

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer :								
Product line	: NEMA Premium Efficiency Three-Phase	Product code :	11165651					
		Catalog # :	12512ET3ERB445T-W22					
Frame	: 444/5T	Cooling method	: IC411 - TEFC					
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>	: 1814 lb					
Protection degree	: IP55	Moment of inertia (J)	: 104 sq.ft.lb					
Design	: B							
Output [HP]	125	100	100	100	125	125	125	
Poles	6	6	6	6	6	6	6	
Frequency [Hz]	60	50	50	50	50	50	50	
Rated voltage [V]	230/460	380	400	415	380	400	415	
Rated current [A]	286/143	143	138	130	172	165	160	
L. R. Amperes [A]	1830/915	915	980	991	877	941	992	
LRC [A]	6.4x(Code G)	6.4x(Code G)	7.1x(Code H)	7.6x(Code J)	5.1x(Code E)	5.7x(Code F)	6.2x(Code G)	
No load current [A]	112/56.0	55.4	59.3	62.3	55.4	59.3	62.3	
Rated speed [RPM]	1185	985	985	985	980	980	985	
Slip [%]	1.25	1.50	1.50	1.50	2.00	2.00	1.50	
Rated torque [ft.lb]	554	533	533	533	670	670	666	
Locked rotor torque [%]	210	200	229	250	160	180	200	
Breakdown torque [%]	240	240	260	290	190	210	229	
Service factor	1.15	1.00	1.00	1.00	1.00	1.00	1.00	
Temperature rise	80 K	80 K	80 K	80 K	105 K	105 K	105 K	
Locked rotor time	34s (cold) 19s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	27s (cold) 15s (hot)	
Noise level <sup>2</sup>	69.0 dB(A)	65.0 dB(A)	65.0 dB(A)	65.0 dB(A)	65.0 dB(A)	65.0 dB(A)	65.0 dB(A)	
Efficiency (%)	25%	95.2	94.9	94.8	94.8	95.7	95.7	95.7
	50%	95.0	94.8	94.7	94.7	95.0	95.0	95.0
	75%	95.4	94.9	94.9	95.1	94.5	94.5	95.0
	100%	95.0	94.6	94.6	94.8	93.6	93.6	94.1
Power Factor	25%	0.45	0.43	0.40	0.38	0.51	0.47	0.44
	50%	0.70	0.68	0.65	0.62	0.76	0.73	0.70
	75%	0.79	0.79	0.77	0.75	0.82	0.81	0.79
	100%	0.83	0.84	0.83	0.81	0.85	0.84	0.83
Bearing type	: NU-319 C3	6316 C3	Foundation loads					
Sealing	: WSeal	WSeal	Max. traction	: 3179 lb				
Lubrication interval	: 9000 h	16000 h	Max. compression	: 4993 lb				
Lubricant amount	: 45 g	34 g						
Lubricant type	: Mobil Polyrex EM							
Notes								
USABLE @208V 316A SF 1.00 SFA 316A								
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



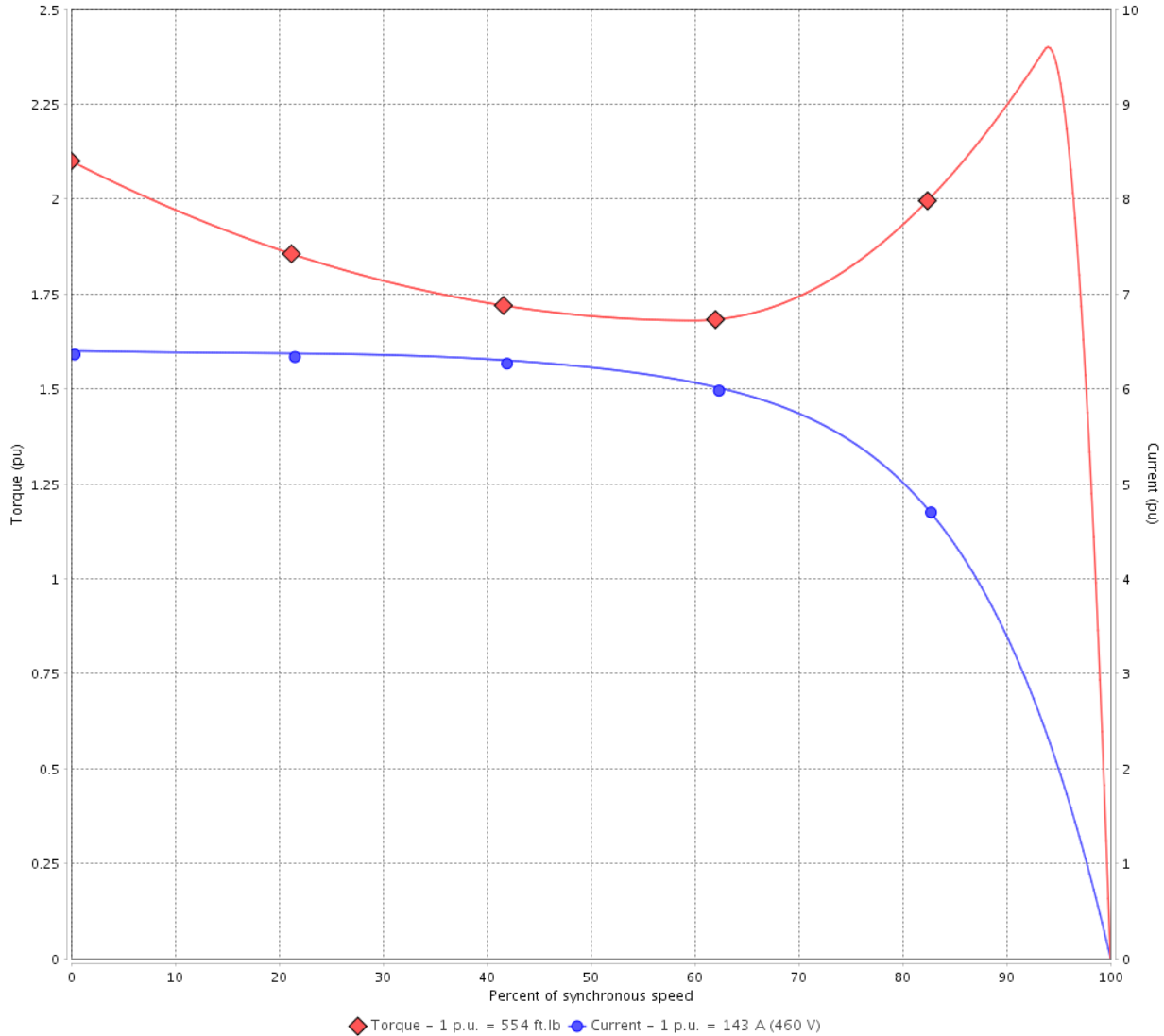
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 230/460 V 60 Hz 6P

Rated current : 286/143 A  
 LRC : 6.4  
 Rated torque : 554 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1185 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Locked rotor time : 34s (cold) 19s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



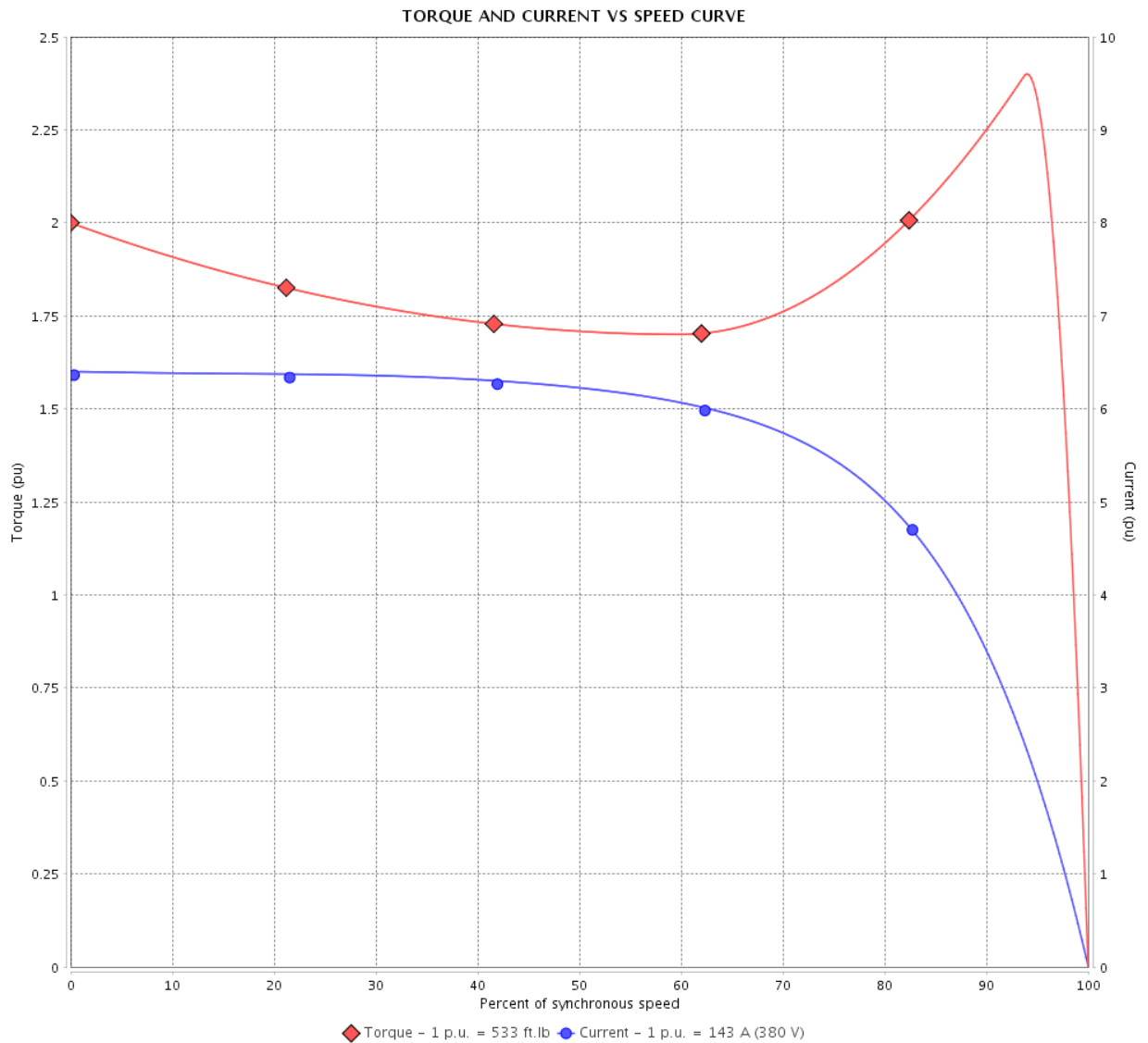
## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22



Performance : 380 V 50 Hz 6P IE3

Rated current	: 143 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

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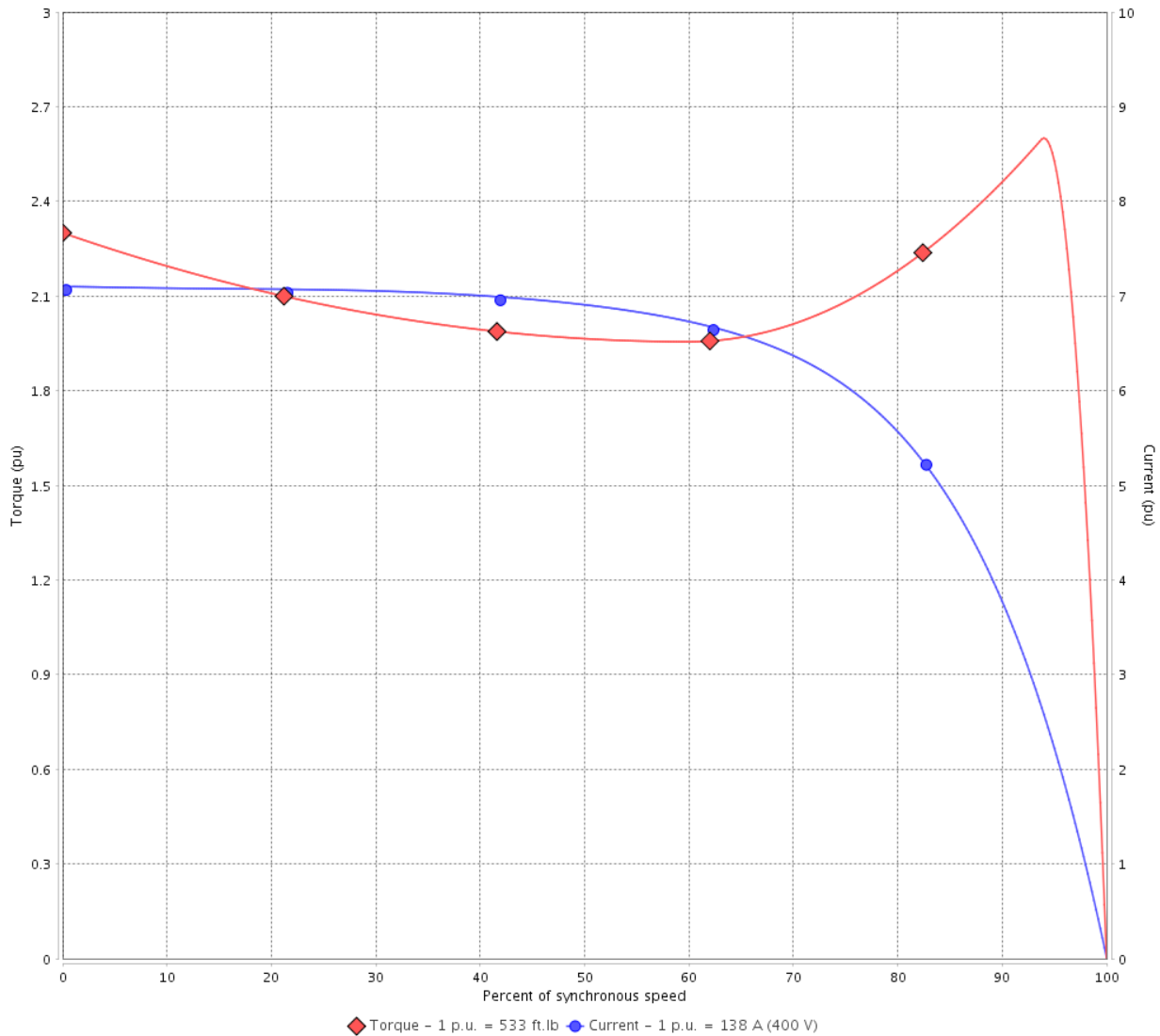
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TORQUE AND CURRENT VS SPEED CURVE



