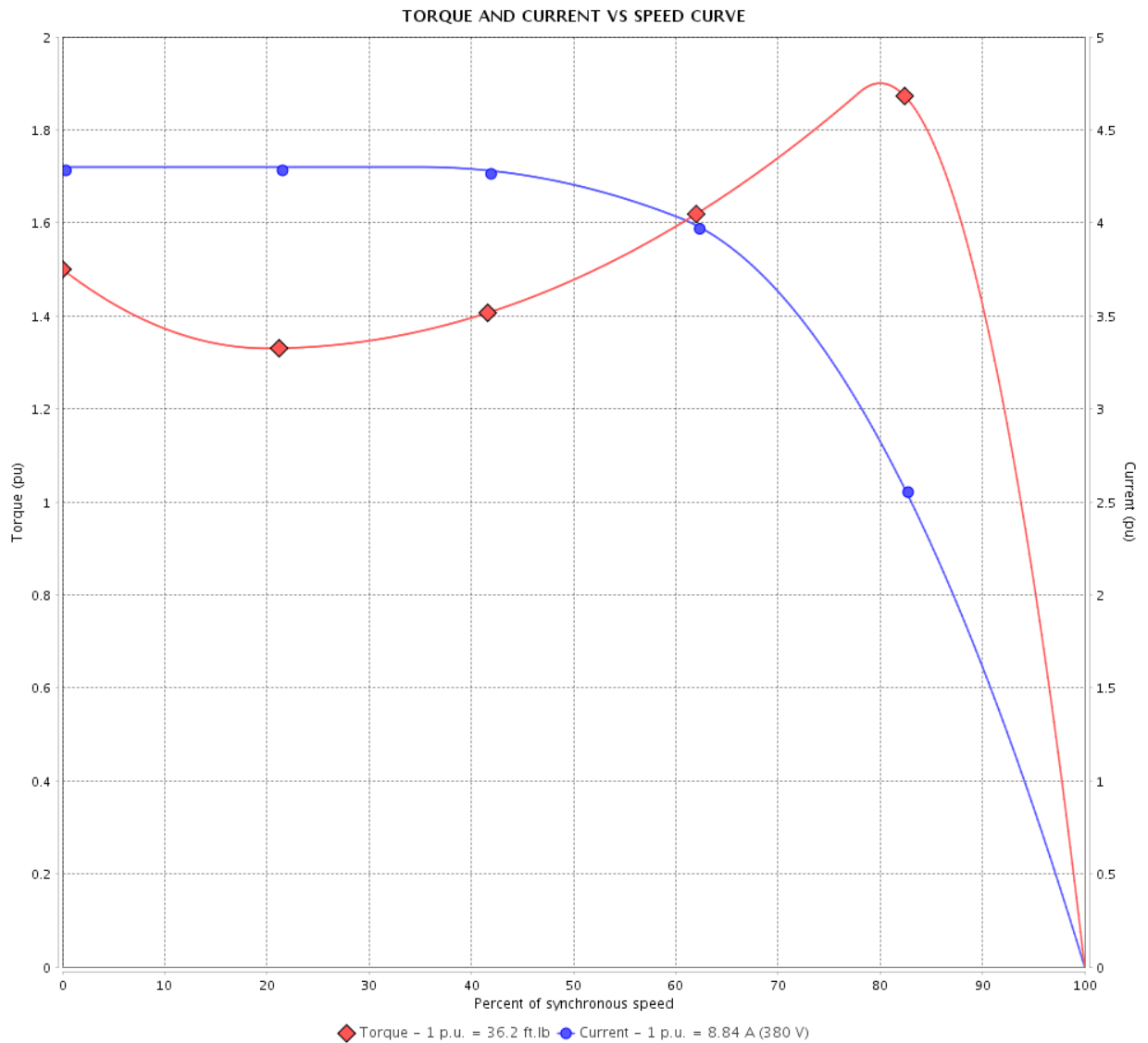
Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12384947

Catalog # : 00509ST3QIE254TC-W22



Performance : 380 V 50 Hz 8P IE3

Rated current	: 8.84 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 4.3	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 150 %	Service factor	: 1.15
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 725 rpm	Design	: B

Locked rotor time : 59s (cold) 33s (hot)

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TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



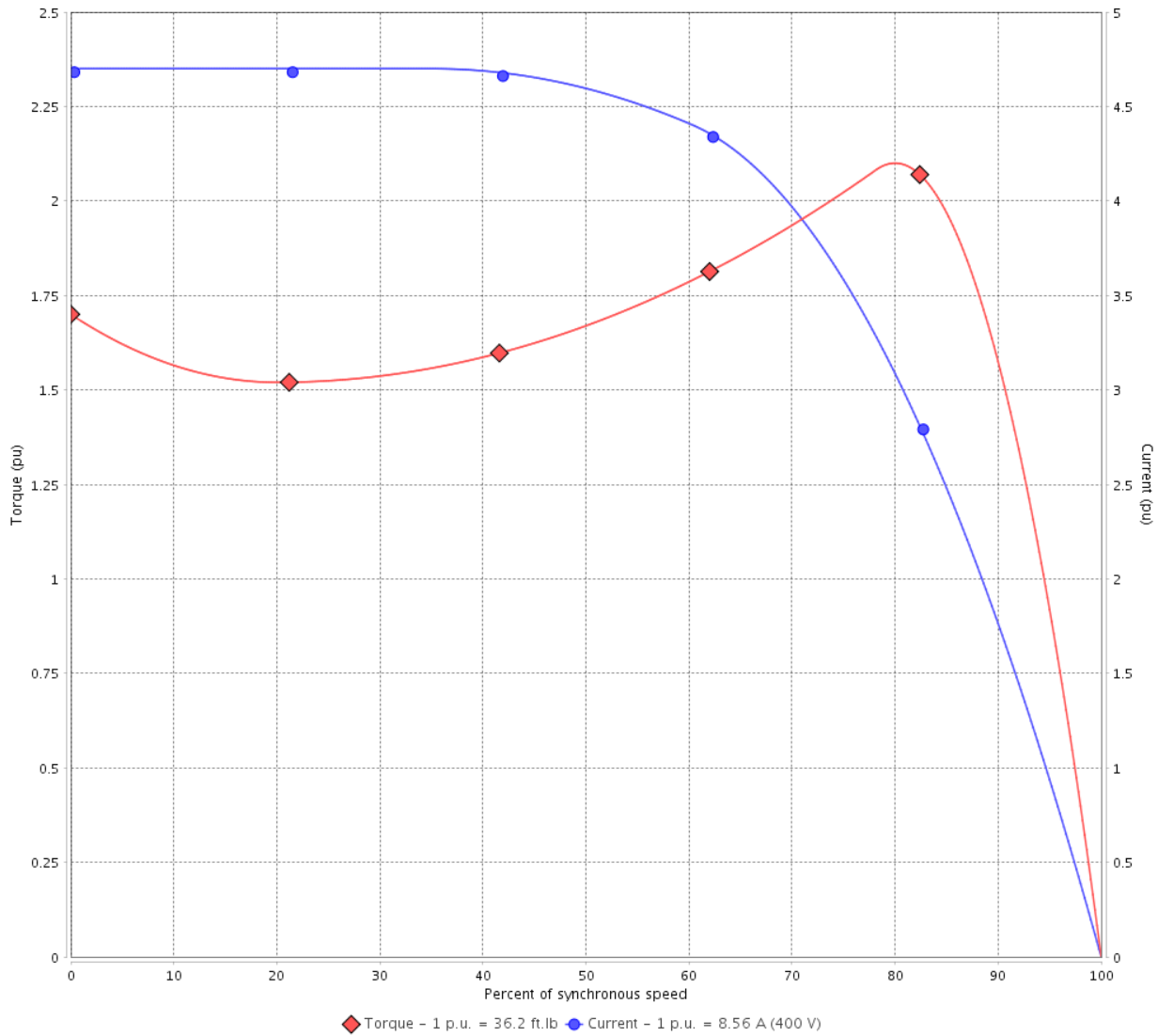
Customer :

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Product code : 12384947

Catalog # : 00509ST3QIE254TC-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 8P IE3

Rated current	: 8.56 A	Moment of inertia (J)	: 3.41 sq.ft.lb
LRC	: 4.7	Duty cycle	: Cont.(S1)
Rated torque	: 36.2 ft.lb	Insulation class	: F
Locked rotor torque	: 170 %	Service factor	: 1.15
Breakdown torque	: 210 %	Temperature rise	: 80 K
Rated speed	: 725 rpm	Design	: B

