

ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
YE2-280M-4 FRAME	IEC TYPE	110 kW	1485 r/min
4 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	182.0 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	Δ CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.05785
NO LOAD CURRENT	AMP	56.33
NO LOAD INPUT	W	2959.0
CORE LOSS(Pfe)	W	1421.2
WINDAGE FRICTION LOSS(Pfw)	W	1361.7
STATOR WINDING LOSS(Pcu1)	W	1926.8
ROTOR WINDING LOSS(Pcu2)	W	1165.1
STRAY LOAD LOSS(Ps)	W	841.4
FULL LOAD CURRENT	AMP	182.00
LOCKED ROTOR CURRENT	AMP	1139.39
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.26
FULL LOAD TORQUE	N.m	707.53
LOCKED ROTOR TORQUE	N.m	1529.42
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.16
PULL OUT TORQUE	N.m	1921.05
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.71
INPUT @ FULL LOAD	kW	116.72
EFFICIENCY @ FULL LOAD	%	94.24
POWER FACTOR @ FULL LOAD		0.892
FULL LOAD SLIP	%	1.028
FULL LOAD SPEED	r/min	1484.6
STATOR WINDING TEMPERATURE RISE	K	70
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	59.1
AMBIENT TEMPERATURE OF TESTING	Deg. C	19.0
NOISE	dB(A)	87
VIBRATION	mm/s	0.8

ROYCE CROSS GROUP YE2-280M-4 110 kW 415 VOLTS 50 Hz	SERIAL NO.		
	DATE		REV
	DRAWN		DOCUMENT NO.
	APPRVD		
	CHECKED		

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

ROYCE CROSS GROUP

Type	YE2-280M-4	Poles	4	Power	110.0 kW
Voltage	415 V	Current	182 A	Frequency	50 Hz
Speed	1485 r/min	Duty	S1	Connection	△
Ins. class	F	Weight	0 kg		IP55

NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	℃
487.2	1	50	4.312	4.262	4.327	20	-804.5	1011.2	20	81.9
449.3	1	50	3.353	3.307	3.356	20	-565.5	735.7	20	81.7
415.6	1	50	2.836	2.799	2.836	20	-435.5	583.7	20	81.5
370.4	1	50	2.365	2.333	2.362	20	-312.5	444.1	20	81.4
319.5	1	50	1.969	1.944	1.965	20	-213.9	328.4	20	81.3
253.2	1	50	3.087	3.043	3.104	10	-230.5	432.5	10	81.1
207.3	1	50	2.541	2.509	2.562	10	-130.9	309.8	10	80.9
170.7	1	50	2.111	2.082	2.129	10	-67.9	226.7	10	80.7
129.8	1	50	1.747	1.723	1.766	10	-9.1	162.7	10	80.7
99.7	1	50	1.569	1.547	1.585	10	21.8	125.1	10	80.5

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Speed	1485 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
238.8	1.0	2.987	2.987	3.022	200	-149.6	591.8	200	423.80
206.8	1.0	2.546	2.549	2.576	200	-113.7	434.8	200	305.12
185.2	1.0	2.258	2.259	2.281	200	-92.0	344.6	200	238.25
163.2	1.0	1.956	1.959	1.979	200	-70.8	261.7	200	178.47
138.3	1.0	3.275	3.283	3.313	100	-103.3	369.5	100	124.00
111.2	1.0	2.600	2.605	2.633	100	-66.5	235.5	100	78.38
88.7	1.0	2.063	2.067	2.086	100	-42.4	148.7	100	49.60

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ROYCE CROSS GROUP

Type	YE2-280M-4		Poles	4		Power	110 kW	
Voltage	415 V		Current	182 A		Frequency	50 Hz	
Speed	1485 r/min		Duty	S1		Connection	Δ	
Ins. class	F		Weight	0 kg			IP55	