Performance : 400 V 50 Hz 6P IE3

Rated current	: 138 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



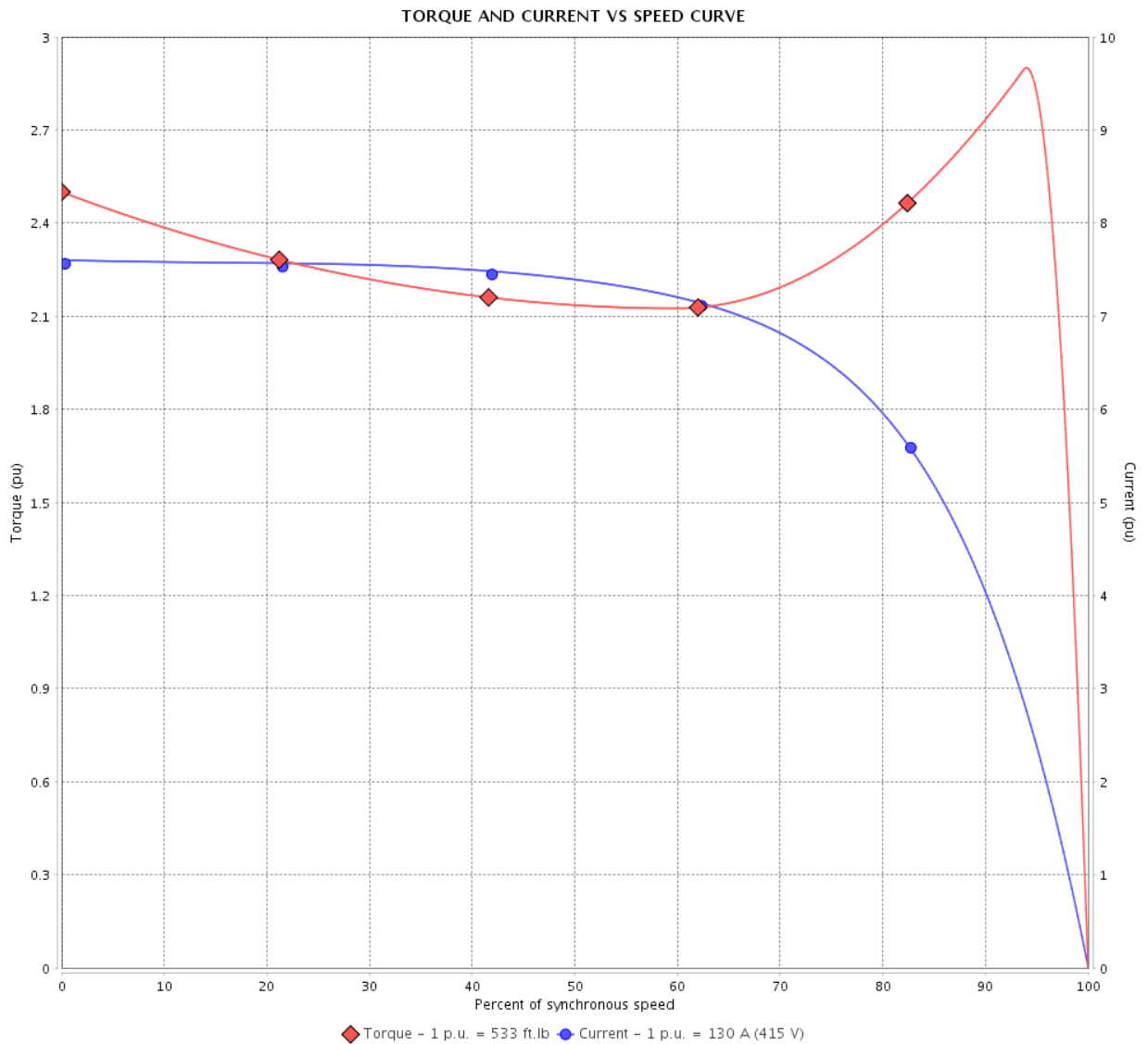
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Performance : 415 V 50 Hz 6P IE3

Rated current	: 130 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

## Three Phase Induction Motor - Squirrel Cage



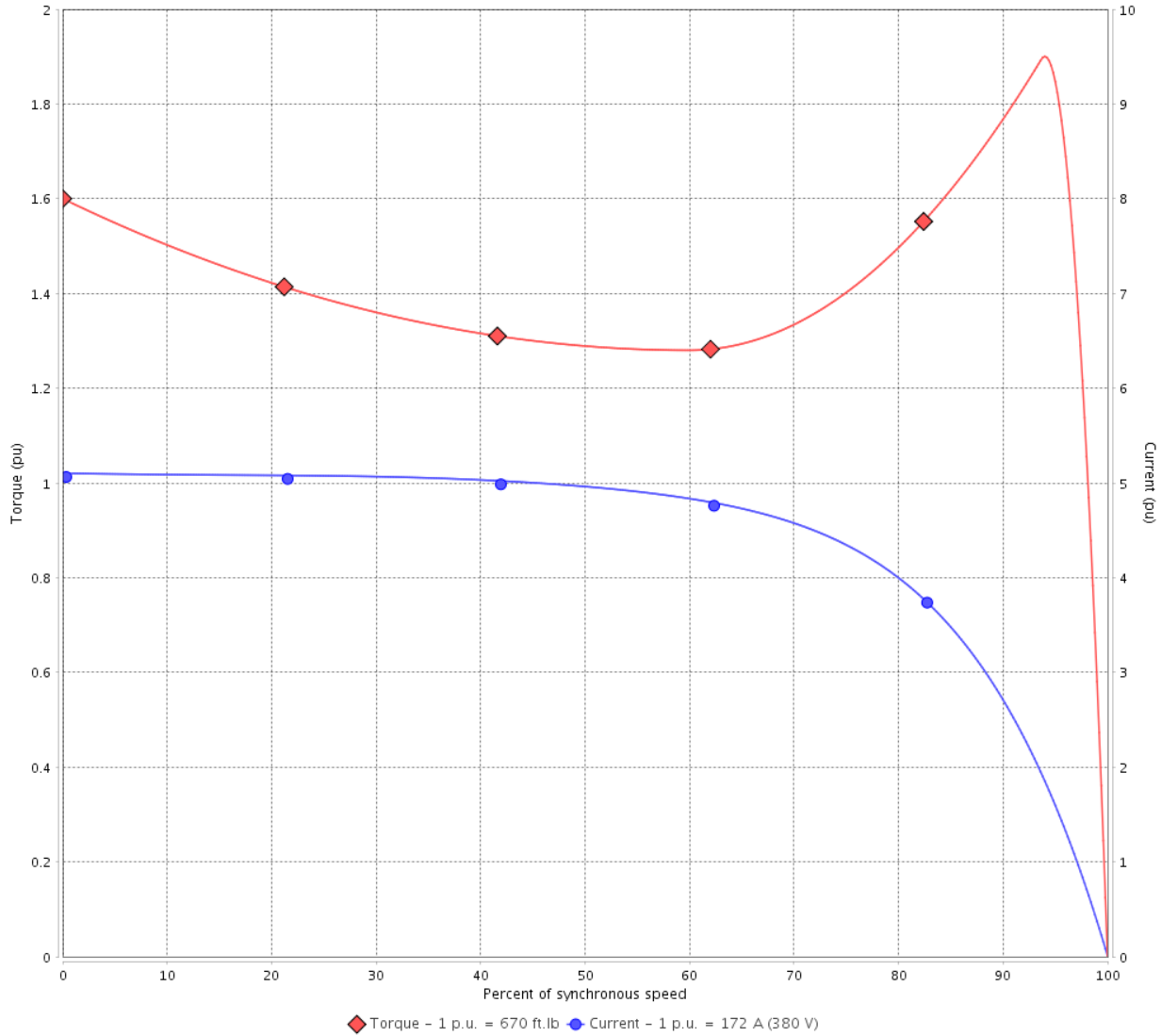
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Product code : 11165651

Catalog # : 12512ET3ERB445T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current	: 172 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.1	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE



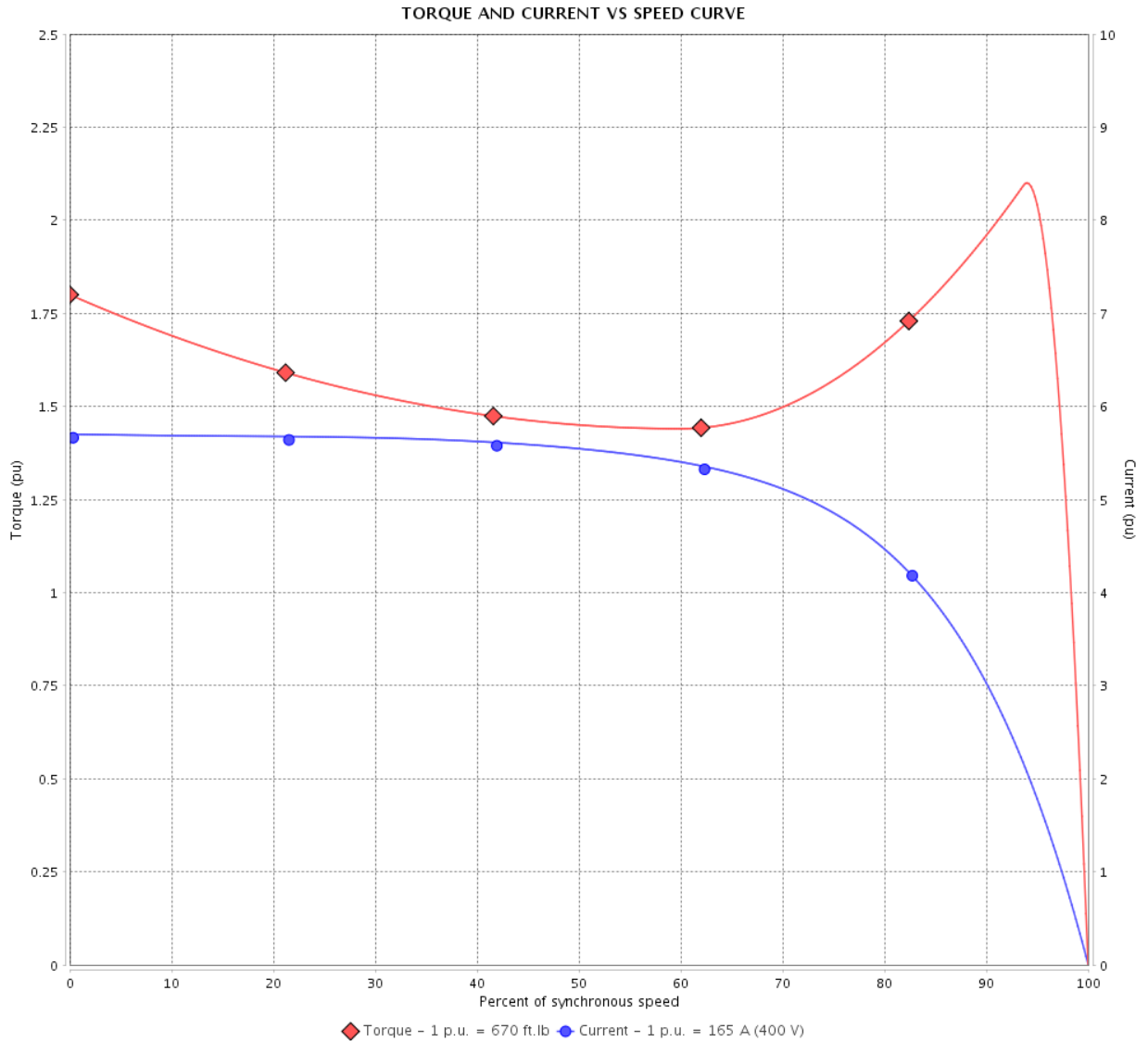
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Customer :

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Catalog # : 12512ET3ERB445T-W22



Performance : 400 V 50 Hz 6P IE1

Rated current	: 165 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.7	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



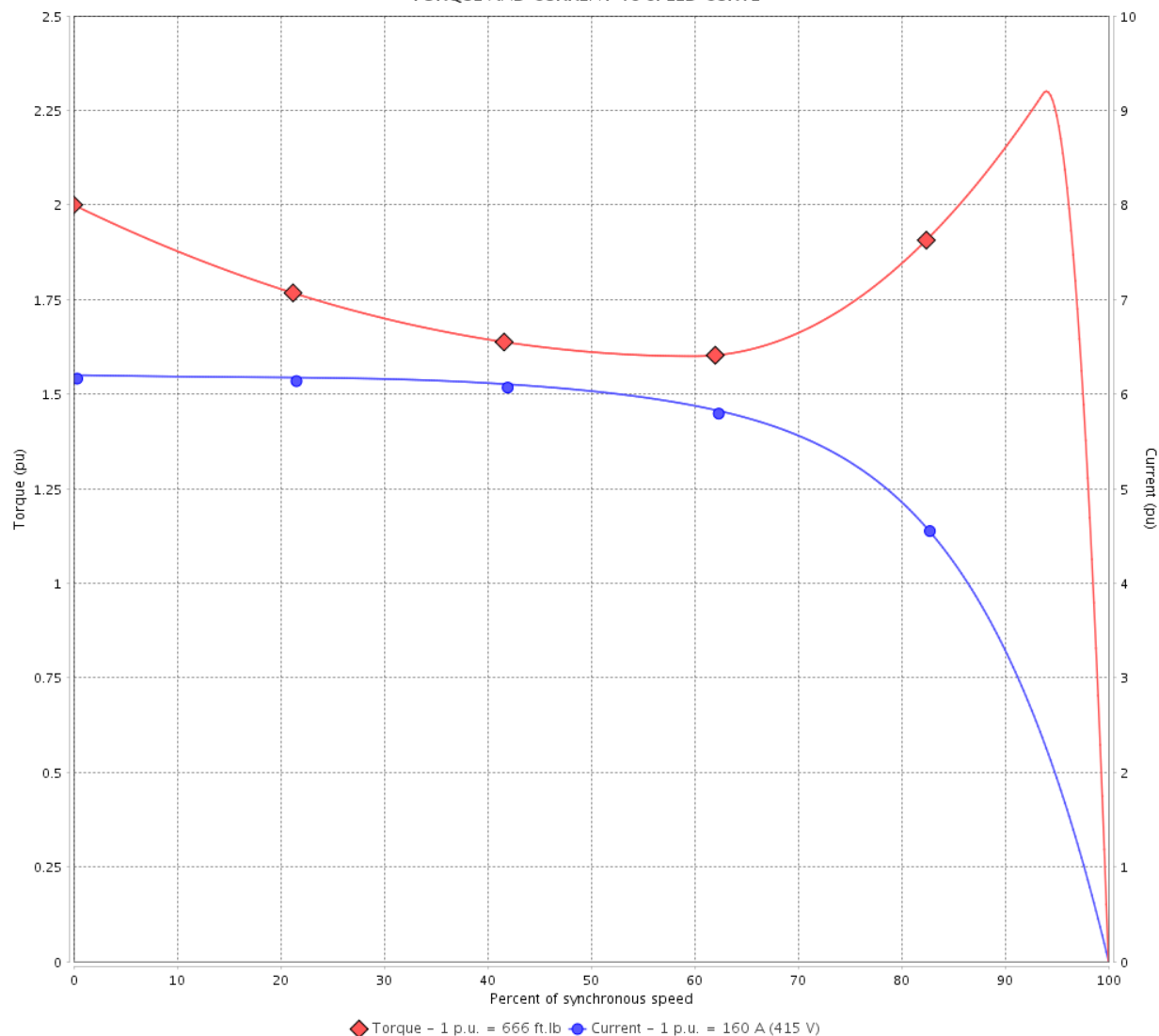
Customer :

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Catalog # : 12512ET3ERB445T-W22

TORQUE AND CURRENT VS SPEED CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current	: 160 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 666 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 985 rpm	Design	: B

Locked rotor time : 27s (cold) 15s (hot)