Locked rotor time : 59s (cold) 33s (hot)

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TORQUE AND CURRENT VS SPEED CURVE



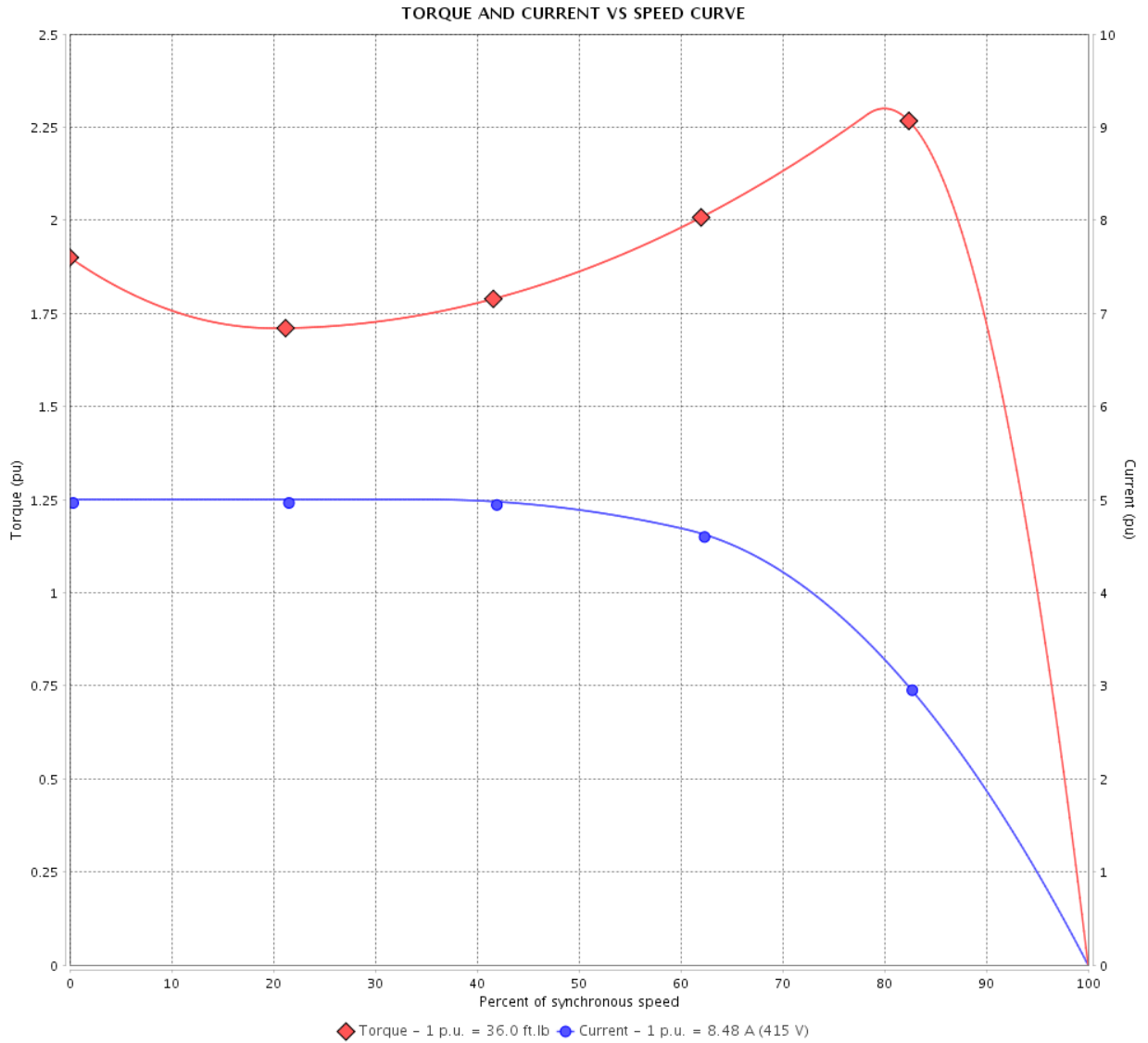
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Performance : 415 V 50 Hz 8P IE3

Rated current : 8.48 A
 LRC : 5.0
 Rated torque : 36.0 ft.lb
 Locked rotor torque : 190 %
 Breakdown torque : 229 %
 Rated speed : 730 rpm

Moment of inertia (J) : 3.41 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 80 K
 Design : B

Locked rotor time : 59s (cold) 33s (hot)

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LOAD PERFORMANCE CURVE

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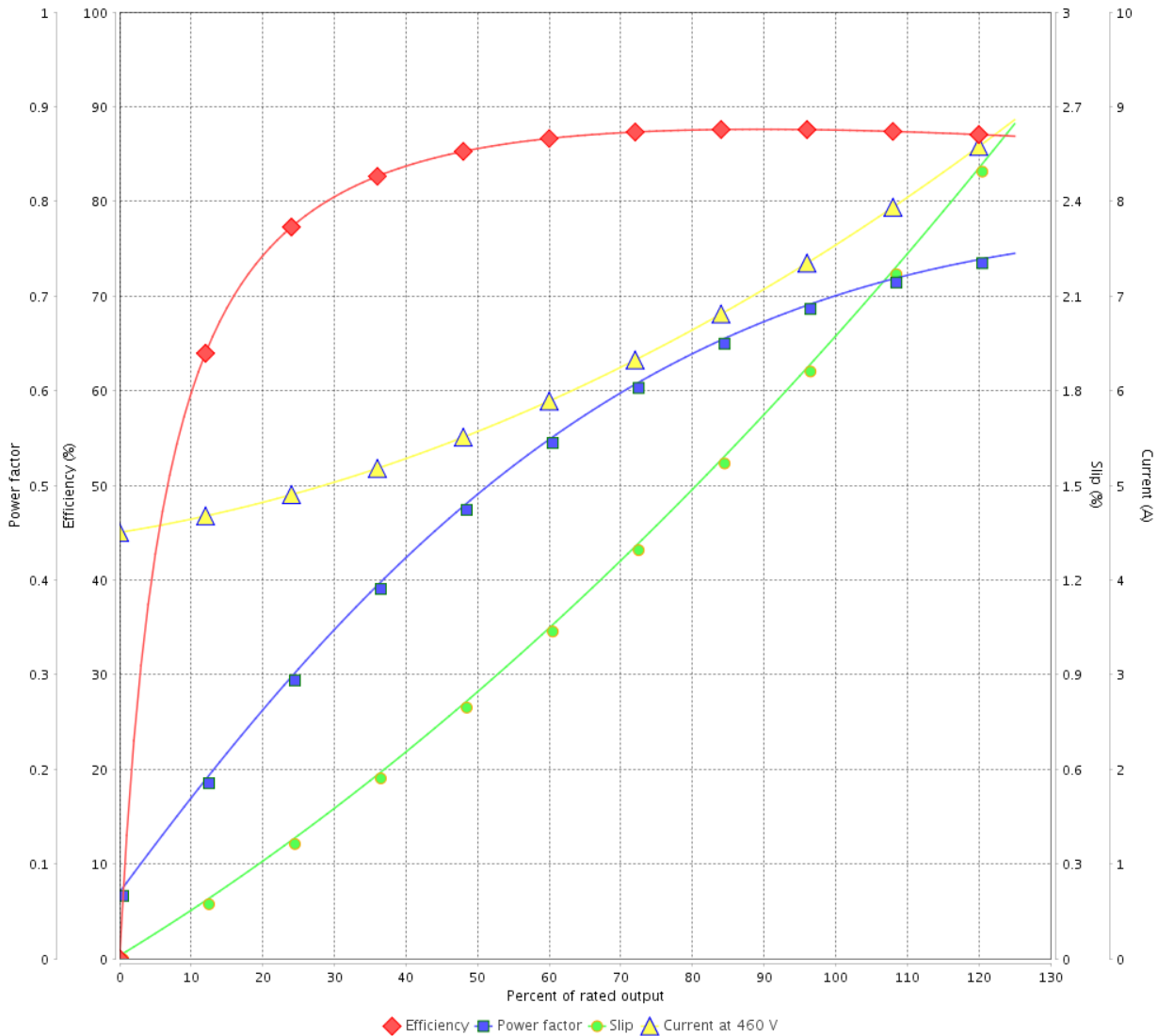
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LRC	: 5.3	Duty cycle	: Cont.(S1)
Rated torque	: 29.8 ft.lb	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.25
Breakdown torque	: 250 %	Temperature rise	: 80 K
Rated speed	: 882 rpm	Design	: B

