

# ROYCE CROSS GROUP

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
YE2-355M1-2 <b>FRAME</b>	IEC TYPE	220 kW	2980 r/min
2 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 Hz
ROYCE CROSS GROUP <b>MANUFACTURER</b>	354.0 <b>AMPS</b>	IP55 <b>IP</b>	
	S1 <b>DUTY</b>	F <b>INS.CLASS</b>	Δ <b>CONNECTION</b>

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.01316
NO LOAD CURRENT	AMP	67.757
NO LOAD INPUT	W	5521.6
CORE LOSS(Pfe)	W	2044.2
WINDAGE FRICTION LOSS(Pfw)	W	3420.6
STATOR WINDING LOSS(Pcu1)	W	1644.4
ROTOR WINDING LOSS(Pcu2)	W	1628.5
STRAY LOAD LOSS(Ps)	W	2767.6
FULL LOAD CURRENT	AMP	353.89
LOCKED ROTOR CURRENT	AMP	2684.64
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	7.58
FULL LOAD TORQUE	N.m	705.30
LOCKED ROTOR TORQUE	N.m	1215.92
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	1.72
PULL OUT TORQUE	N.m	2239.65
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3.17
INPUT @ FULL LOAD	kW	231.51
EFFICIENCY @ FULL LOAD	%	95.03
POWER FACTOR @ FULL LOAD		0.910
FULL LOAD SLIP	%	0.715
FULL LOAD SPEED	r/min	2978.6
STATOR WINDING TEMPERATURE RISE	K	61.6
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	51.4
AMBIENT TEMPERATURE OF TESTING	Deg. C	14.2
NOISE	dB(A)	97
VIBRATION	mm/s	1.7

The data above is calculated as per IEC 34-2, all data at nominal Volts.

<b>ROYCE CROSS GROUP</b>  YE2-355M1-2 220 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	YE2-355M1-2	Poles	2	Power	220.0 kW
Voltage	415 V	Current	354 A	Frequency	50 Hz
Speed	2980 r/min	Duty	S1	Connection	△
Ins. class	F	Weight	0 kg		IP55

### NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	W3	℃
528.9	1	50	3.278	3.473	3.416	50	69.5	71.8	28.5	73.4
482.8	1	50	2.197	2.139	2.231	50	37.6	50.1	49.0	73.4
415.4	1	50	3.364	3.393	3.422	20	96.8	94.0	85.4	73.0
361.5	1	50	2.703	2.732	2.732	20	79.7	85.4	85.4	72.7
306.0	1	50	2.271	2.300	2.329	20	80.9	81.5	71.2	72.4
250.5	1	50	1.869	1.926	1.898	20	74.0	76.9	71.2	71.6
207.4	1	50	3.220	3.335	3.278	10	142.4	142.4	131	71.3
151.3	1	50	2.760	2.818	2.703	10	131.0	136.7	120	70.7
105.1	1	50	2.473	2.588	2.415	10	119.6	119.6	120	70.5

<b>ROYCE CROSS GROUP</b>	Manufacturing Date	Serial No
	Test Date	Report Number

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	YE2-355M1-2	Poles	2	Power	220.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	354 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2980 <b>r/min</b>	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torque N. m
238.6	1.0	3.494	3.511	3.524	400.0	-136.1	458.5	400	332.51
222.9	1.0	3.253	3.273	3.279	400.0	-119.3	398.4	400	287.92
207.6	1.0	2.988	3.006	3.013	400.0	-103.3	340.4	400	244.83
183.1	1.0	2.589	2.604	2.608	400.0	-80.4	259.6	400	185.11
167.5	1.0	2.348	2.364	2.364	400.0	-67.2	215.3	400	153.19
137.2	1.0	1.892	1.904	1.901	400.0	-45.4	141.9	400	99.92
113.3	1.0	1.550	1.561	1.556	400.0	-31.1	96.0	400	67.23
97.4	1.0	2.657	2.673	2.667	200.0	-45.6	141.4	200	49.64