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

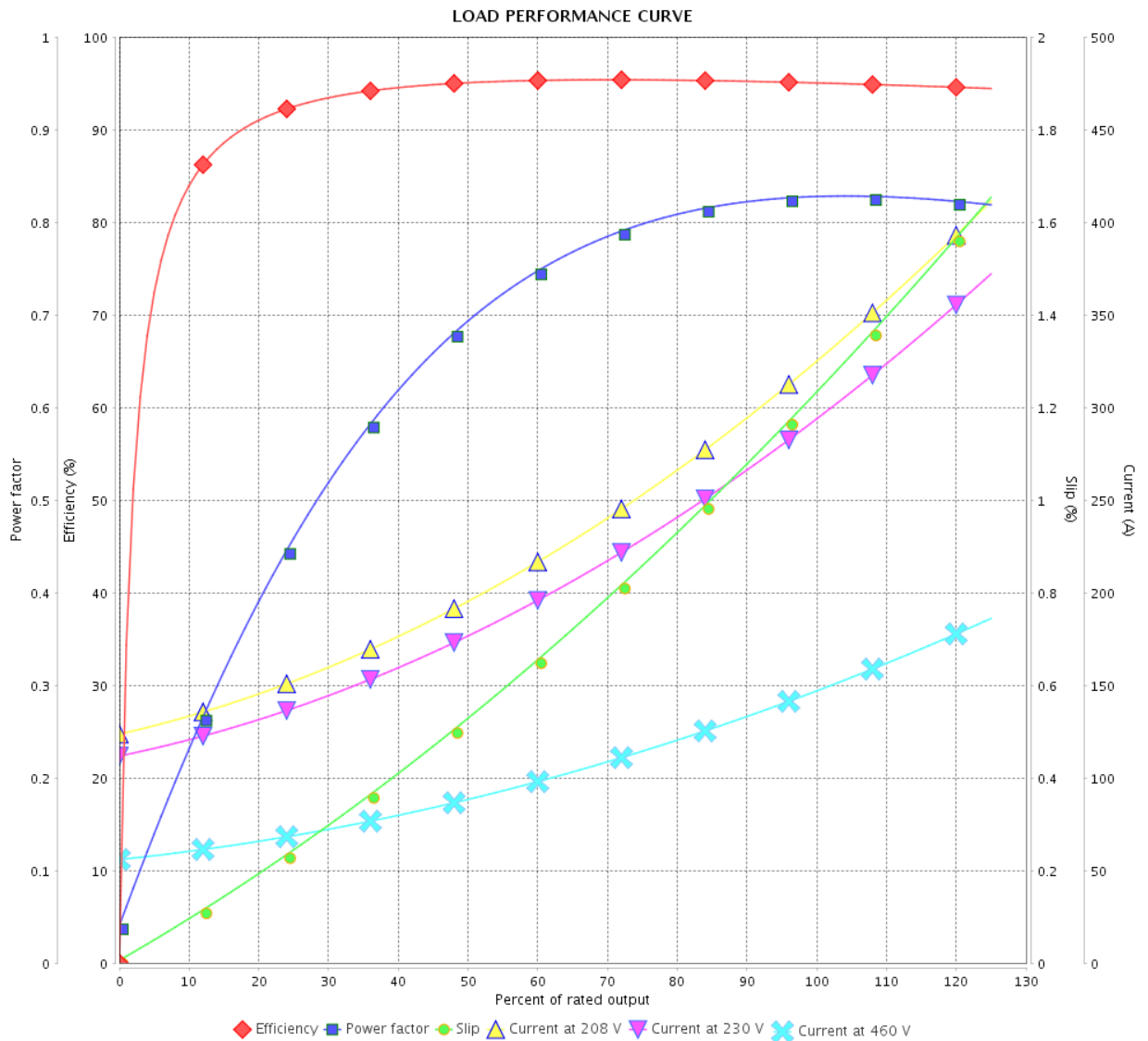


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Catalog # : 12512ET3ERB445T-W22



Performance : 230/460 V 60 Hz 6P

Rated current : 286/143 A  
 LRC : 6.4  
 Rated torque : 554 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1185 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage

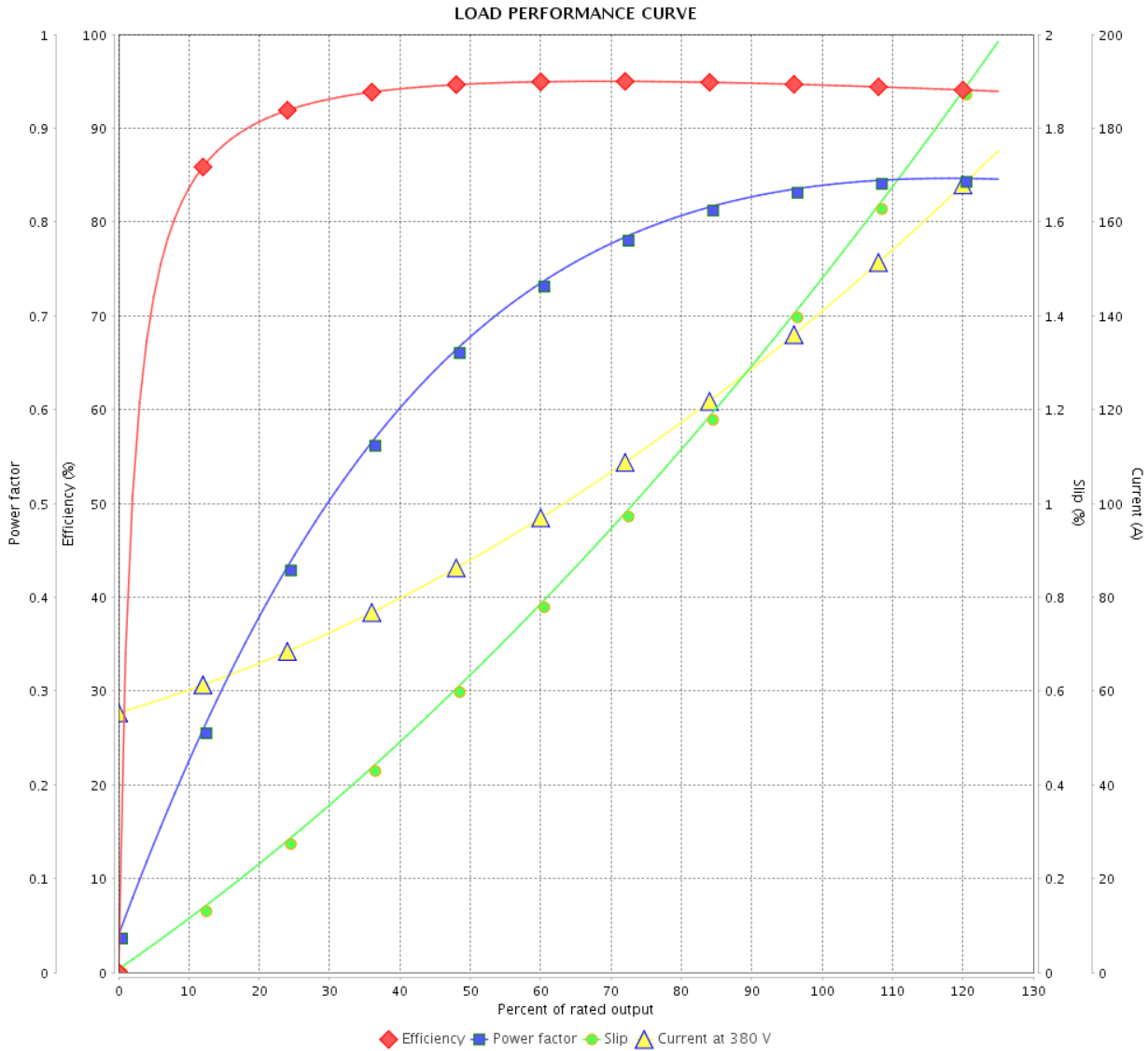


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Performance : 380 V 50 Hz 6P IE3

Rated current : 143 A	Moment of inertia (J) : 104 sq.ft.lb
LRC : 6.4	Duty cycle : Cont.(S1)
Rated torque : 533 ft.lb	Insulation class : F
Locked rotor torque : 200 %	Service factor : 1.00
Breakdown torque : 240 %	Temperature rise : 80 K
Rated speed : 985 rpm	Design : B

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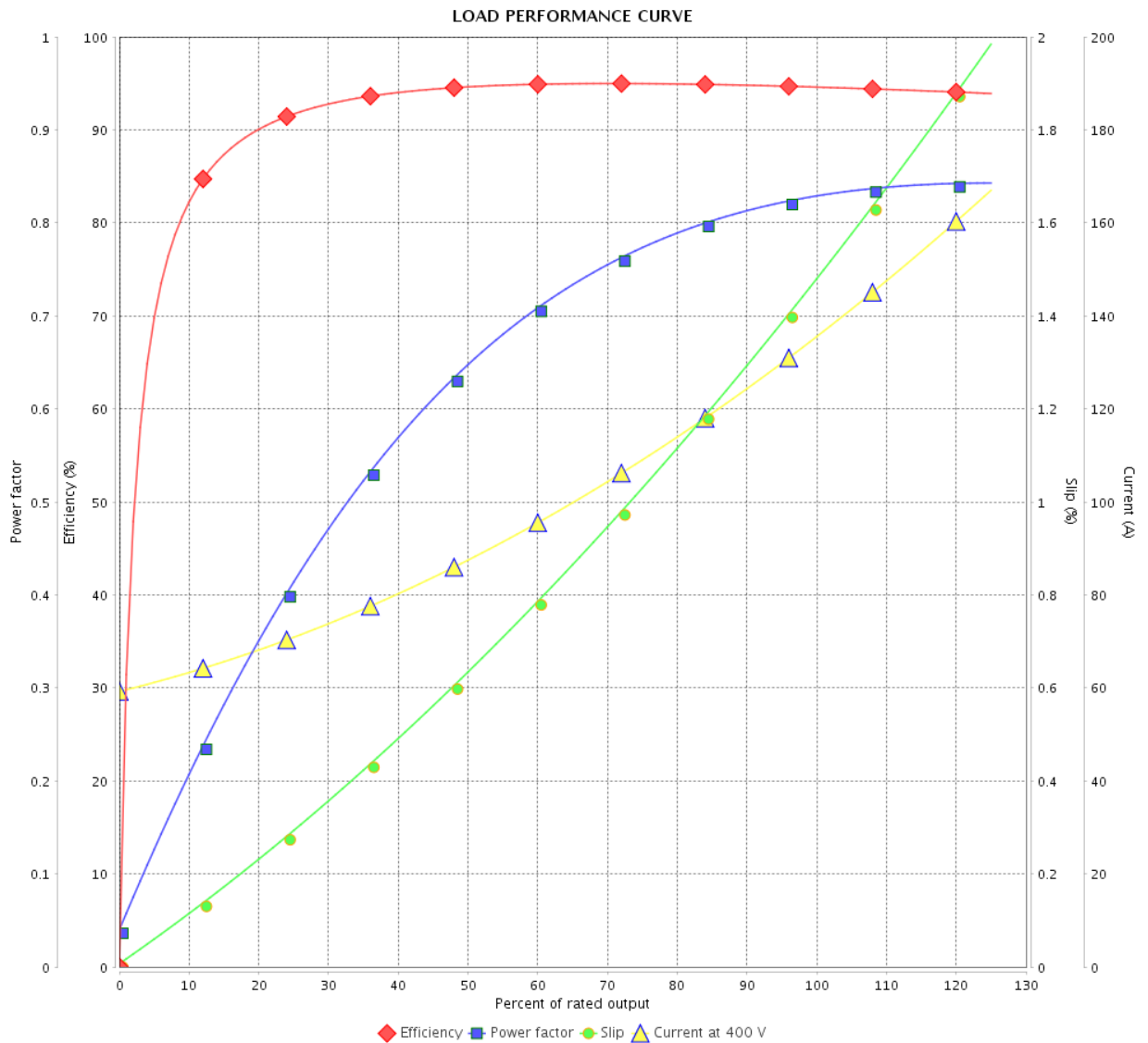


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Performance : 400 V 50 Hz 6P IE3

Rated current : 138 A  
 LRC : 7.1  
 Rated torque : 533 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 260 %  
 Rated speed : 985 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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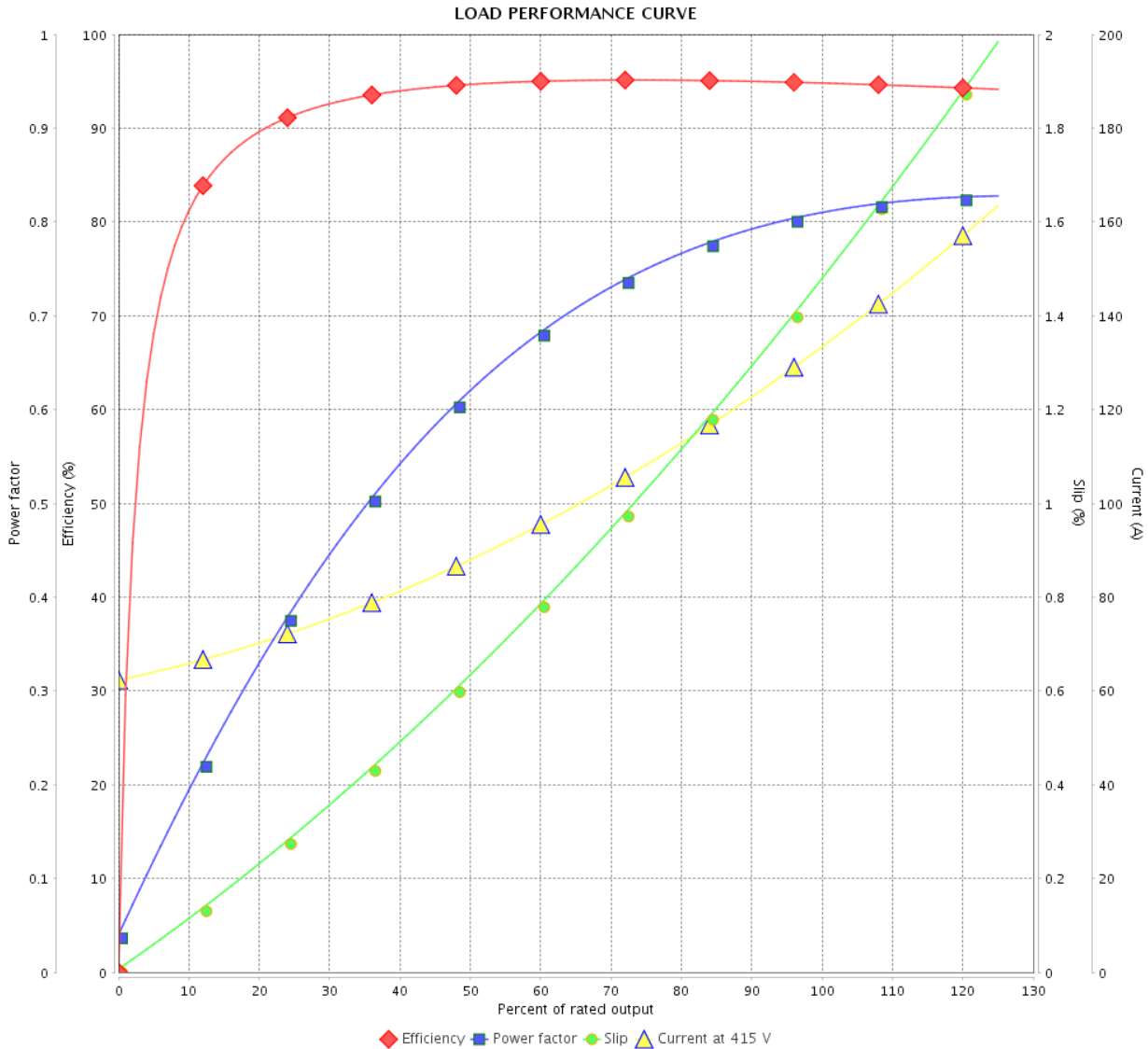