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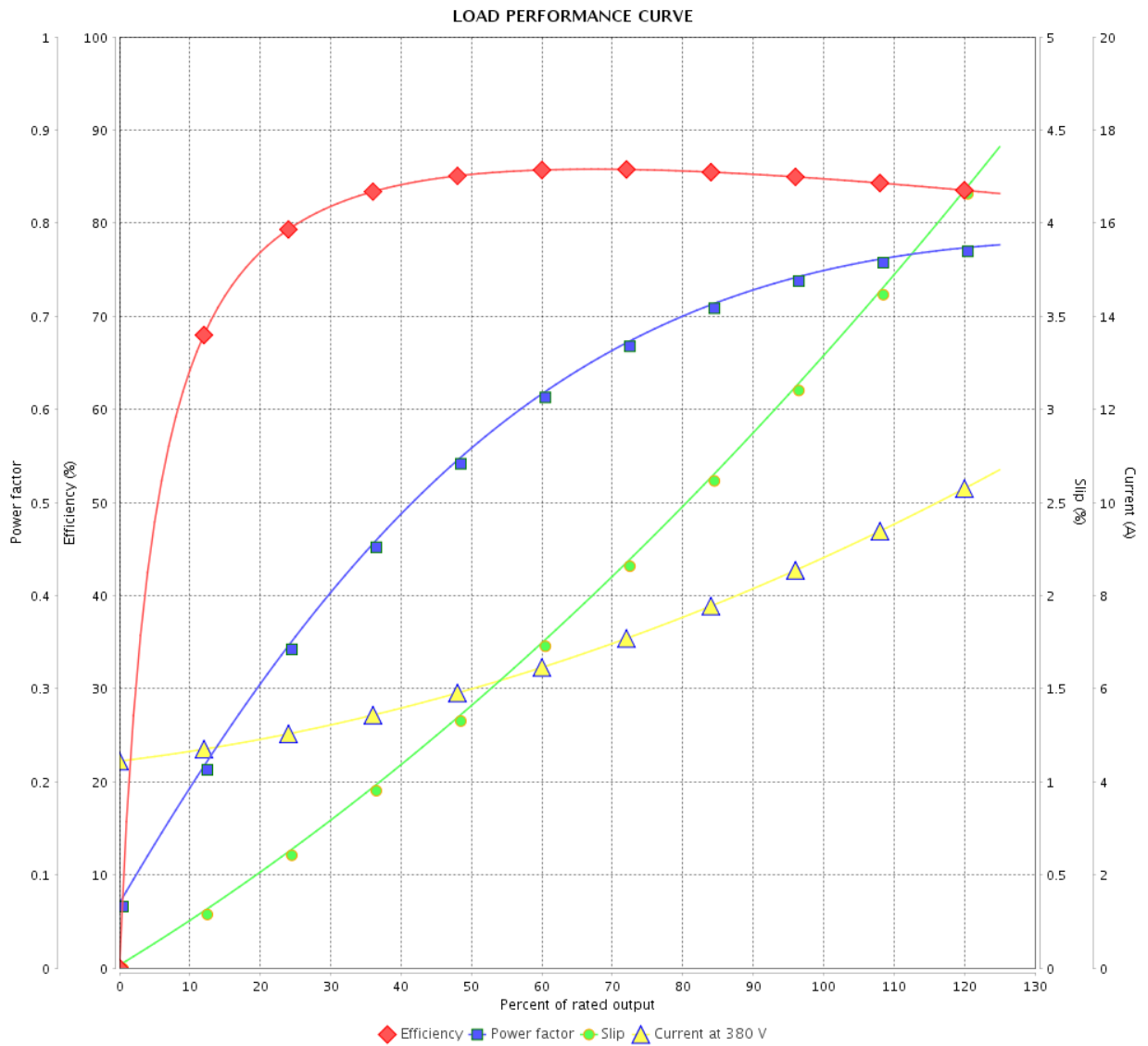


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Catalog # : 00509ST3QIE254TC-W22



Performance : 380 V 50 Hz 8P IE3

Rated current : 8.84 A
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 Rated torque : 36.2 ft.lb
 Locked rotor torque : 150 %
 Breakdown torque : 190 %
 Rated speed : 725 rpm

Moment of inertia (J) : 3.41 sq.ft.lb
 Duty cycle : Cont.(S1)
 Insulation class : F
 Service factor : 1.15
 Temperature rise : 105 K
 Design : B

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Three Phase Induction Motor - Squirrel Cage



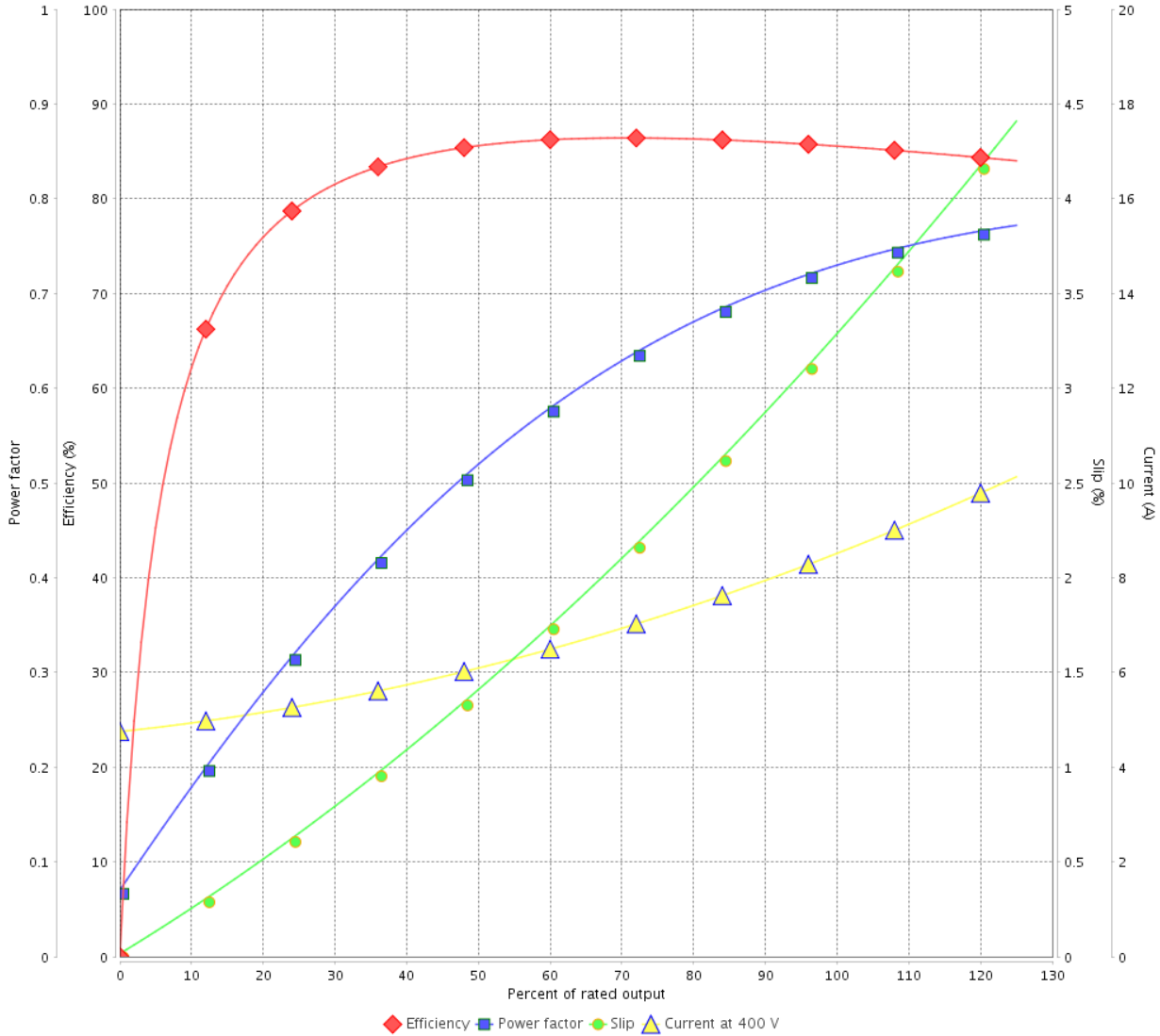
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 Insulation class : F
 Service factor : 1.15
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Three Phase Induction Motor - Squirrel Cage