TEMPERATURE RISE TEST

TIME (h:min)	V	I1	I2	I3	mul.	W1	W2	mul.	T1 °C	T2 °C	T3 °C	T4 °C	T5 °C	T6 °C	T7 °C	T8 °C	T9 °C	T10 °C	T11 °C	T12 °C	T13 °C	
11:30	415.0	3.666	3.659	3.708	50	839.0	1515.5	50	57.1	—	88.4	—	—	—	—	—	—	—	—	—	—	18.4
12:00	415.0	3.627	3.620	3.666	50	829.6	1499.8	50	57.2	—	89.2	—	—	—	—	—	—	—	—	—	—	18.7
12:30	415.1	3.605	3.598	3.644	50	825.7	1491.2	50	57.7	—	91.2	—	—	—	—	—	—	—	—	—	—	19.0
13:00	415.0	3.659	3.651	3.697	50	840.4	1512.3	50	58.1	—	91.9	—	—	—	—	—	—	—	—	—	—	19.2
13:30	415.2	3.622	3.613	3.659	50	831.4	1497.0	50	58.8	—	93.0	—	—	—	—	—	—	—	—	—	—	19.2
14:00	415.1	3.640	3.633	3.680	50	836.0	1505.5	50	59.0	—	93.7	—	—	—	—	—	—	—	—	—	—	19.1
14:30	415.2	3.618	3.609	3.657	50	830.2	1495.2	50	59.0	—	93.9	—	—	—	—	—	—	—	—	—	—	19.0
15:00	415.2	3.611	3.604	3.651	50	830.2	1493.0	50	59.1	—	94.2	—	—	—	—	—	—	—	—	—	—	19.0
最后三点平均值		181.686		A		116503.3		W	59.1	—	93.9	—	—	—	—	—	—	—	—	—	—	19.0

T1 T2: DE BEARING TEMPERATURE
T3-T10: DE WINDING TEMPERATURE

T11: CORE TEMPERATRE
T13: AMBIENT TEMPERATURE

T12: FRAME TEMPERATRE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	50	88	122	153	189	228	261
RESISTANCE	0.03793	0.03782	0.03773	0.03764	0.03755	0.03746	0.03739

WINDING RESISTANCE (COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.02949	0.02948	0.02946	0.02948	0.02946	17.2 °C

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Manu. Date

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**ELECTRIC MOTOR TEST REPORT -
THREE PHASE INDUCTION MOTOR**

ROYCE CROSS GROUP

Type	YE2-280M-4	Poles	4	Power	110.0	kW
Voltage	415 V	Current	182 A	Frequency	50.0	Hz
Speed	1485 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

LOAD TEST

V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Temperature °C	Torqure N.m
415.0	50.00	2.588	2.589	2.624	100	591.7	1072.5	100	1478.9	93.8	1005.3
415.1	50.00	2.276	2.275	2.306	100	525.2	942.3	100	1481.3	94.3	888.2
415.1	49.99	1.807	1.806	1.829	100	415.4	748.0	100	1484.6	94.5	704.3
415.0	49.99	2.751	2.749	2.785	50	595.2	1139.4	50	1487.9	94.2	523.1
415.0	50.01	1.994	1.993	2.018	50	352.0	815.2	50	1491.5	93.6	348.0
415.2	49.99	1.313	1.310	1.327	50	100.8	508.0	50	1493.6	92.1	173.8