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Performance : 415 V 50 Hz 6P IE3

Rated current	: 130 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 7.6	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
Locked rotor torque	: 250 %	Service factor	: 1.00
Breakdown torque	: 290 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

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## Three Phase Induction Motor - Squirrel Cage

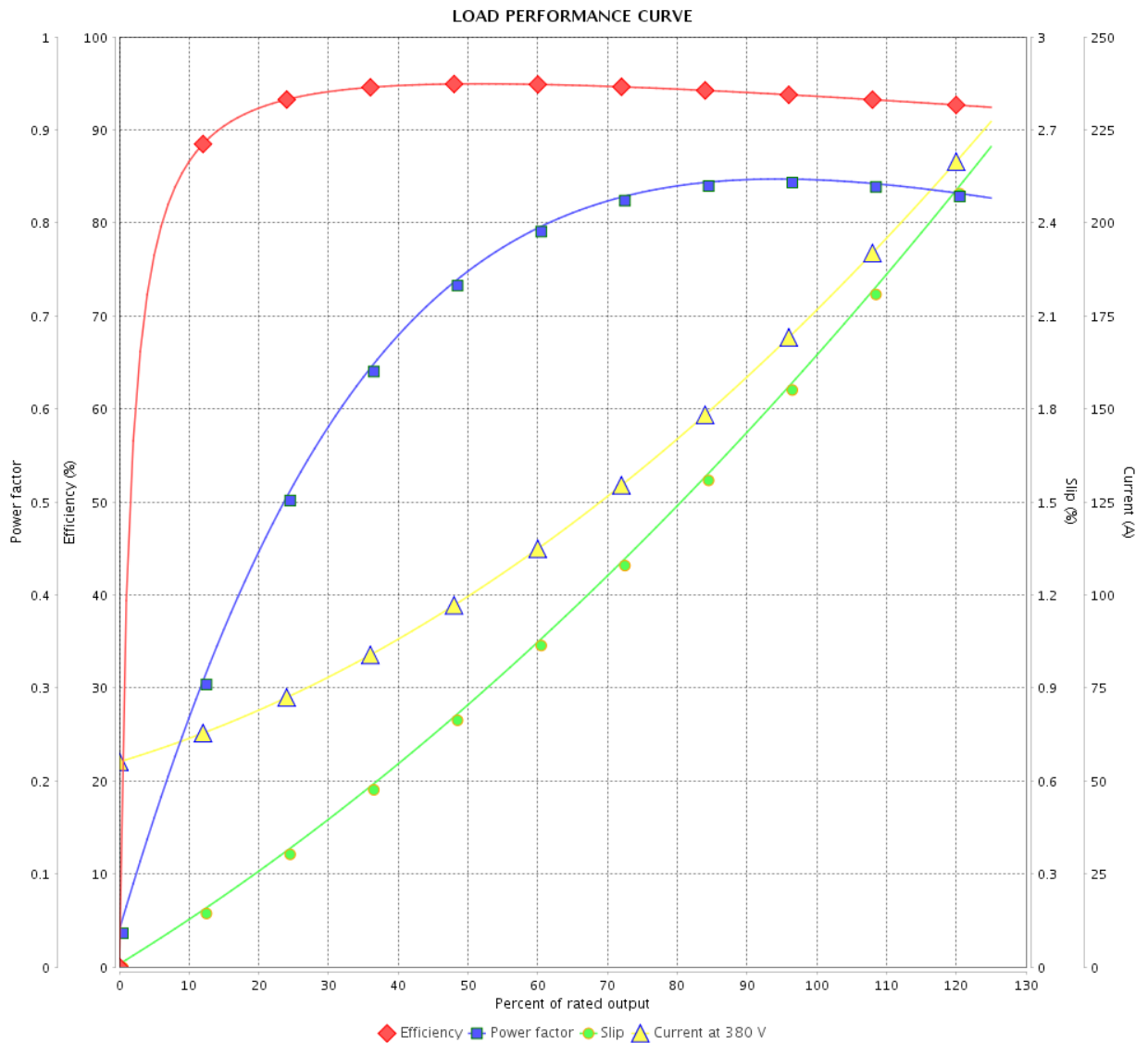


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Product code : 11165651

Catalog # : 12512ET3ERB445T-W22



Performance : 380 V 50 Hz 6P IE1

Rated current : 172 A  
 LRC : 5.1  
 Rated torque : 670 ft.lb  
 Locked rotor torque : 160 %  
 Breakdown torque : 190 %  
 Rated speed : 980 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 105 K  
 Design : B

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Three Phase Induction Motor - Squirrel Cage

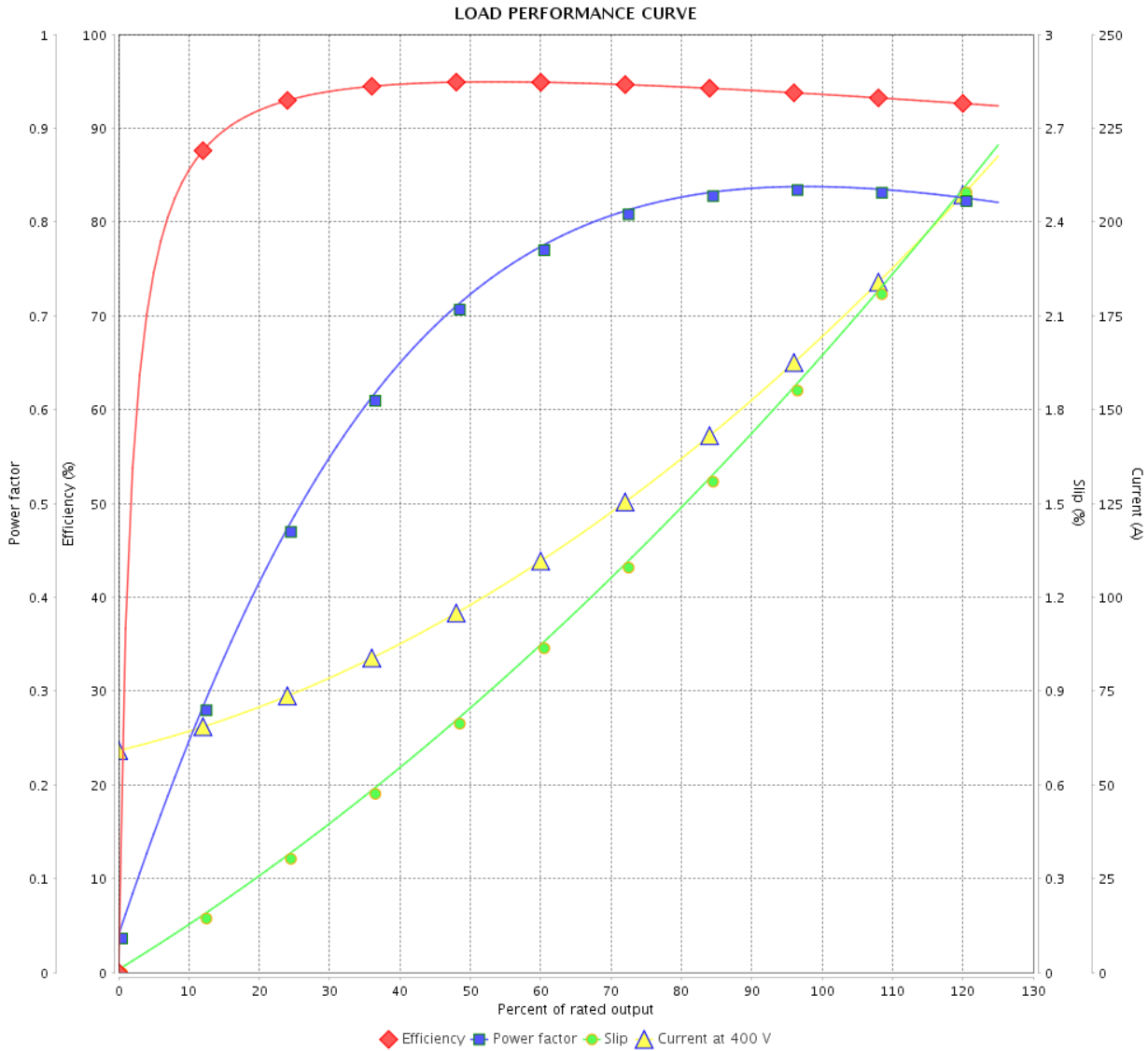


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Performance : 400 V 50 Hz 6P IE1

Rated current	: 165 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.7	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage

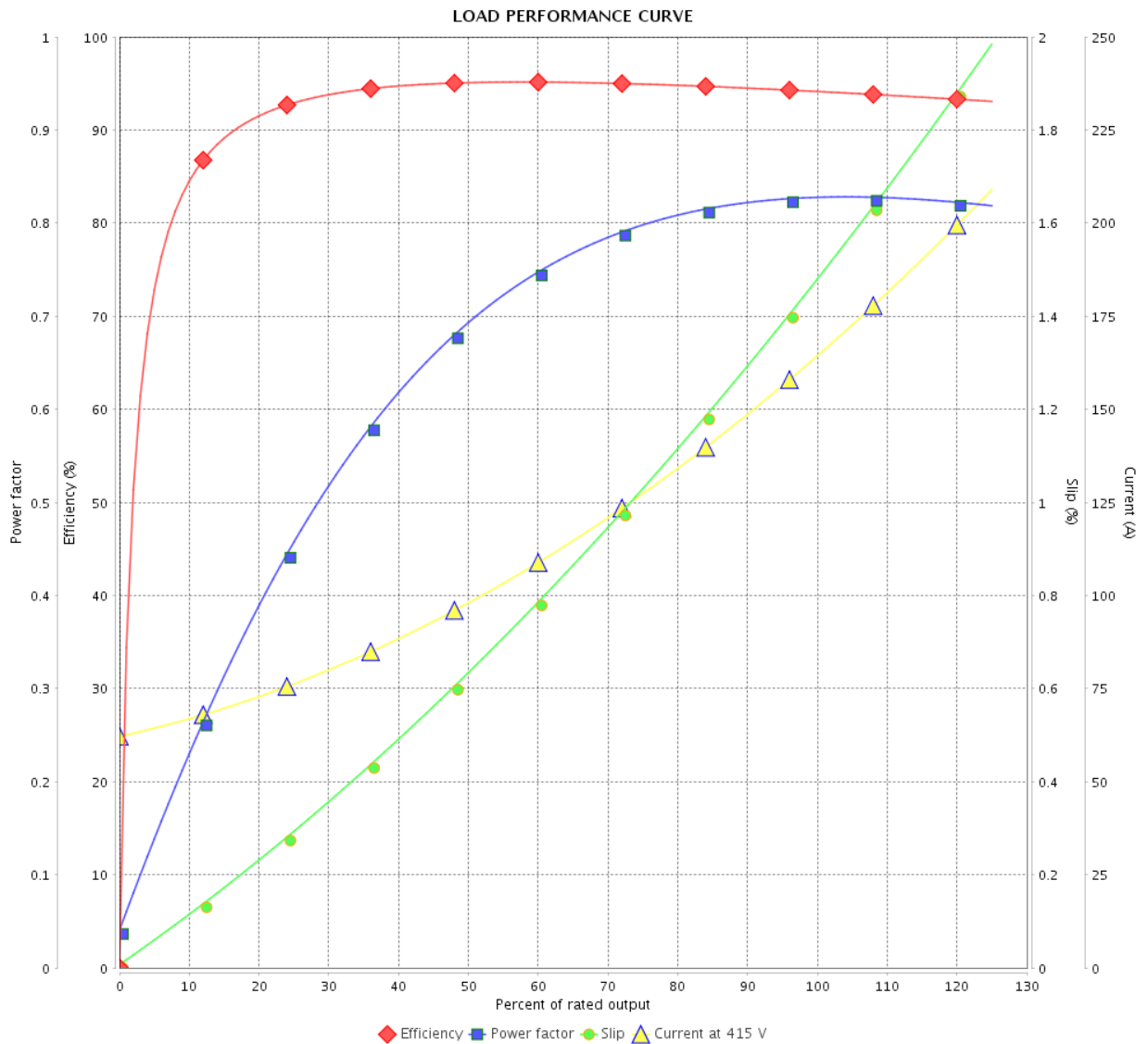


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Performance : 415 V 50 Hz 6P IE2

Rated current : 160 A  
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 Rated torque : 666 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 229 %  
 Rated speed : 985 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
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 Temperature rise : 105 K  
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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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Performance : 230/460 V 60 Hz 6P

Rated current	: 286/143 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 554 ft.lb	Insulation class	: F
Locked rotor torque	: 210 %	Service factor	: 1.15
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 1185 rpm	Design	: B