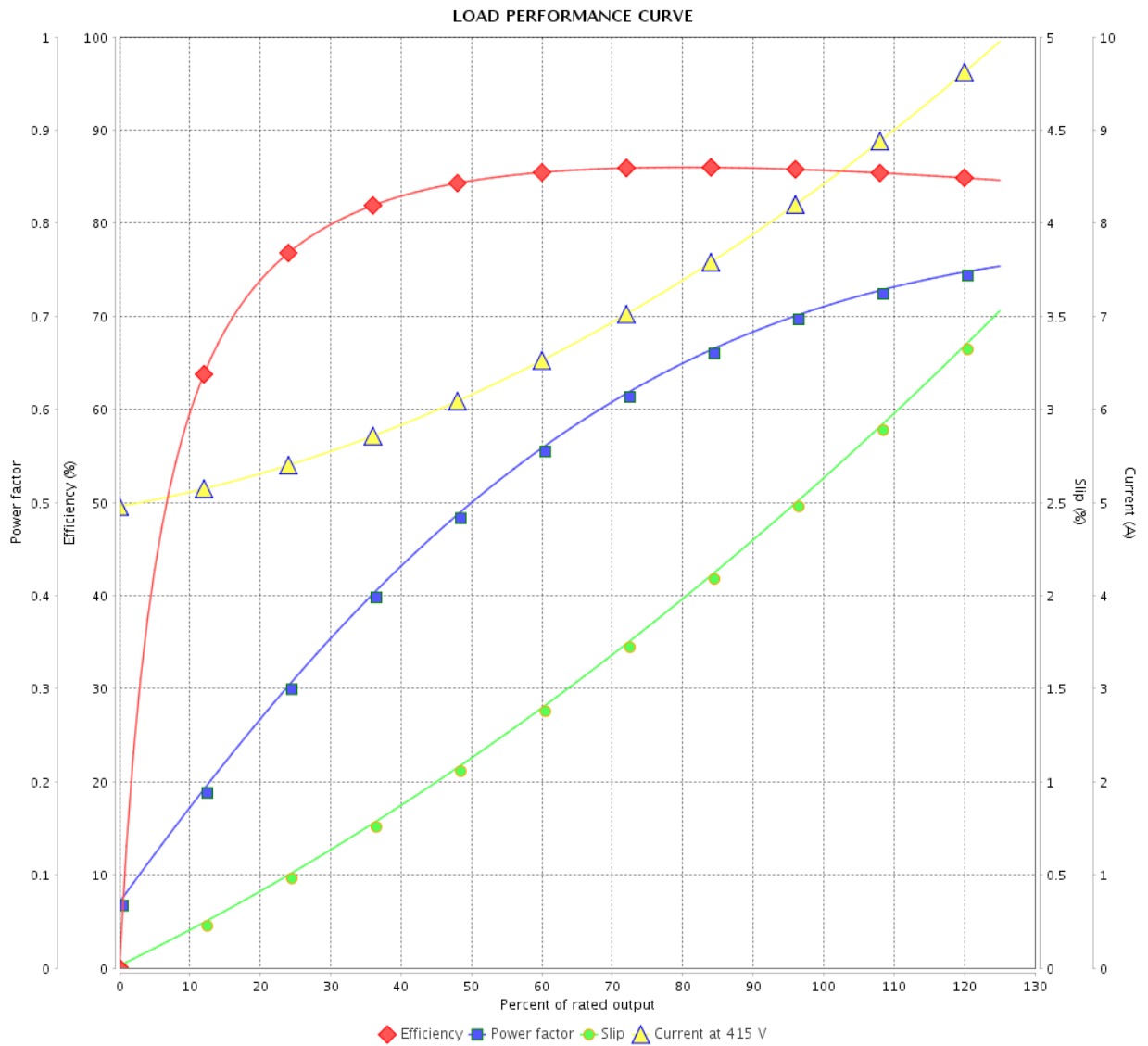


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THERMAL LIMIT CURVE



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Heating constant

Cooling constant

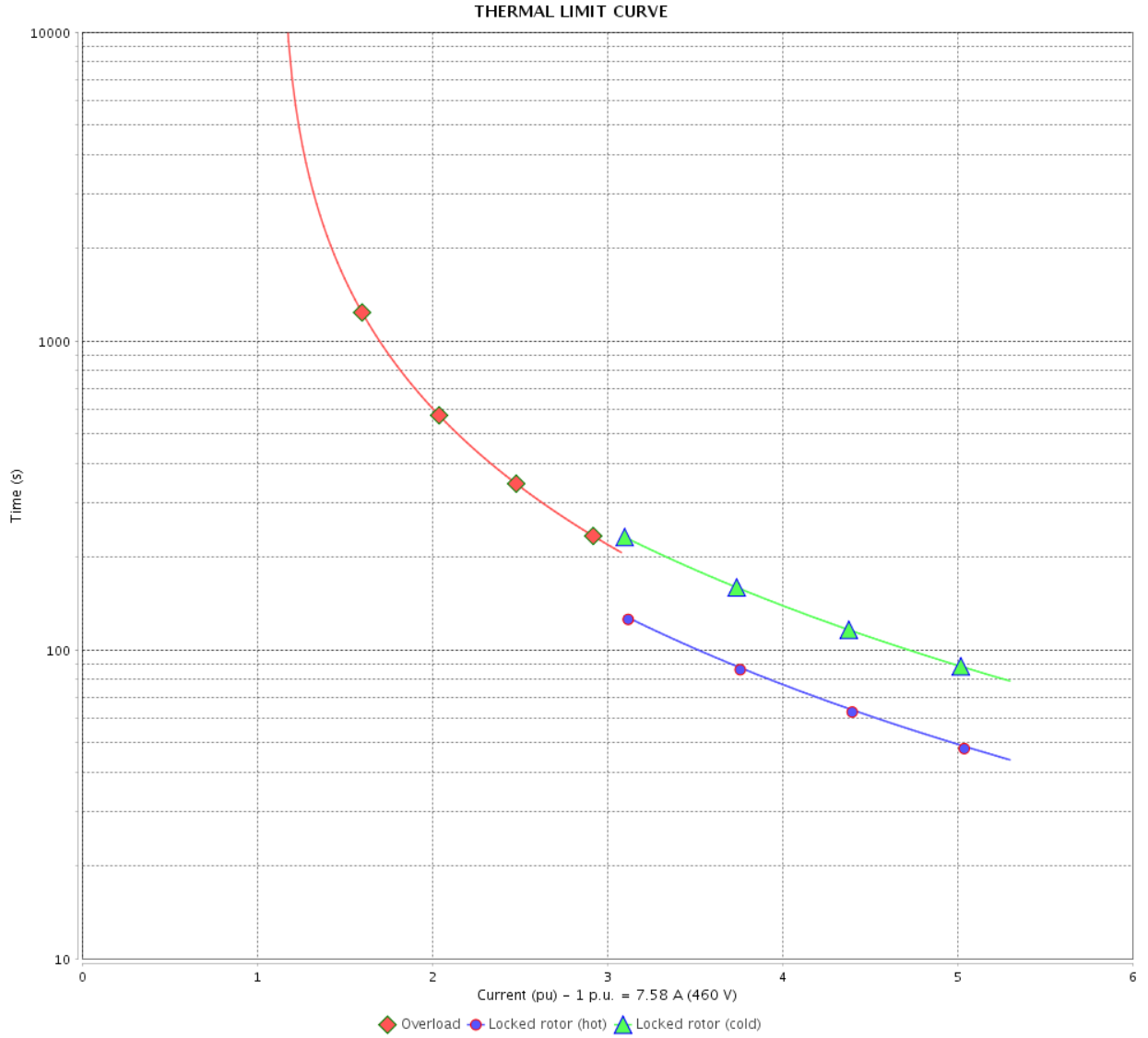