Final Resistance of load: 0.00000 Ω ambient temperature 0.0 °C

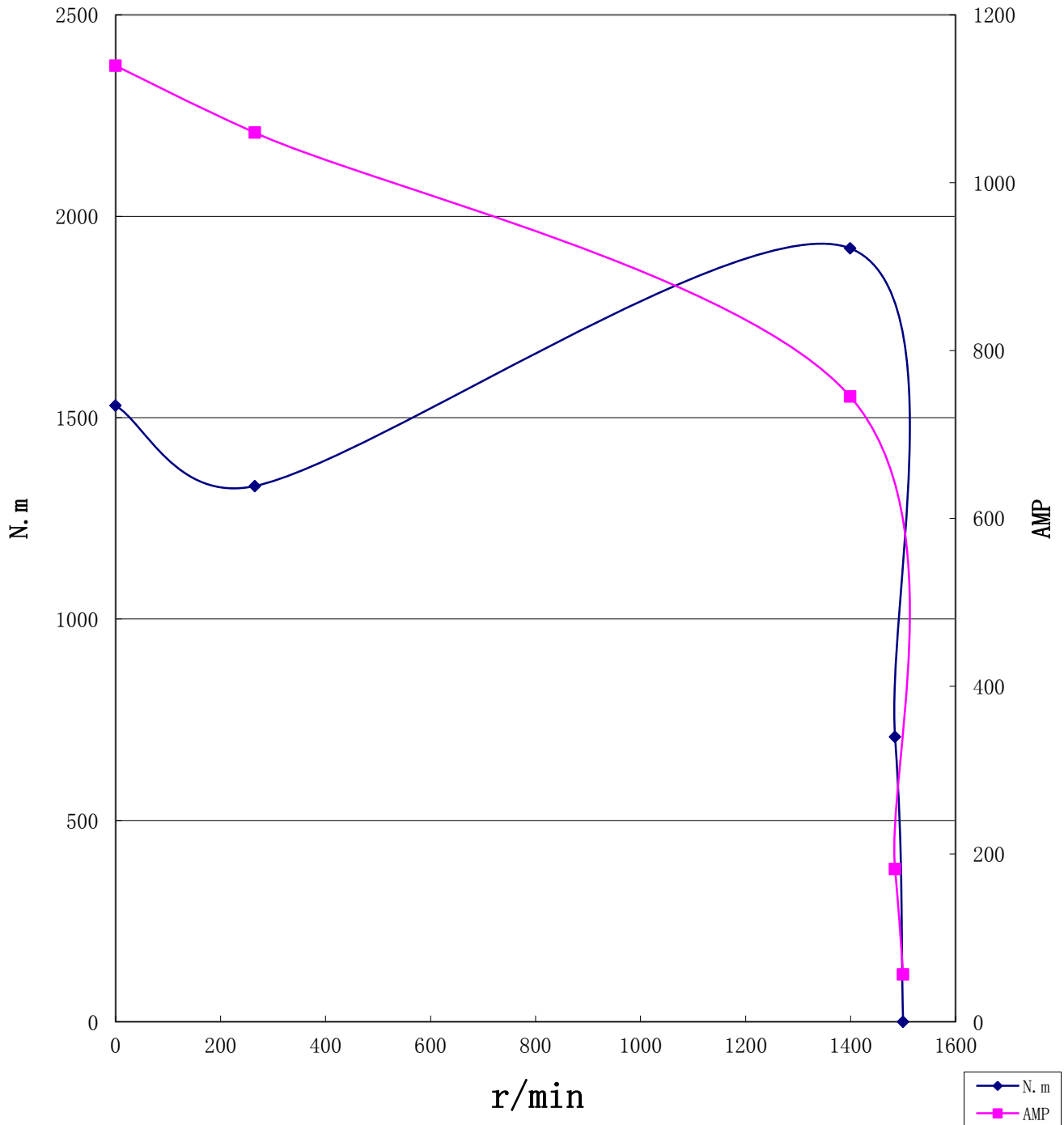
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pfe W	EFF %	P.F
150.0	165000	276.4	176650.1	4444.2	1.521	2597.2	1912.2	1346.7	93.40	0.889
125.0	137500	228.1	146433.4	3026.7	1.267	1798.9	1321.1	1360.1	93.90	0.893
100.0	110000	182.0	116718.4	1926.8	1.028	1165.1	841.4	1372.5	94.24	0.892
75.0	82500	139.3	87575.1	1129.0	0.808	686.9	471.2	1384.2	94.20	0.875
50.0	55000	100.8	58929.4	591.5	0.603	343.0	208.6	1396.5	93.33	0.813
25.0	27500	66.2	30712.9	254.7	0.419	121.6	51.9	1409.9	89.54	0.646

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Type	YE2-280M-4	Poles	4	output Power	110.0	kW		
Voltage	415	V	Current	182	A	Frequency	50.0	Hz
Speed	1485	r/min	Duty	S1	Connection	Δ		
Ins. class	F	Weight	0	kg	IP55			

TORQUE VS SPEED



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Speed	1485 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

LOAD CURVE