Heating constant

Cooling constant

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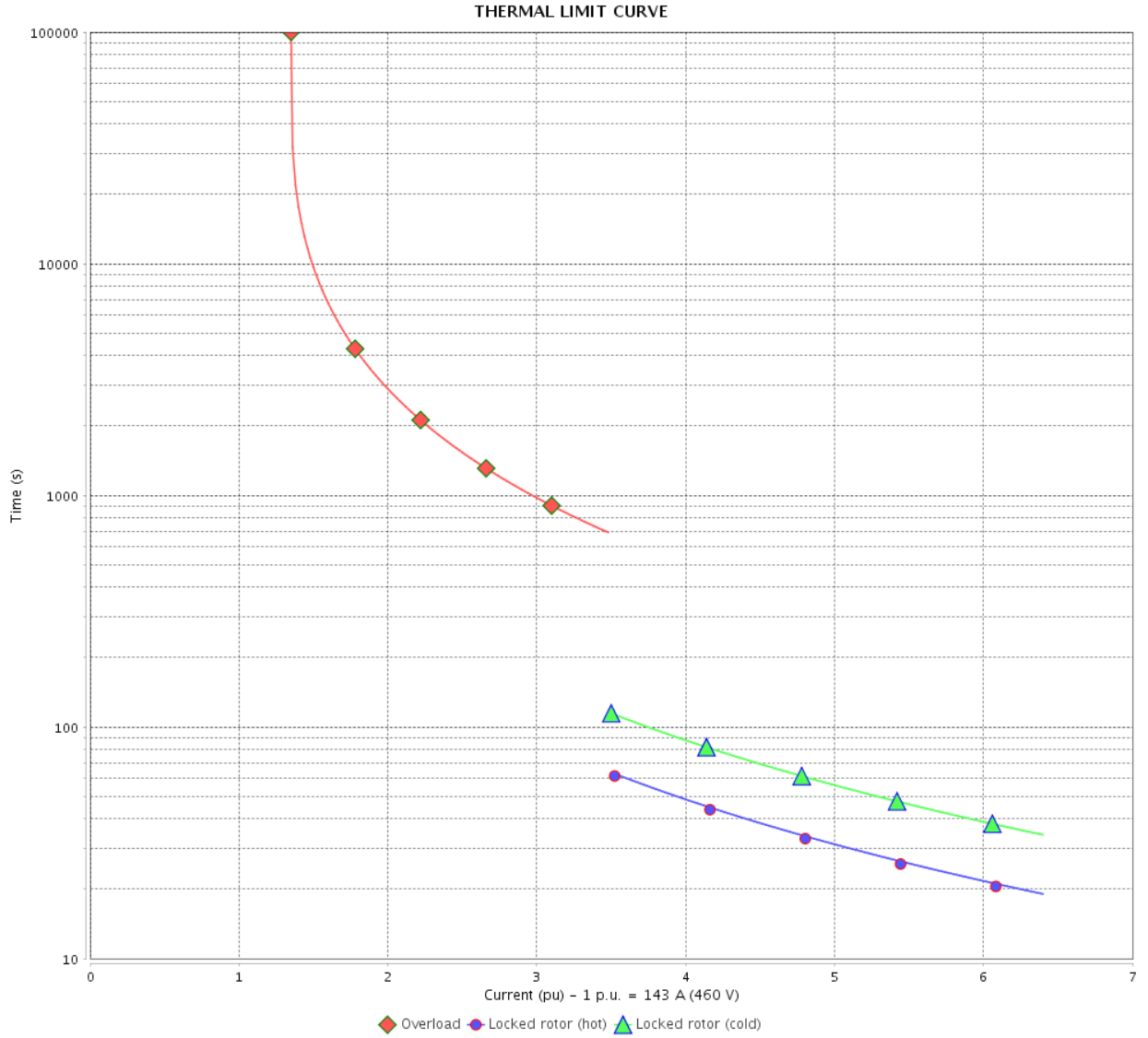


# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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## Three Phase Induction Motor - Squirrel Cage



Customer :

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Performance : 380 V 50 Hz 6P IE3

Rated current	: 143 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
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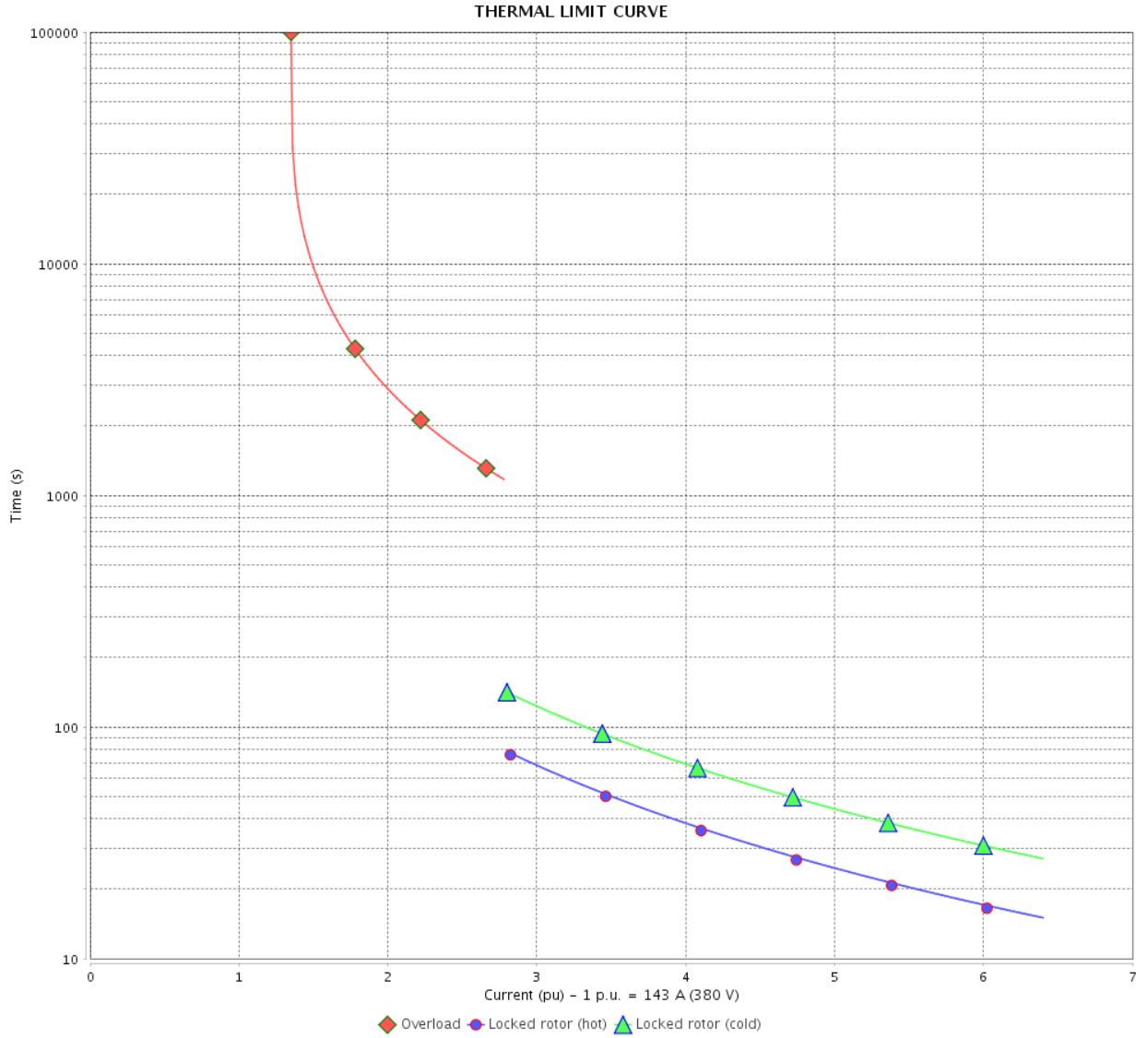
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# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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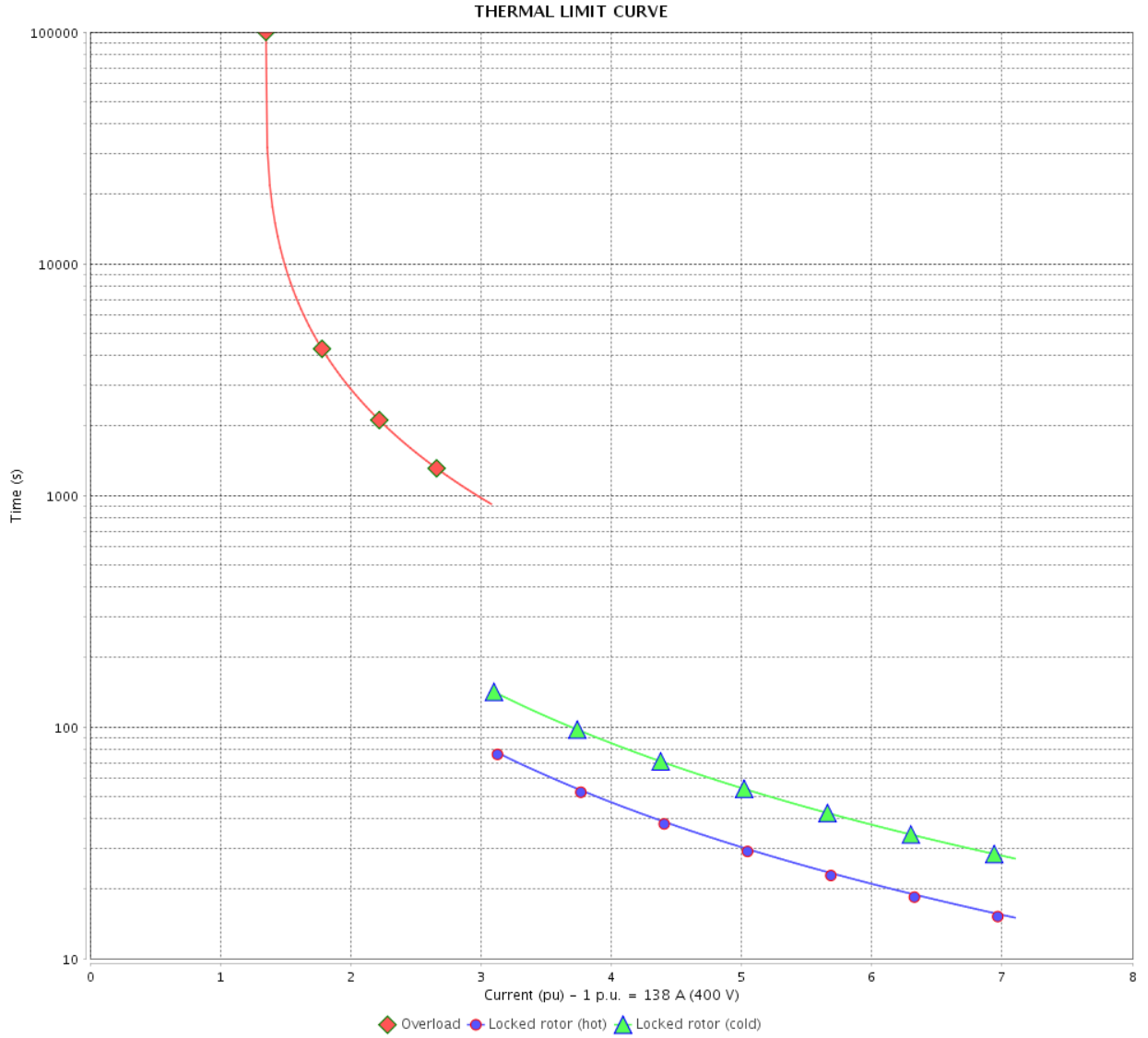
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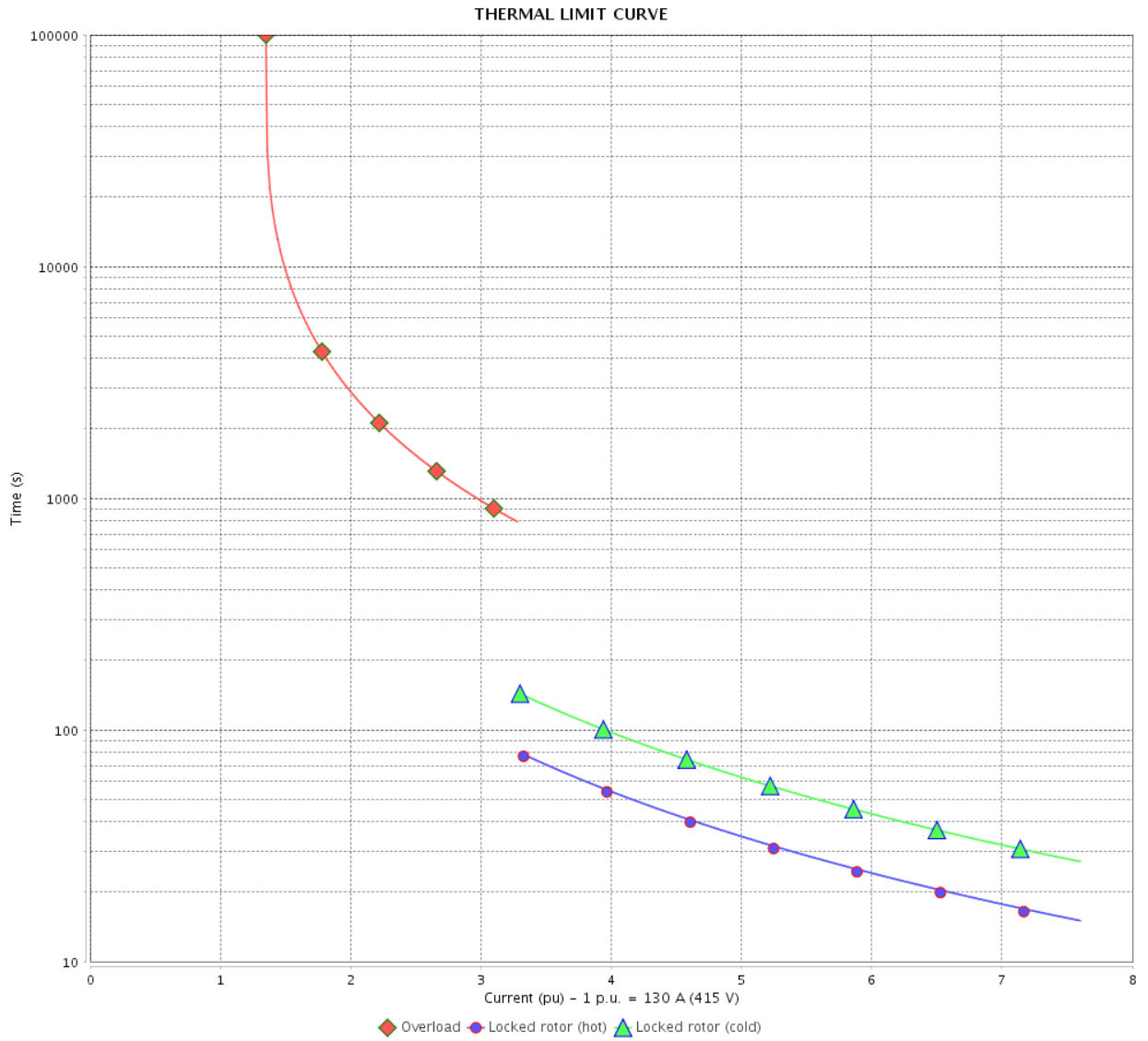
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Rated current	: 172 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.1	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