<b>ROYCE CROSS GROUP</b>	Manufacturing Date	Serial No
	Test Date	Report Number

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	YE2-355M1-2			Poles	2		Power	220 kW	
Voltage	415 V			Current	354 A		Frequency	50 Hz	
Speed	2980 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	W3	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	
10:00	415.2	3.547	3.583	3.521	100	775.6	780.6	766	43.9	—	—	71.1	—	—	—	—	—	—	—	—	—	12.7
10:30	415.3	3.547	3.574	3.512	100	775.6	780.6	766	46.8	—	—	75.2	—	—	—	—	—	—	—	—	—	13.0
11:00	415.3	3.547	3.596	3.530	100	780.6	785.5	771	49.2	—	—	78.5	—	—	—	—	—	—	—	—	—	13.2
11:30	415.2	3.516	3.574	3.499	100	770.7	780.6	766	51.1	—	—	81.5	—	—	—	—	—	—	—	—	—	13.5
12:00	415.1	3.499	3.547	3.485	100	770.7	775.6	761	51.8	—	—	83.0	—	—	—	—	—	—	—	—	—	13.8
12:30	415.1	3.521	3.574	3.508	100	775.6	780.6	766	52.0	—	—	84.1	—	—	—	—	—	—	—	—	—	13.9
13:00	415.1	3.516	3.552	3.499	100	770.7	775.6	761	51.9	—	—	84.7	—	—	—	—	—	—	—	—	—	14.2
13:30	415.0	3.508	3.547	3.499	100	770.7	775.6	766	51.6	—	—	85.1	—	—	—	—	—	—	—	—	—	14.2
14:00	415.2	3.556	3.605	3.539	100	780.6	785.5	771	51.4	—	—	85.3	—	—	—	—	—	—	—	—	—	14.2
最后三点平均值		353.567			A	231865.9			W	51.4	—	—	85.0	—	—	—	—	—	—	—	—	14.2

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)	75	95	115	135	155	175	195	215
RESISTANCE	0.00834	0.00830	0.00827	0.00823	0.00820	0.00817	0.00814	0.00811

#### WINDING RESISTANCE (COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.006563	0.006566	0.006568	0.00657	0.00656	11.9 °C

## ROYCE CROSS GROUP

Manu. Date

Serial No

Test Date

Report Number

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

**ROYCE CROSS GROUP**

Type	YE2-355M1-2	Poles	2	Power	220.0	<b>kW</b>
Voltage	415 V	Current	354 A	Frequency	50.0	<b>Hz</b>
Speed	2980 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

**LOAD TEST**

V	Hz	I1	I2	I3	mul.	W1	W2	W3	r/min	Temperature °C	Torque N.m
415.0	50.00	2.617	2.646	2.595	200	550.7	553.1	541	2967.1	84.9	1004.2
415.0	49.99	2.285	2.309	2.283	200	488.8	491.7	485	2971.2	85.0	898.1
415.1	50.00	1.786	1.806	1.775	200	391.1	393.5	386	2978.9	85.1	719.8
415.1	49.99	2.631	2.675	2.631	100	580.0	587.0	574	2985.4	84.9	533.9
415.2	50.00	1.803	1.835	1.807	100	391.3	395.3	388	2991.6	84.4	357.5
415.1	50.00	1.026	1.047	1.021	100	203.2	204.7	199	2997.0	83.6	178.8

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	330000	562.2	349936.5	4150.7	1.244	4275.4	6318.0	1995.9	94.23	0.866
125.0	275000	453.6	290277.0	2701.8	0.960	2741.7	4333.9	2004.2	94.75	0.890
100.0	220000	353.9	231537.9	1644.4	0.715	1628.5	2767.6	2013.2	95.03	0.910
75.0	165000	264.1	173753.6	915.6	0.483	824.3	1552.4	2021.3	94.96	0.915
50.0	110000	180.7	116916.2	428.8	0.289	330.7	684.3	2030.2	94.09	0.900
25.0	55000	103.3	60837.6	140.0	0.104	61.1	170.7	2037.1	90.41	0.820

<b>ROYCE CROSS GROUP</b>	Manufacturing Date	Serial No
	Test Date	Report Number

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	YE2-355M1-2	Poles	2	output Power	220.0	kW
Voltage	415 V	Current	354 A	Frequency	50.0	Hz
Speed	2980 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

### LOAD CURVE