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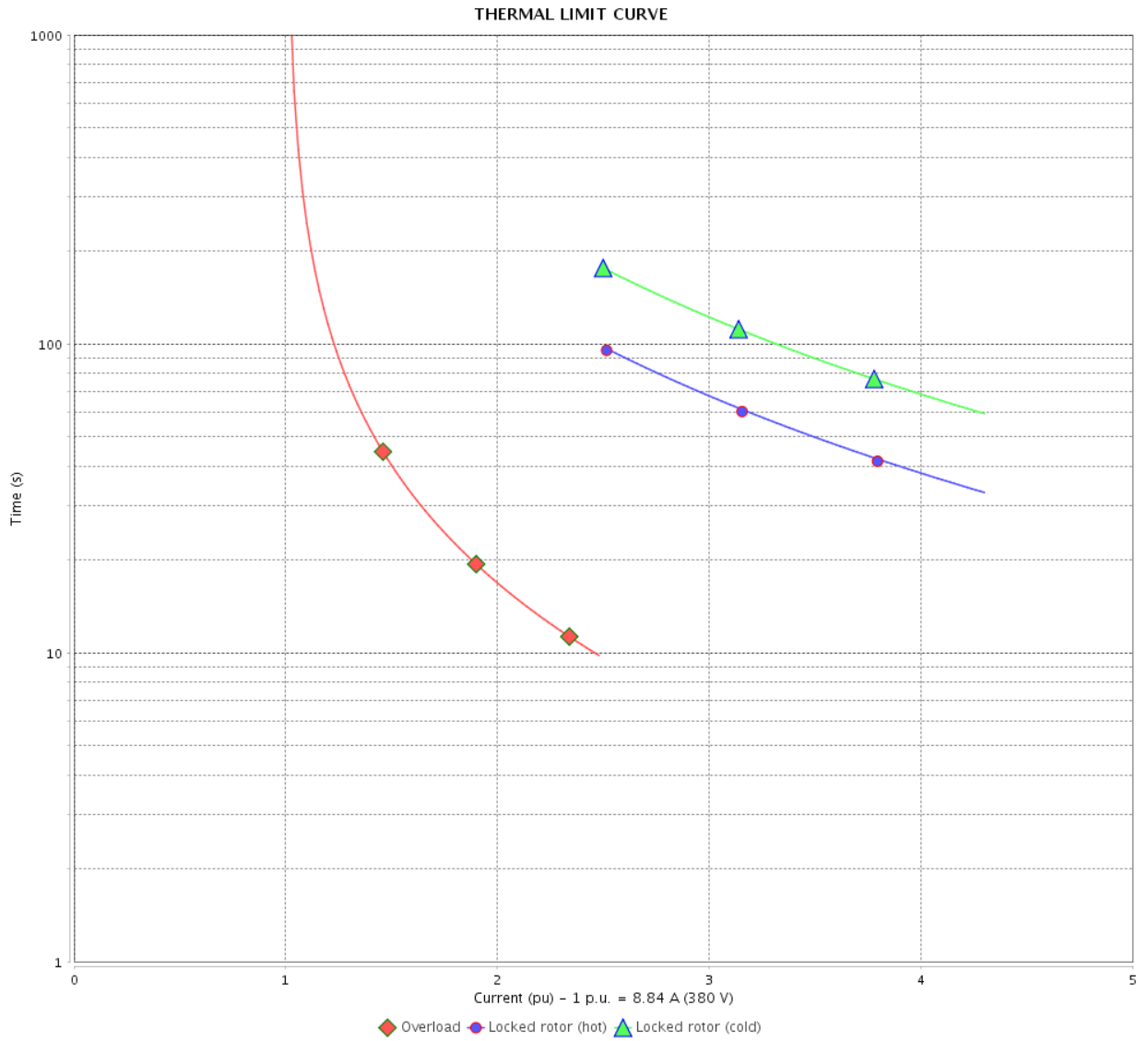
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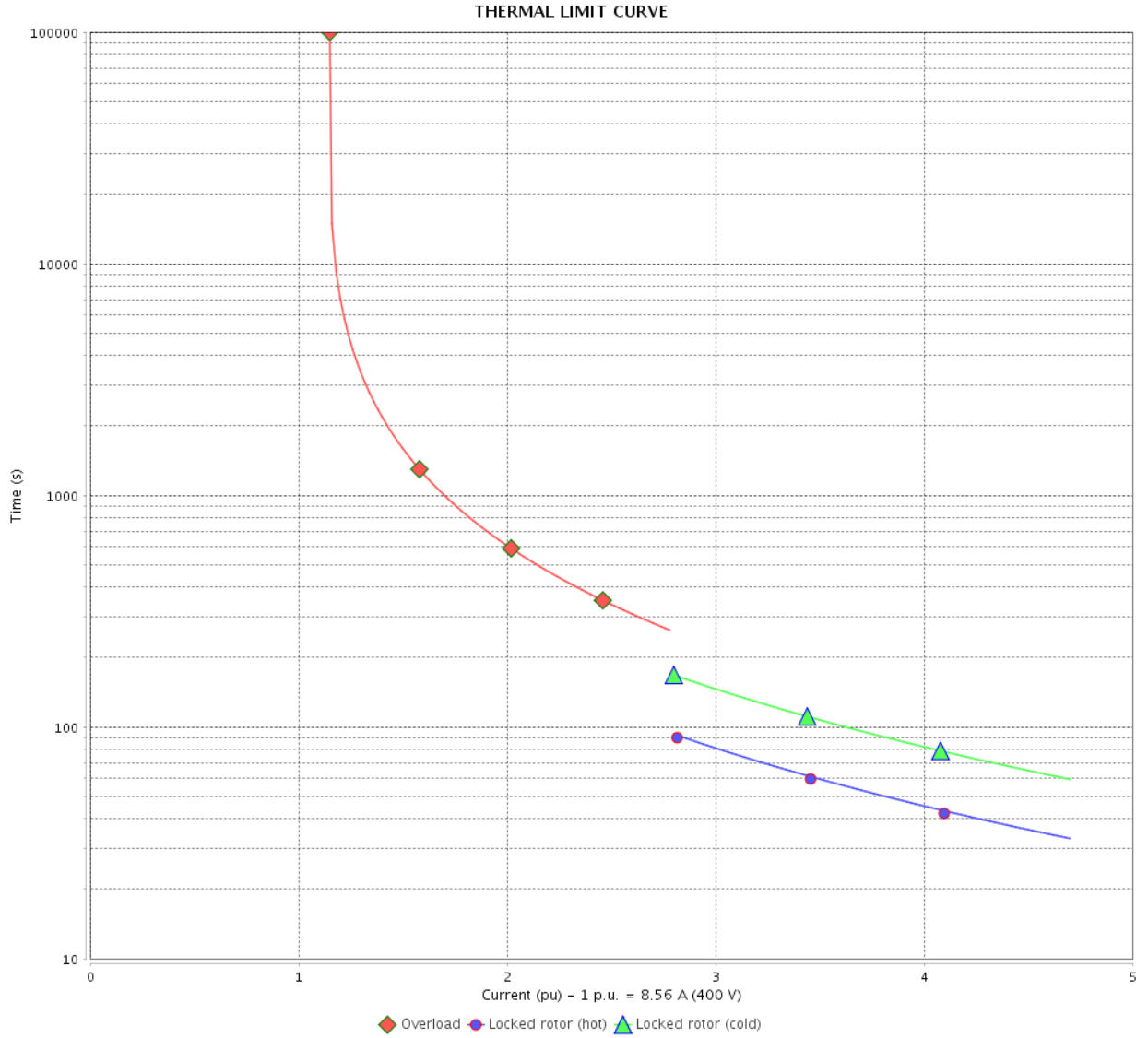
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Breakdown torque	: 229 %	Temperature rise	: 80 K
Rated speed	: 730 rpm	Design	: B