Heating constant

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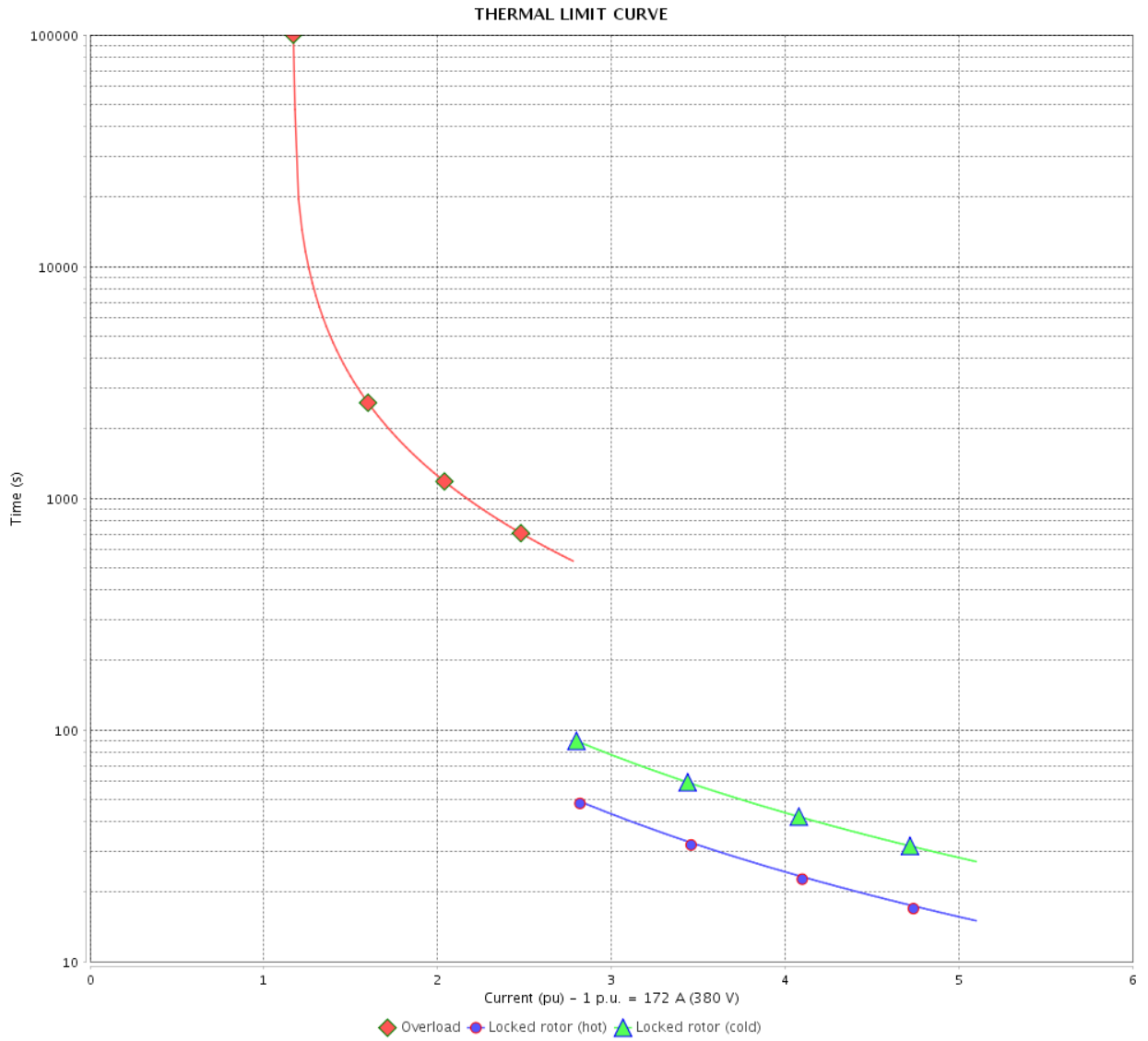


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Three Phase Induction Motor - Squirrel Cage



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Catalog # : 12512ET3ERB445T-W22

Performance : 400 V 50 Hz 6P IE1

Rated current	: 165 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.7	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

Heating constant

Cooling constant

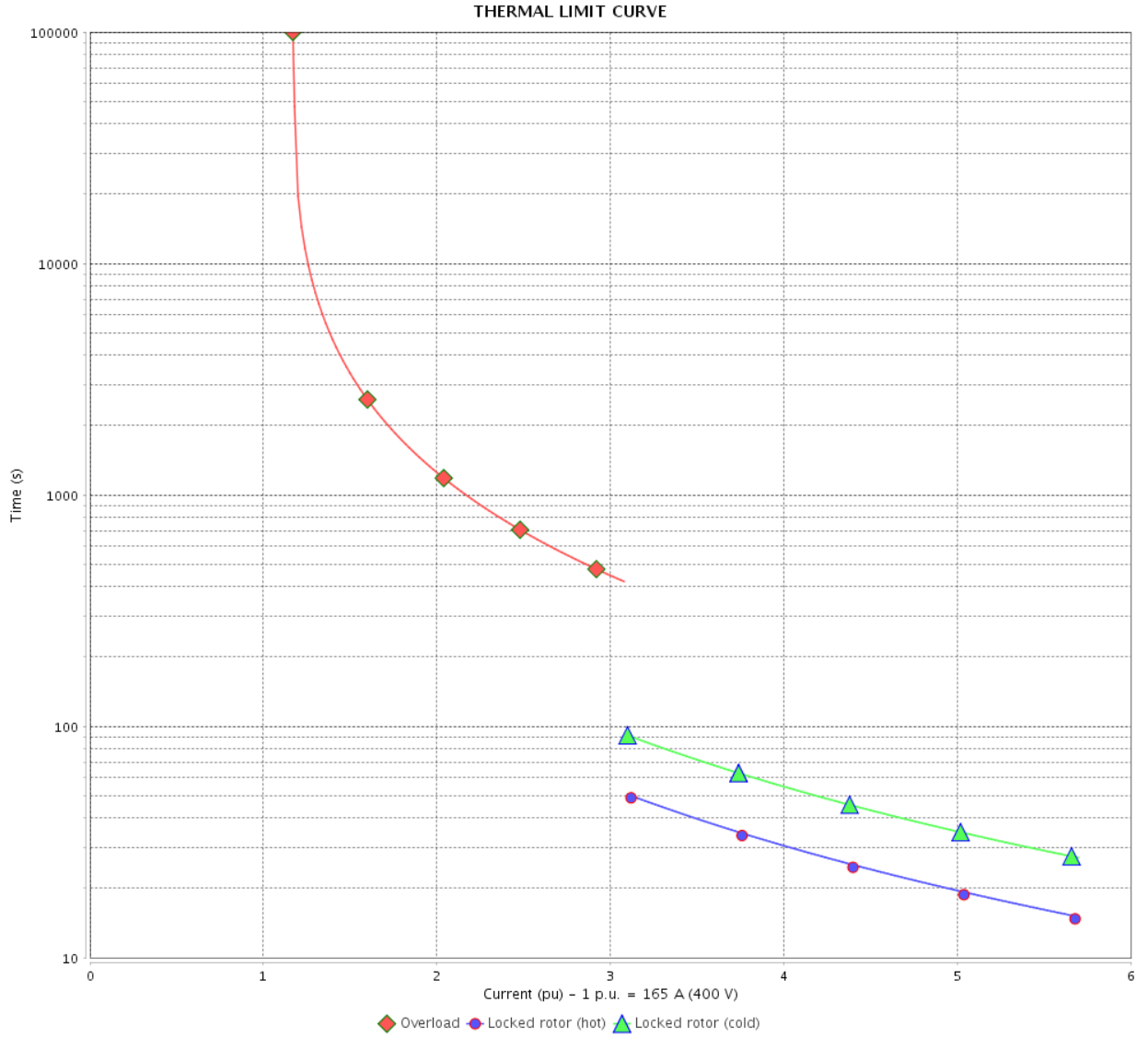
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	13/04/2022		26 / 36	

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



Rev.	Changes Summary	Performed	Checked	Date
Performed by		Page 27 / 36		Revision
Checked by				
Date				

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
Product code : 11165651  
Catalog # : 12512ET3ERB445T-W22

Performance : 415 V 50 Hz 6P IE2

Rated current	: 160 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 666 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 985 rpm	Design	: B

Heating constant

Cooling constant

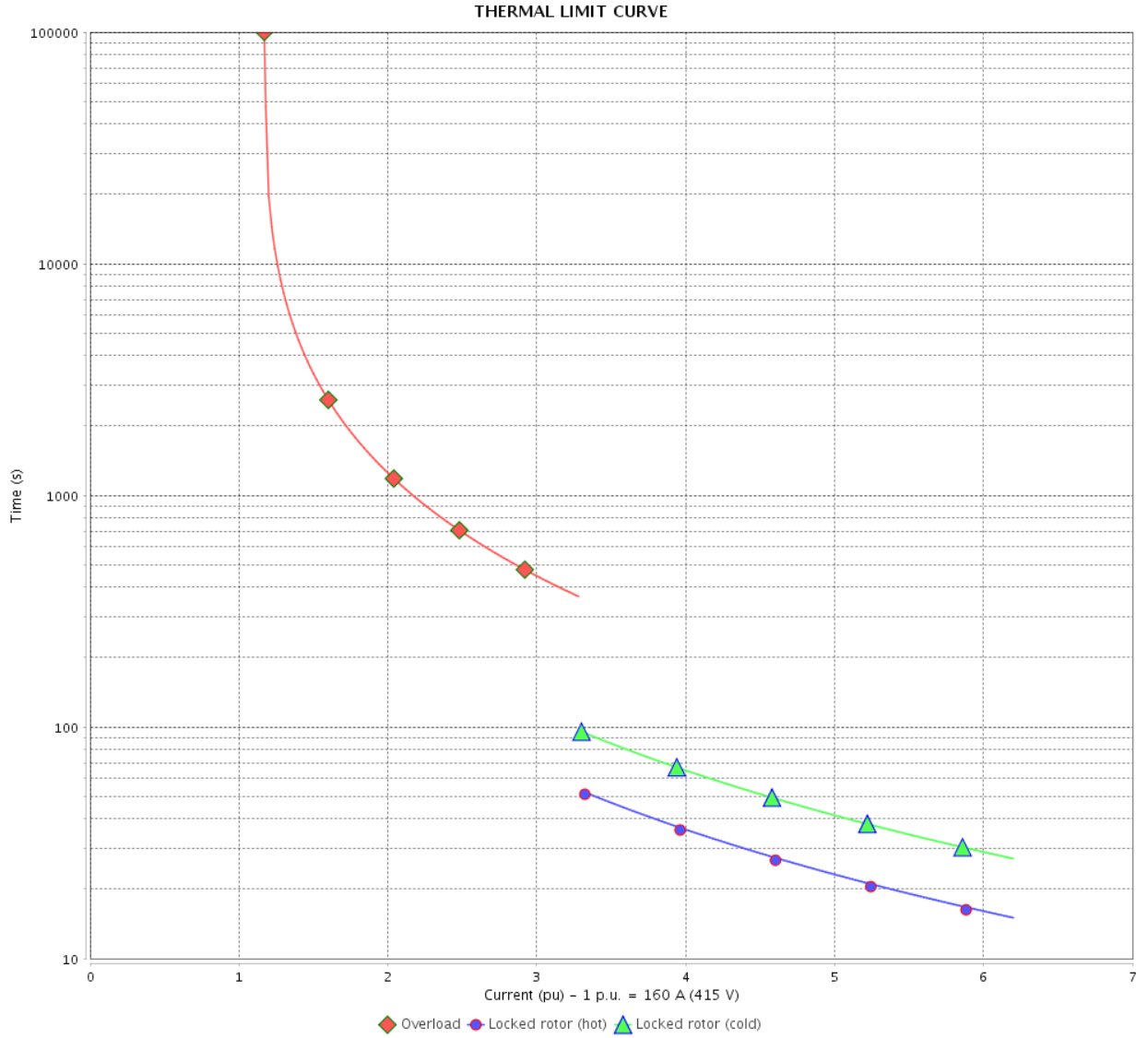
Rev.	Changes Summary	Performed	Checked	Date
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Checked by			Page	Revision
Date	13/04/2022		28 / 36	

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



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Performed by		Page		Revision
Checked by		29 / 36		
Date		13/04/2022		

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



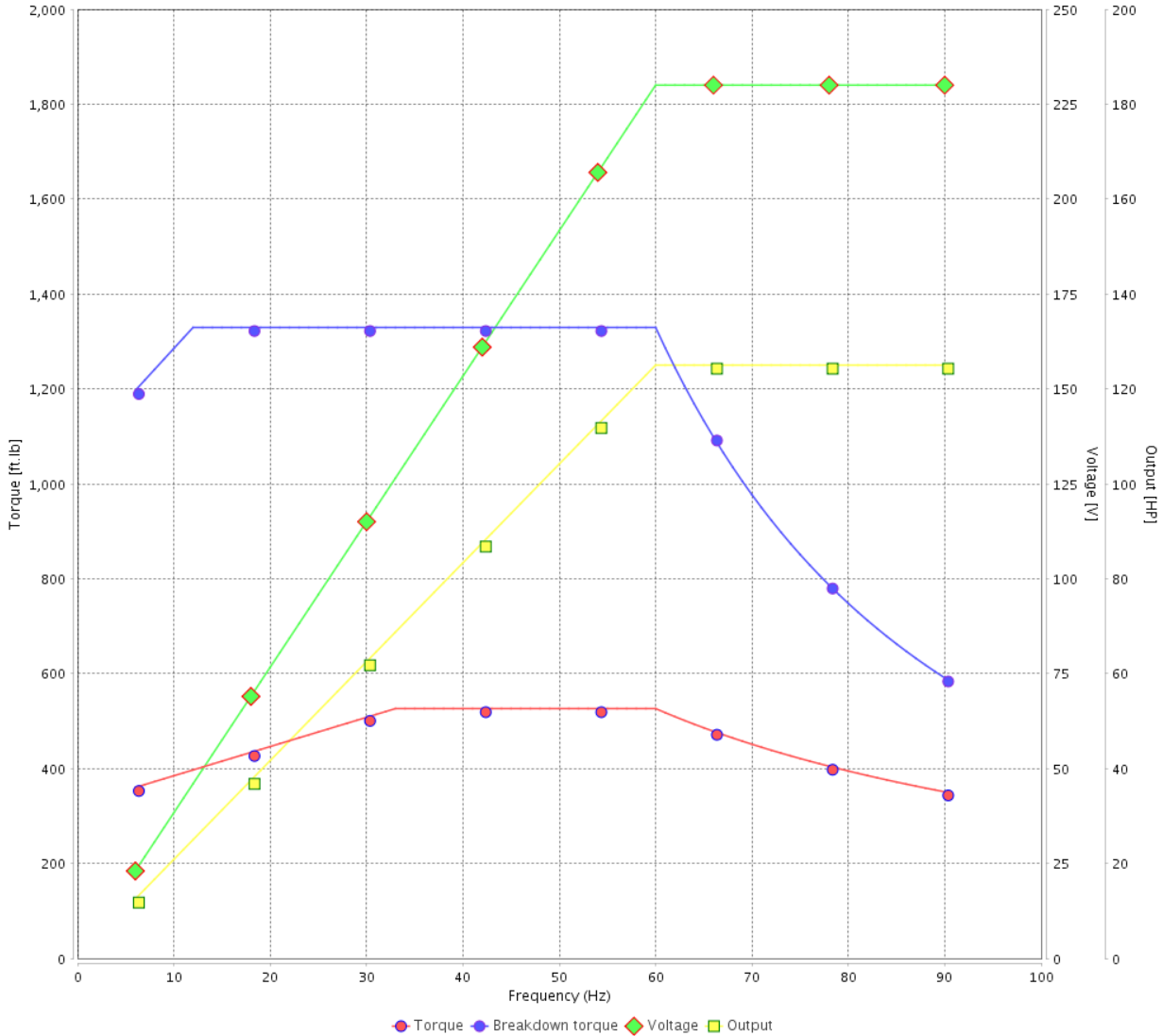
Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22

VFD OPERATION CURVE



Performance : 230/460 V 60 Hz 6P

Rated current : 286/143 A  
 LRC : 6.4  
 Rated torque : 554 ft.lb  
 Locked rotor torque : 210 %  
 Breakdown torque : 240 %  
 Rated speed : 1185 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K  
 Design : B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				

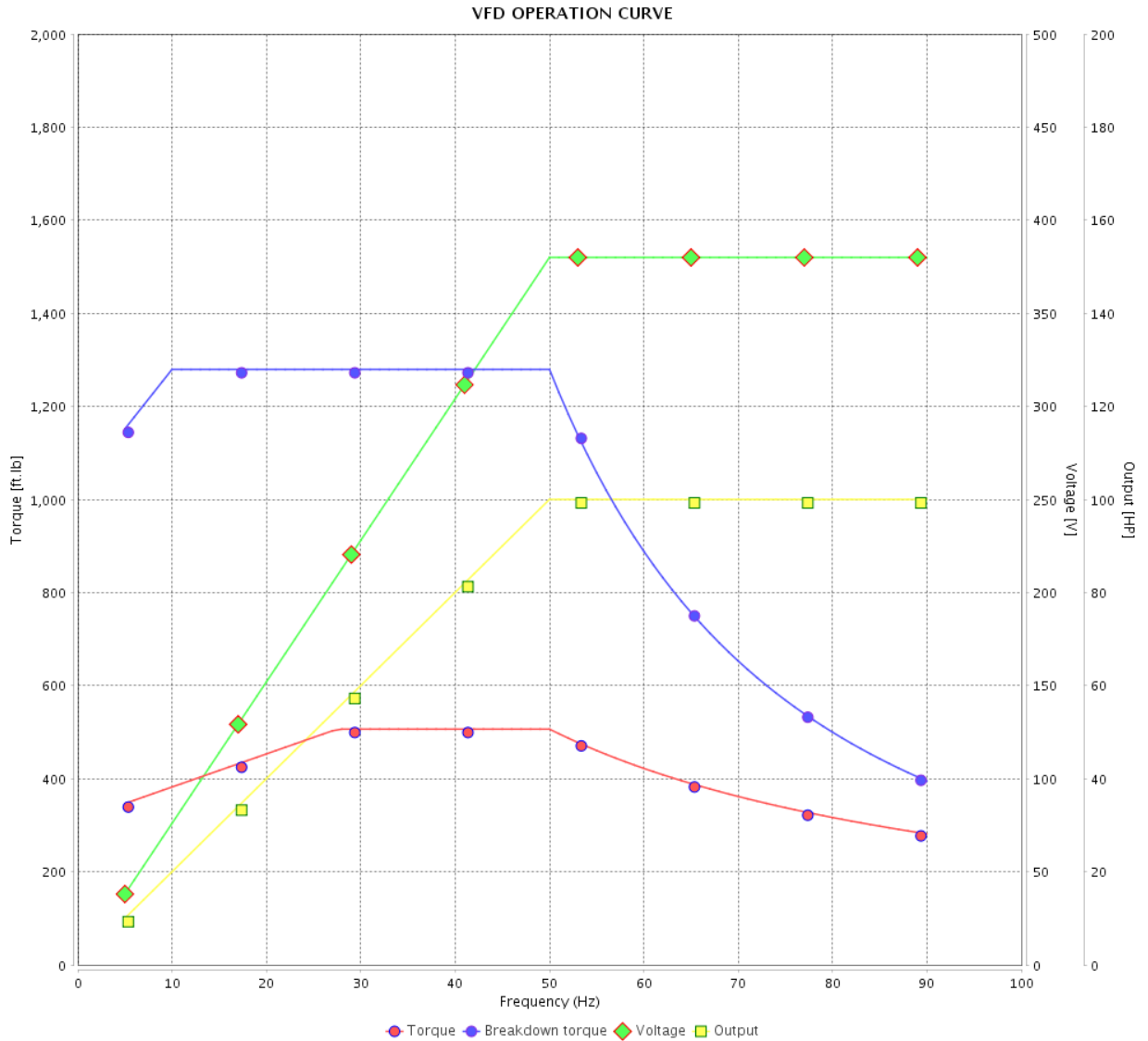
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 11165651  
 Catalog # : 12512ET3ERB445T-W22



Performance : 380 V 50 Hz 6P IE3

Rated current	: 143 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.4	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 240 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

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Performed by			Page 31 / 36	Revision
Checked by				
Date	13/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

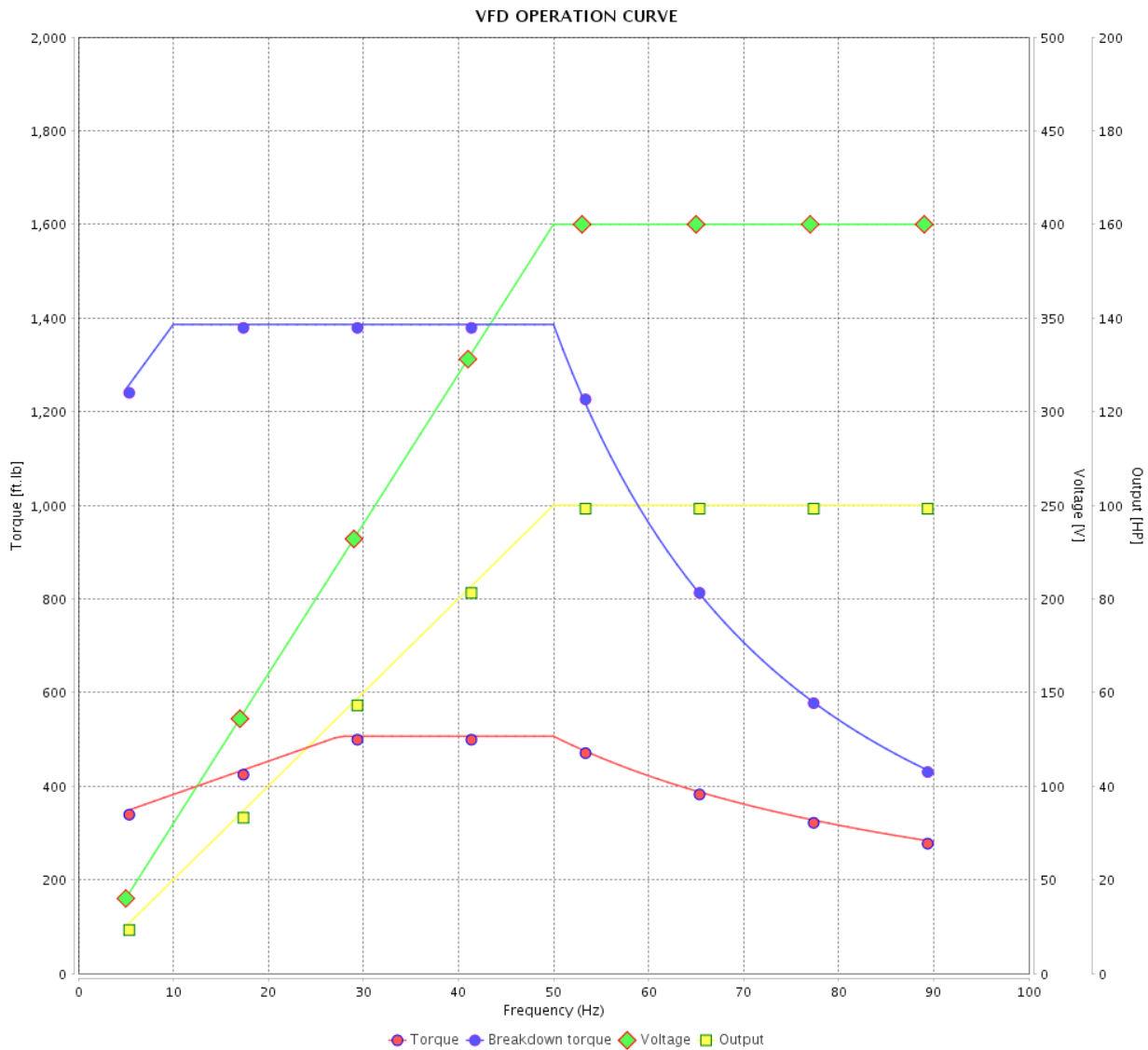


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22



Performance : 400 V 50 Hz 6P IE3

Rated current	: 138 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 7.1	Duty cycle	: Cont.(S1)
Rated torque	: 533 ft.lb	Insulation class	: F
Locked rotor torque	: 229 %	Service factor	: 1.00
Breakdown torque	: 260 %	Temperature rise	: 80 K
Rated speed	: 985 rpm	Design	: B

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Performed by			Page 32 / 36	Revision
Checked by				
Date	13/04/2022			



# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

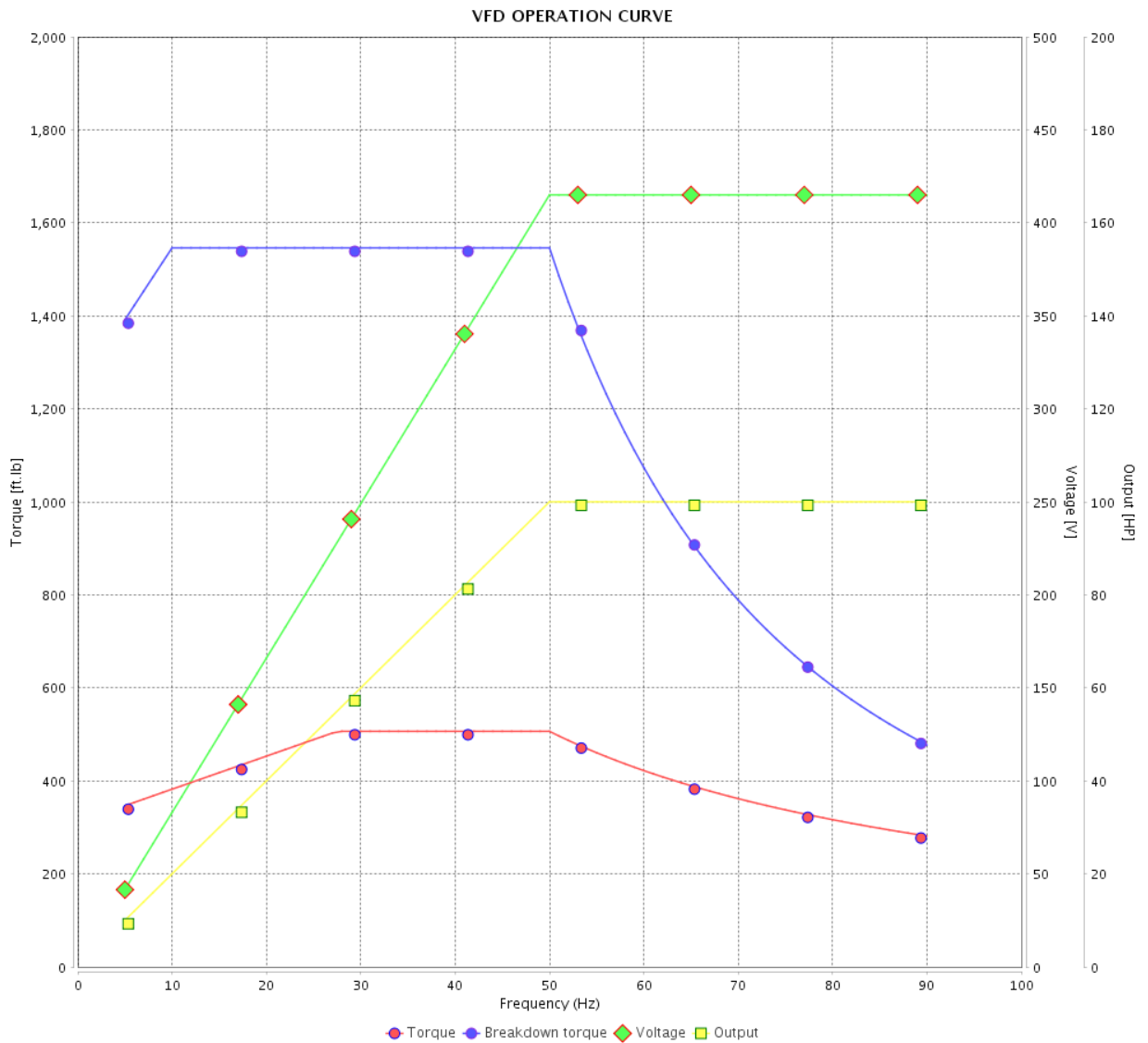


Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22



Performance : 415 V 50 Hz 6P IE3

Rated current : 130 A  
 LRC : 7.6  
 Rated torque : 533 ft.lb  
 Locked rotor torque : 250 %  
 Breakdown torque : 290 %  
 Rated speed : 985 rpm

Moment of inertia (J) : 104 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : B

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Performed by				Page 33 / 36
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Date	13/04/2022			

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



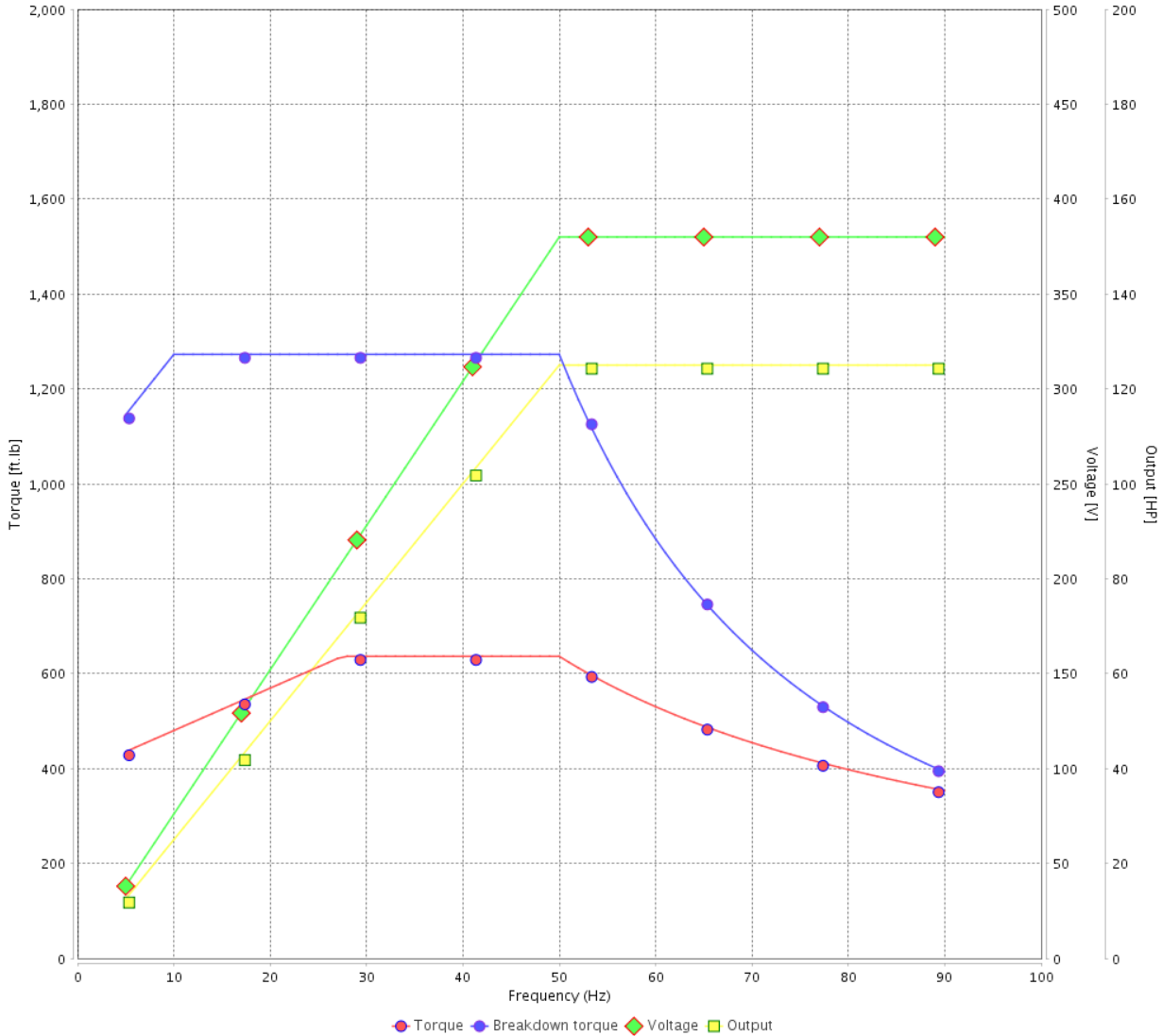
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22