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Cooling constant

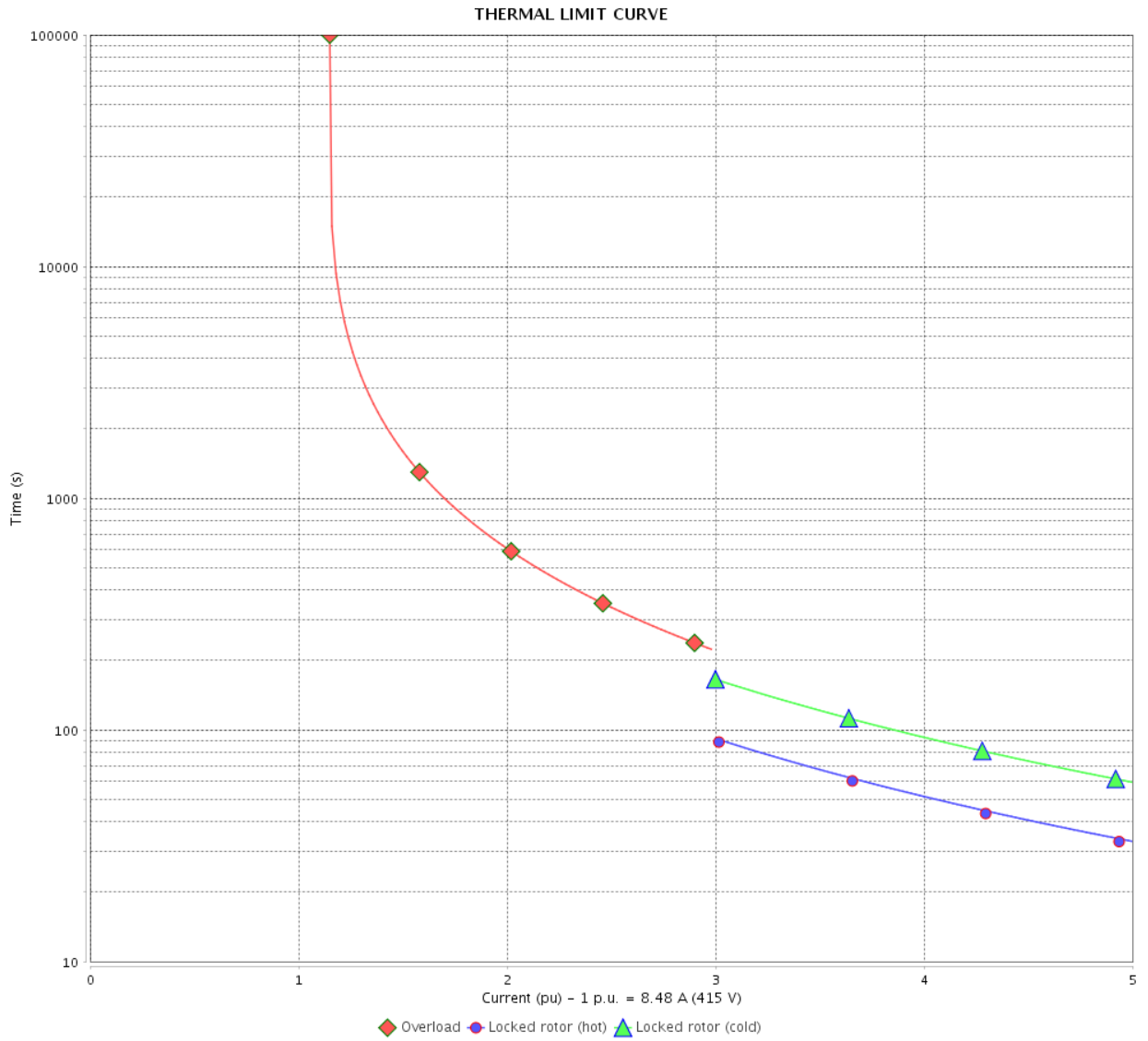
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Date				
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VFD OPERATION CURVE

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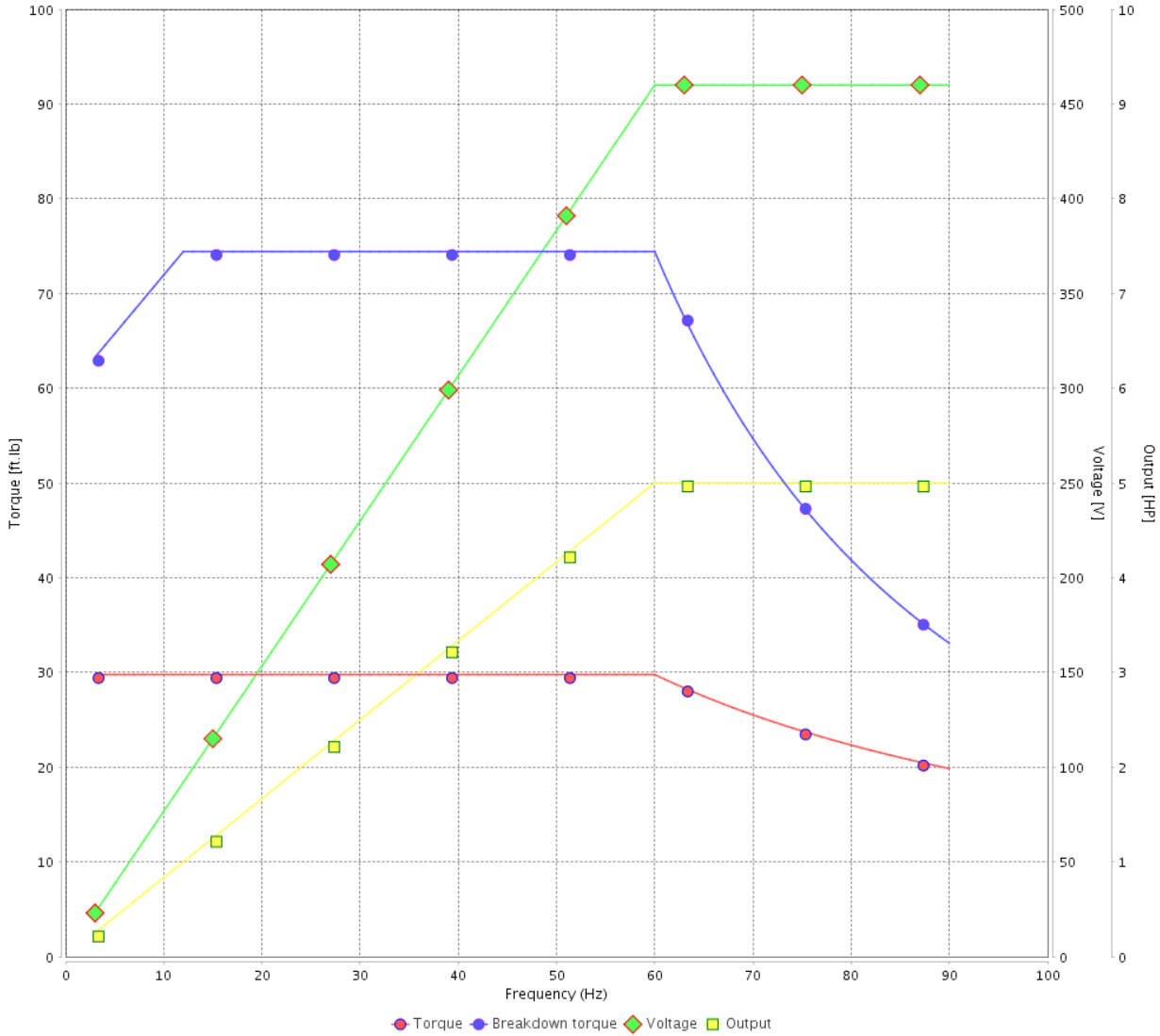
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 Insulation class : F
 Service factor : 1.25
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Rev.	Changes Summary	Performed	Checked	Date
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VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