VFD OPERATION CURVE



Performance : 380 V 50 Hz 6P IE1

Rated current	: 172 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.1	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 160 %	Service factor	: 1.00
Breakdown torque	: 190 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 34 / 36	Revision
Checked by				
Date	13/04/2022			

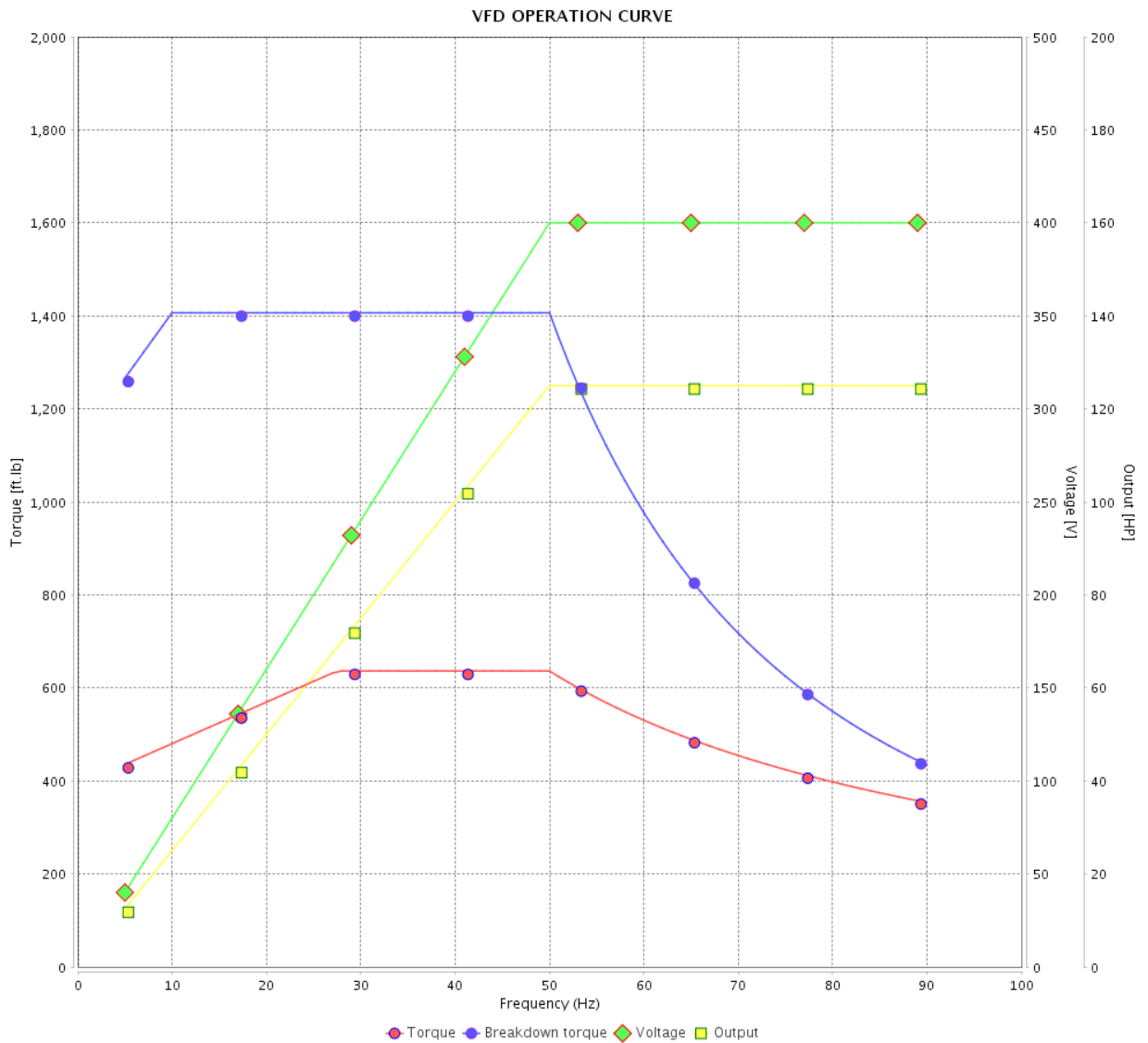
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 11165651  
 Catalog # : 12512ET3ERB445T-W22



Performance : 400 V 50 Hz 6P IE1

Rated current	: 165 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 5.7	Duty cycle	: Cont.(S1)
Rated torque	: 670 ft.lb	Insulation class	: F
Locked rotor torque	: 180 %	Service factor	: 1.00
Breakdown torque	: 210 %	Temperature rise	: 105 K
Rated speed	: 980 rpm	Design	: B

Rev.	Changes Summary	Performed	Checked	Date
Performed by				Page 35 / 36
Checked by				
Date	13/04/2022			
				Revision

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



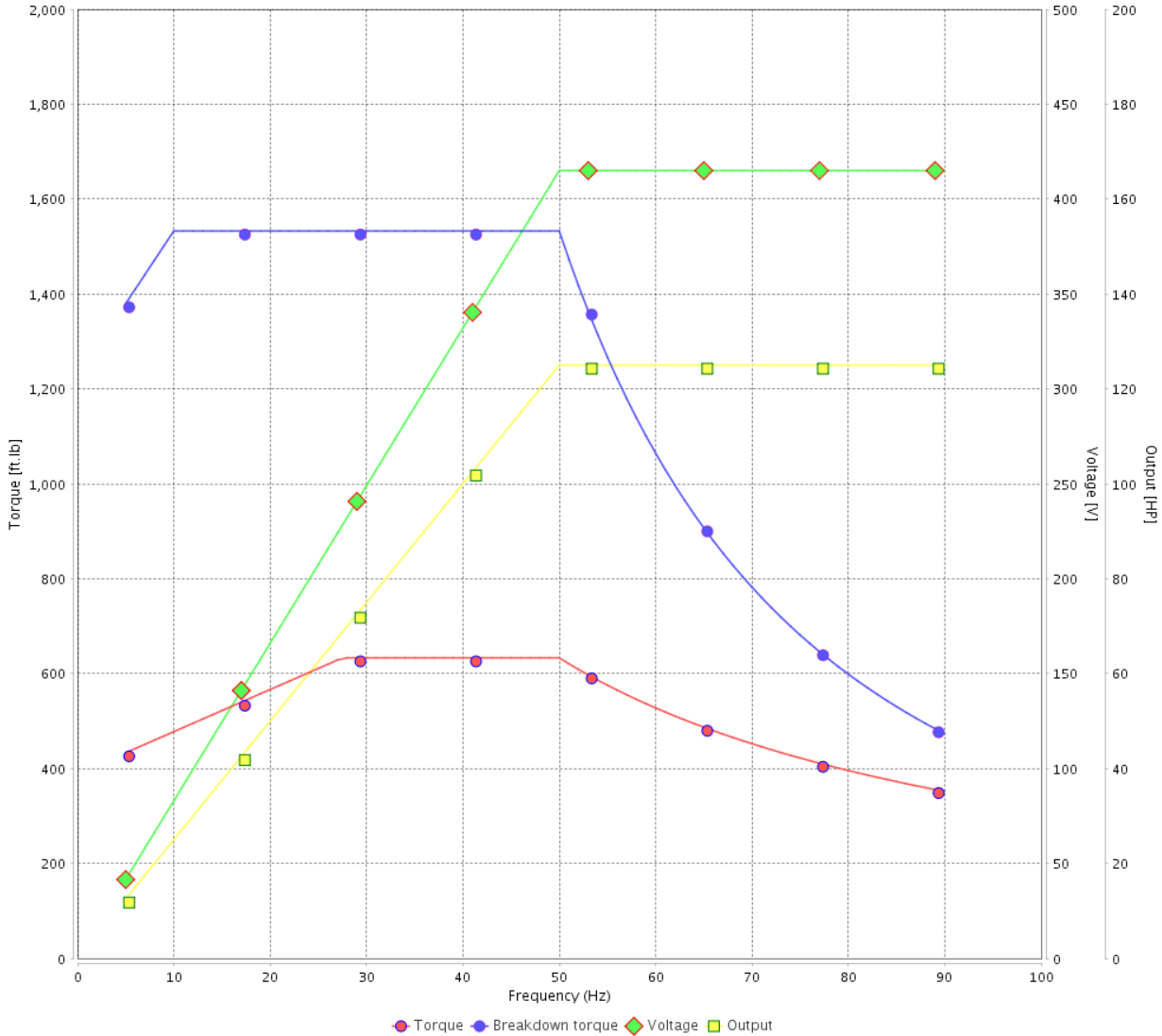
Customer : \_\_\_\_\_

Product line : NEMA Premium Efficiency Three-Phase

Product code : 11165651

Catalog # : 12512ET3ERB445T-W22

VFD OPERATION CURVE



Performance : 415 V 50 Hz 6P IE2

Rated current	: 160 A	Moment of inertia (J)	: 104 sq.ft.lb
LRC	: 6.2	Duty cycle	: Cont.(S1)
Rated torque	: 666 ft.lb	Insulation class	: F
Locked rotor torque	: 200 %	Service factor	: 1.00
Breakdown torque	: 229 %	Temperature rise	: 105 K
Rated speed	: 985 rpm	Design	: B

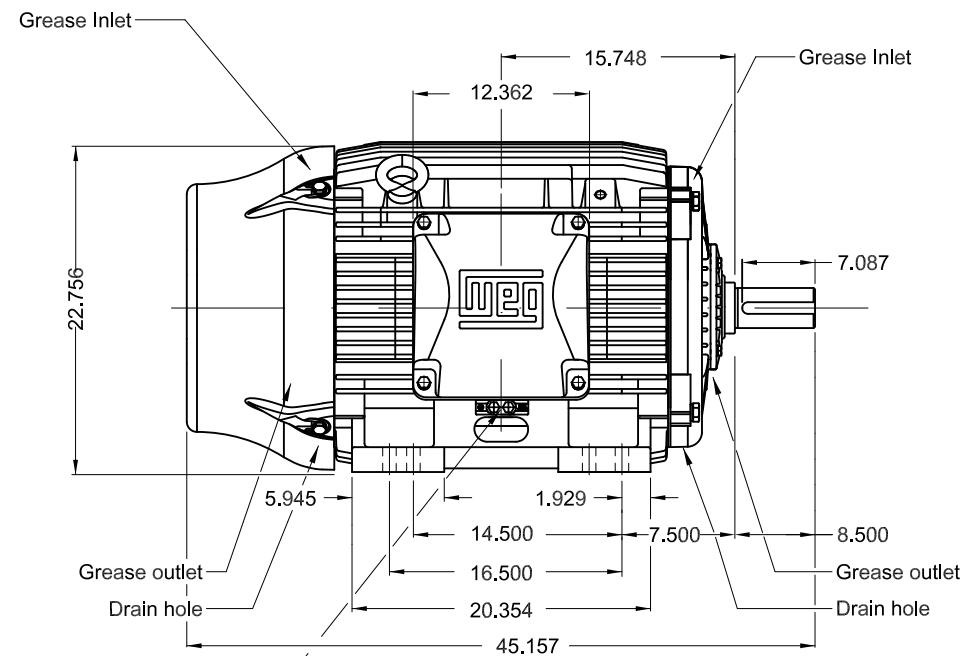
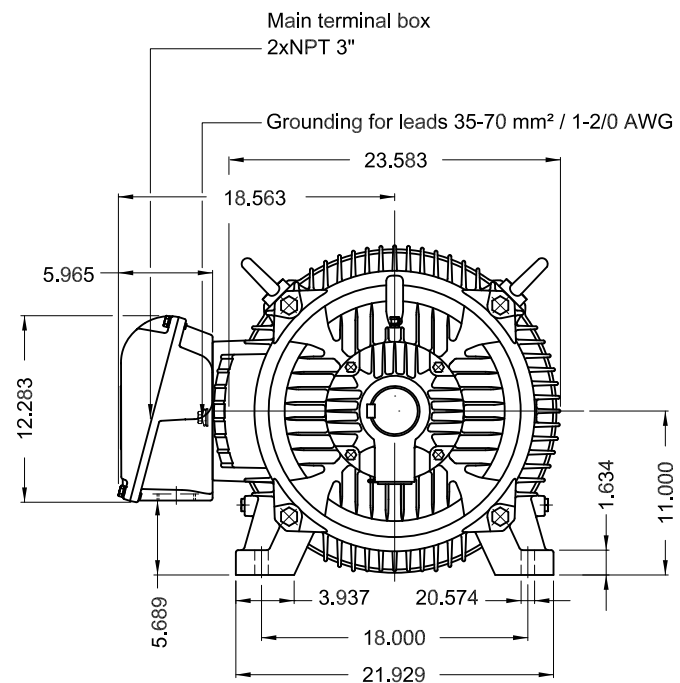
Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 36 / 36	Revision
Checked by				
Date	13/04/2022			

1 2 3 4 5 6

A

B

C

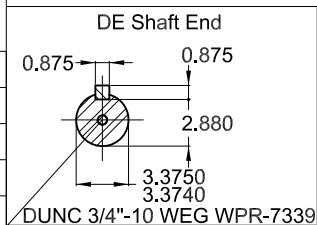


Grounding for leads 25-185 mm<sup>2</sup> / 3AWG-350MCM

D

E

- DE roller bearing
- Shaft locking device
- Color RAL 5009
- Painting plan 203A
- Mounting B3R(D)



125 HP 06 Poles 60 Hz A

ECM	LOC	SUMMARY OF MODIFICATIONS	EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWBUSER	THREE PH. MOTOR W22 PREM. EFF. FRAME 444/5T IP55 TEFC					
CHECKED							
RELEASED							
REL DT.	WMO	Jaragua do Sul	Product Engineering	SHEET 1 / 1			

**PREVIEW**  
WDD





FOR SAFE AREA  
Mod.TE1BFOXON  
CC029A



For use on 60Hz  
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 - T3C  
For use on PWM: Gr. A, B, C, D and F,  
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 12512ET3ERB445T-W22

Inverter Duty Motor  
Severe Duty

PH3 60Hz Fr. 444/5T 1000m.a.s.l. IP55 TEFC 1816lb

V 230/460 A 286/143

HP 125 kW 90

SF 1.15 SFA 329/164

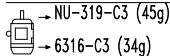
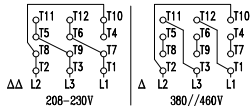
RPM 1185 PF 0.83

AMB 40°C INS cl. F DT80K NEMA NOM EFF 95.0%

DUTY CONT. DES B Code G

USABLE @208V 316A SF 1.00

125HP 90kW 50Hz 380V 172A 980RPM SF 1.00 EFF 93.6% (IE1)



MOBIL POLYREX EM (9000h)



MADE IN MEXICO  
11165651