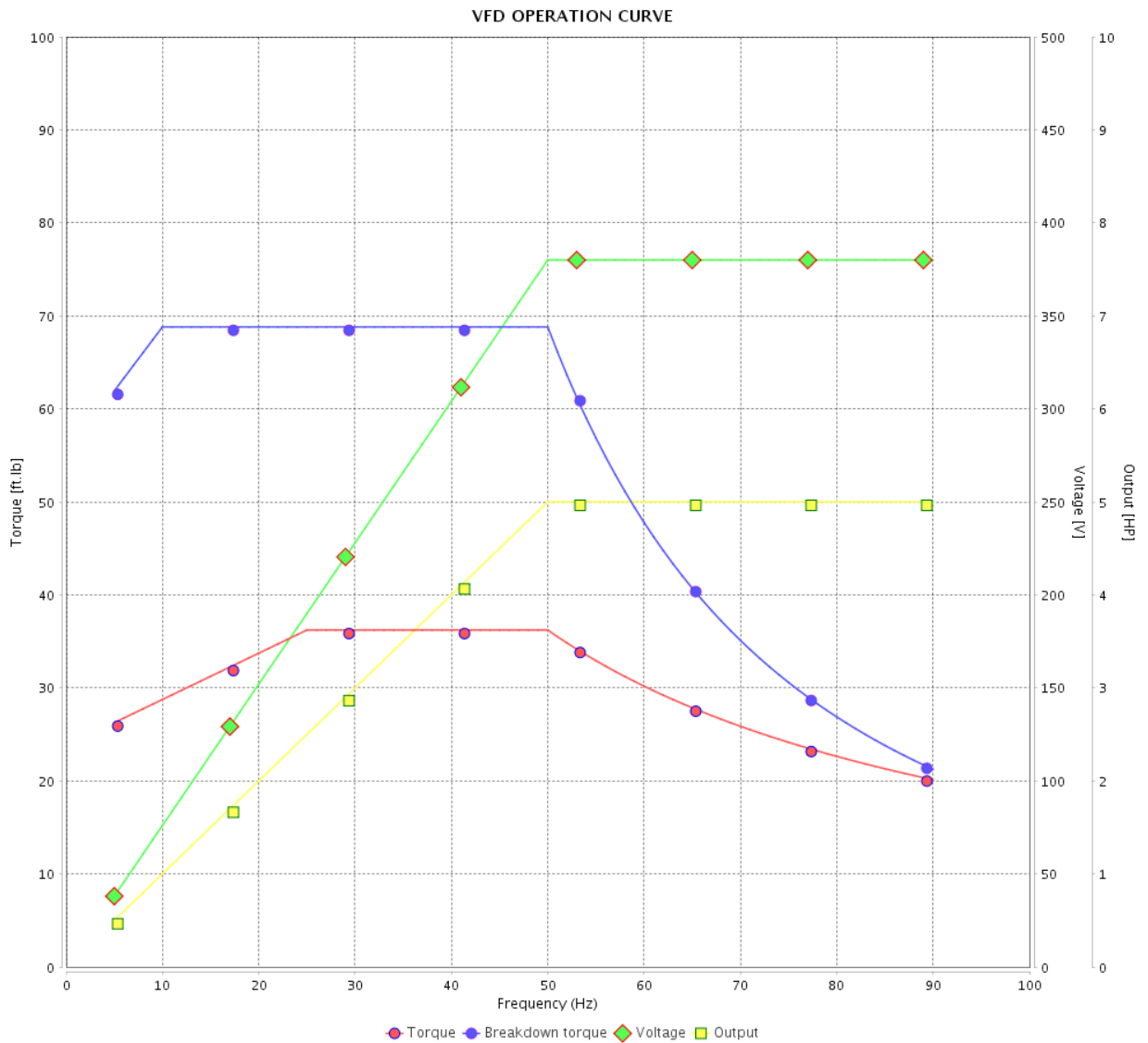


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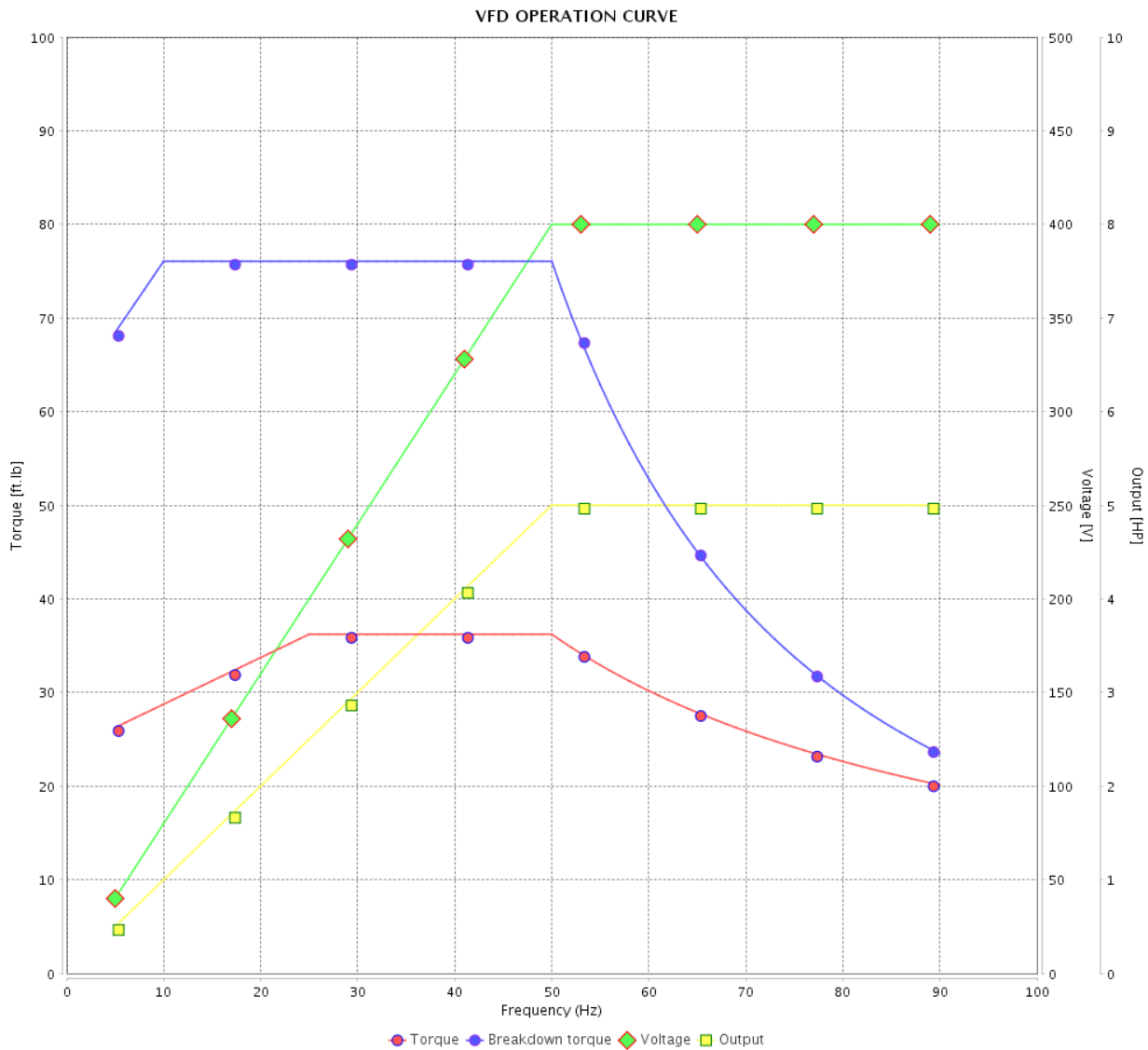


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VFD OPERATION CURVE

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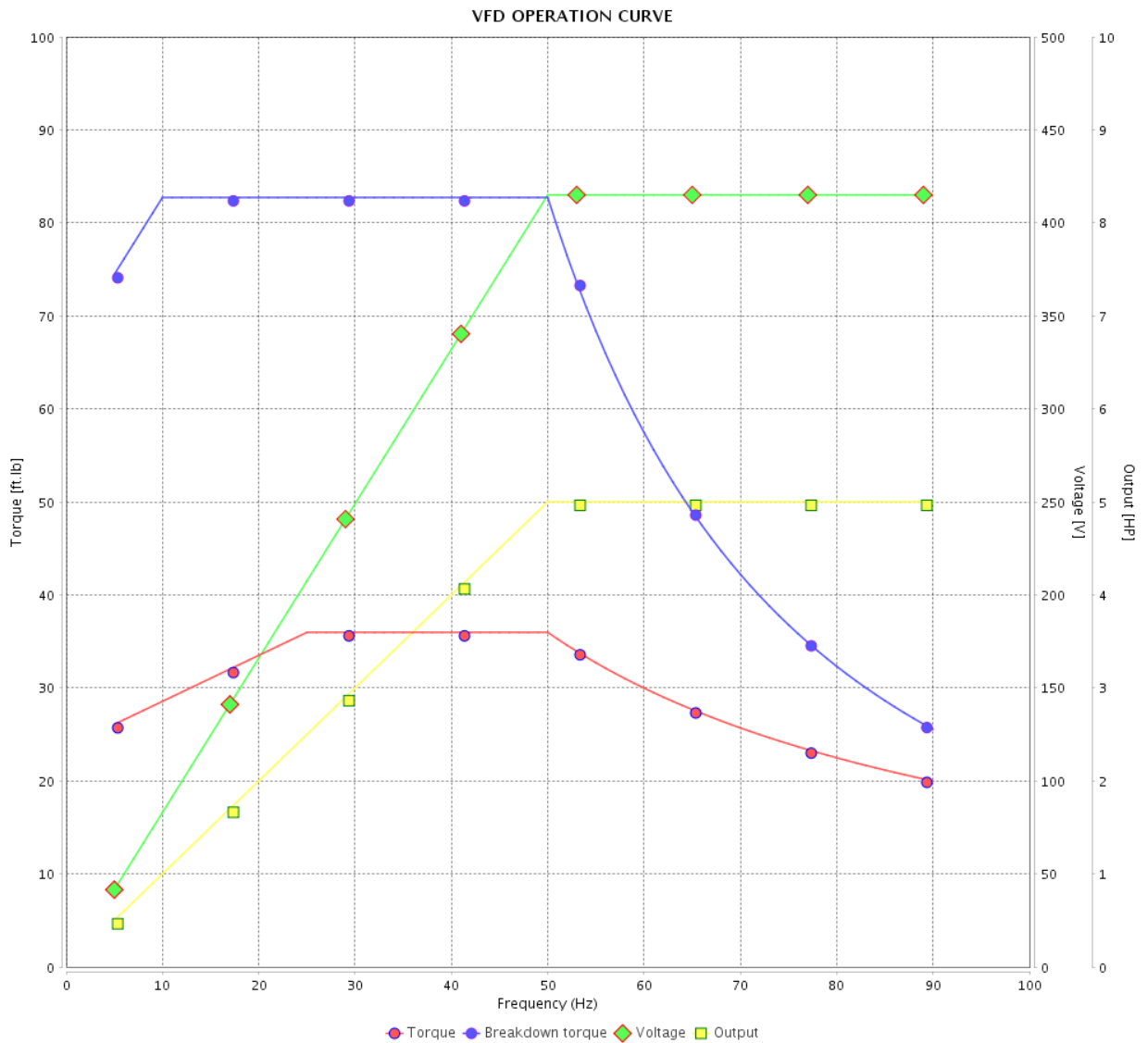


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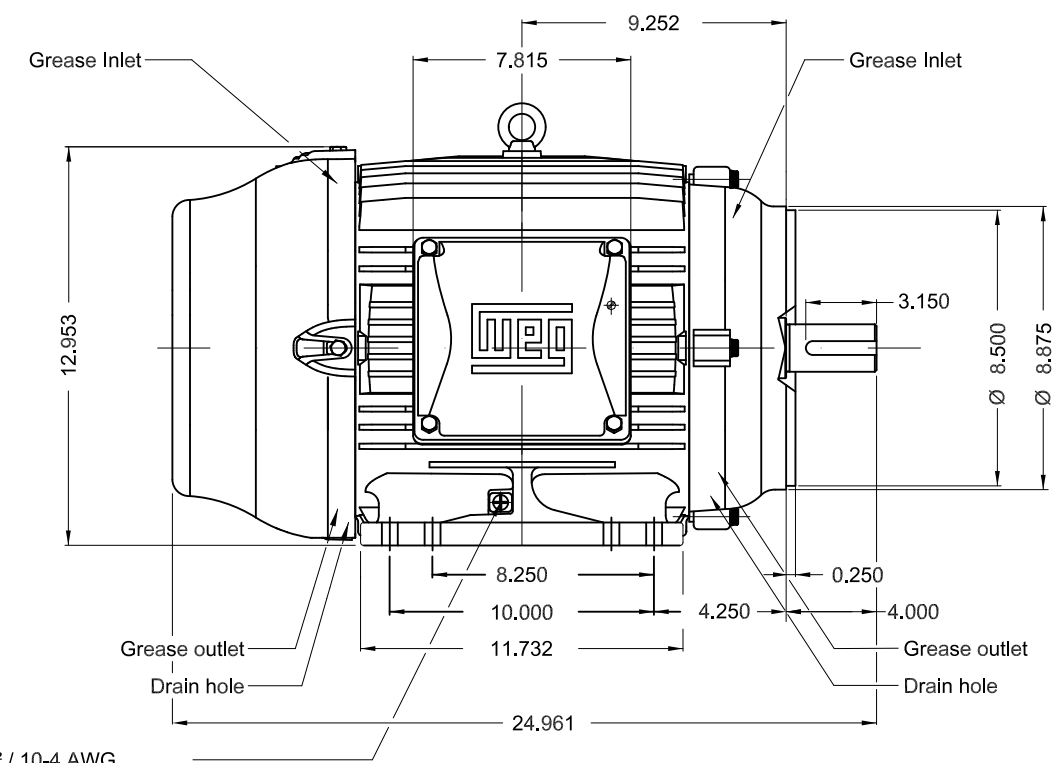
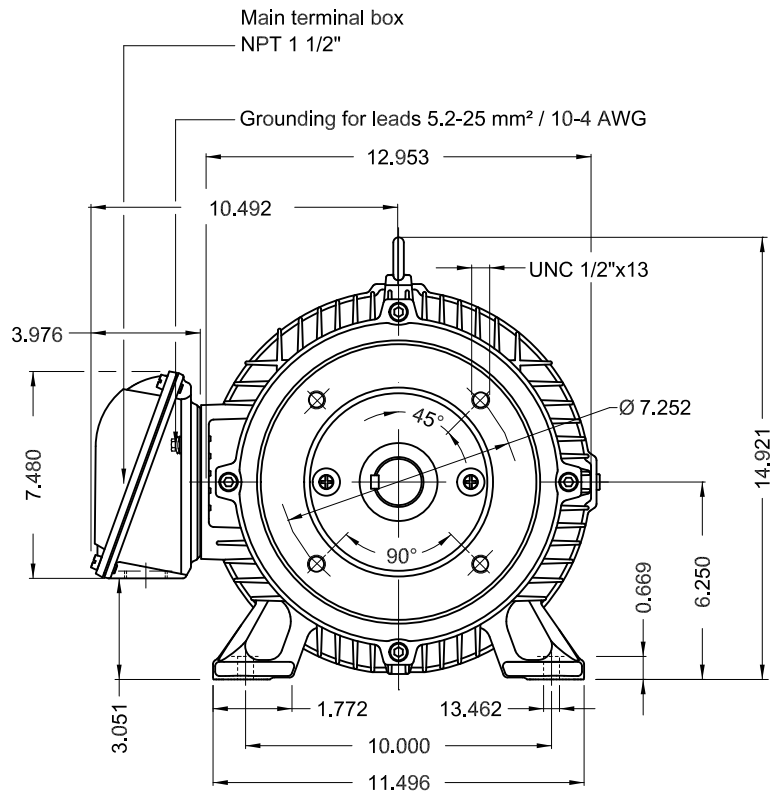
Rev.	Changes Summary	Performed	Checked	Date
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1 2 3 4 5 6

A

B

C

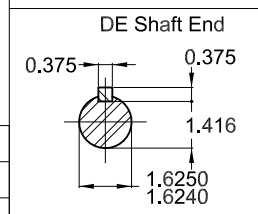


Grounding for leads 5.2-25 mm² / 10-4 AWG

D

E

Color RAL 5009
 Painting plan 202E
 Mounting B34R(D)



5 HP 08 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR IEEE 841 W22 PREM. EFF.					
CHECKED		FRAME 254/6TC IP55 TEFC					
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET	1 / 1		

PREVIEW
 WDD





NEMA
Premium
W22



FOR SAFE AREA
Mod.TE1BFOXON
CC029A



Class I, Div 2, Gr A, B, C and D - T3
Class I, Zone 2, IIC - T3
Class II, Div 2, Gr F and G - T4
For use on PWM: Gr. A, B, C, D and F,
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 00509ST3QIE254TC-W22

Inverter Duty Motor
Severe Duty



PH3 60Hz Fr. 254/6TC 1000m.a.s.l. IP55 TEFC 291lb

V 460

A 7.58

HP 5.0

kW 3.7

SF 1.25

SFA 9.47

RPM 882

PF 0.70

AMB 40°C

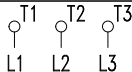
INS cl. F DT80K

NEMA NOM EFF 87.5%

DUTY CONT.

DES B Code H

GUARANT. EFF 85.5%



460V

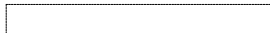


→ 6309-C3 (13g) 45BC03X30

→ 6209-C3 (9g) 45BC02X30



MOBIL POLYREX EM (20000h)



MADE IN BRAZIL
12384947