

# ROYCE CROSS GROUP

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
YE2-355L1-2 <b>FRAME</b>	IEC TYPE	280 kW	2980 r/min
2 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 <b>Hz</b>
ROYCE CROSS GROUP <b>MANUFACTURER</b>	450.6 <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	0.01014
NO LOAD CURRENT	AMP	76.56
NO LOAD INPUT	W	5986.1
CORE LOSS(Pfe)	W	2732.5
WINDAGE FRICTION LOSS(Pfw)	W	3199.5
STATOR WINDING LOSS(Pcu1)	W	1921.1
ROTOR WINDING LOSS(Pcu2)	W	1878.2
STRAY LOAD LOSS(Ps)	W	4855.3
FULL LOAD CURRENT	AMP	450.87
LOCKED ROTOR CURRENT	AMP	3347.13
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	7.43
FULL LOAD TORQUE	N.m	897.05
LOCKED ROTOR TORQUE	N.m	1532.94
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	1.71
PULL OUT TORQUE	N.m	2880.51
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3.21
INPUT @ FULL LOAD	kW	294.59
EFFICIENCY @ FULL LOAD	%	95.05
POWER FACTOR @ FULL LOAD		0.909
FULL LOAD SLIP	%	0.648
FULL LOAD SPEED	r/min	2980.6
STATOR WINDING TEMPERATURE RISE	K	62
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	56.1
AMBIENT TEMPERATURE OF TESTING	Deg. C	20.6
NOISE	dB(A)	96
VIBRATION	mm/s	0.9

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

<b>ROYCE CROSS GROUP</b>  YE2-355L1-2 280 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	YE2-355L1-2	<b>Poles</b>	2	<b>Power</b>	280.0 kW
Voltage	415 V	<b>Current</b>	450.6 A	<b>Frequency</b>	50 Hz
Speed	2980 r/min	<b>Duty</b>	S1	<b>Connection</b>	△
Ins. class	F	<b>Weight</b>	0 kg		IP55

### NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	W3	℃
526.1	1	50	3.562	3.426	3.392	50	76.6	21.1	87.7	80.9
491.4	1	50	2.474	2.559	2.516	50	58.8	62.2	31.1	80.7
415.7	1	50	1.530	1.539	1.539	50	43.3	38.9	37.7	80.4
366.4	1	50	3.018	3.082	3.103	20	99.9	88.8	80.5	80.1
311.0	1	50	2.550	2.444	2.550	20	80.5	86.0	72.2	79.9
255.6	1	50	1.998	2.040	1.998	20	77.7	69.4	66.6	79.1
206.6	1	50	1.764	1.679	1.700	20	63.8	69.4	61.1	78.7
154.8	1	50	1.424	1.403	1.381	20	61.1	63.8	55.5	78.5
109.6	1	50	1.169	1.254	1.190	20	58.3	58.3	52.7	78.1

<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	YE2-355L1-2	Poles	2	Power	280.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	450.6 <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.	Torqu N. m
197.5	1.0	3.568	3.555	3.600	400.0	-123.8	482.9	400	279.71
180.1	1.0	3.210	3.198	3.236	400.0	-103.2	395.4	400	227.78
163.5	1.0	2.880	2.868	2.901	400.0	-85.1	321.2	400	184.20
145.1	1.0	2.527	2.516	2.543	400.0	-67.3	249.5	400	142.21
129.4	1.0	2.240	2.229	2.252	400.0	-53.8	197.1	400	111.89
107.9	1.0	1.849	1.839	1.857	400.0	-36.3	135.0	400	77.18
93.1	1.0	1.596	1.586	1.601	400.0	-28.0	100.9	400	56.89
71.6	1.0	1.223	1.214	1.225	400.0	-16.8	59.4	400	33.32

<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	YE2-355L1-2		Poles	2		Power	280 kW	
Voltage	415 V		Current	450.6 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	
11:00	415.1	2.269	2.305	2.269	200	493.8	498.9	489	52.1	—	87.6	—	—	—	—	—	—	—	—	—	—	19.6
11:30	415.1	2.259	2.282	2.253	200	493.8	496.4	489	53.4	—	89.5	—	—	—	—	—	—	—	—	—	—	19.8
12:00	415.0	2.248	2.287	2.248	200	488.8	496.4	486	54.4	—	90.7	—	—	—	—	—	—	—	—	—	—	20.2
12:30	415.2	2.257	2.282	2.243	200	491.3	493.8	484	54.9	—	91.6	—	—	—	—	—	—	—	—	—	—	20.4
13:00	415.1	2.253	2.294	2.243	200	491.3	496.4	484	55.5	—	92.0	—	—	—	—	—	—	—	—	—	—	20.6
13:30	415.2	2.241	2.291	2.248	200	488.8	498.9	484	56.1	—	92.4	—	—	—	—	—	—	—	—	—	—	20.7
最后三点平均值		452.286			A	477454.1		W	56.1	—	92.0	—	—	—	—	—	—	—	—	—	—	20.6

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)	65	85	105	125	146.4	165	185	205
RESISTANCE	0.00617	0.00616	0.00615	0.00613	0.00612	0.00612	0.00611	0.00610

#### WINDING RESISTANCE (COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.004892	0.004889	0.004891	0.00489	0.00489	18.2 °C

## ROYCE CROSS GROUP

Manu. Date

Serial No

Test Date

Report Number

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

**ROYCE CROSS GROUP**

Type	YE2-355L1-2	Poles	2	Power	280.0	<b>kW</b>
Voltage	415 V	Current	450.6 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
415.3	50.00	3.219	3.273	3.208	200	691.2	698.4	681	2971	90.3	1254.3
415.2	50.00	2.848	2.902	2.834	200	619.3	625.5	609	2974.8	91.1	1126.8
415.3	50.00	2.249	2.269	2.242	200	491.8	493.8	487	2980.9	91.4	896.2
415.1	49.99	1.682	1.707	1.676	200	368.7	371.4	363	2986.1	91.2	671.0
415.0	49.99	2.315	2.342	2.319	100	491.6	496.0	490	2991.3	90.6	443.3
415.0	50.00	1.373	1.377	1.364	100	255.7	254.8	251	2996.1	90.1	222.7

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	W	EFF %	P.F
150.0	420000	701.6	446061.7	4651.6	1.097	4810.7	11138.3	2677.7		94.06	0.885
125.0	350000	570.6	369740.7	3077.3	0.853	3102.8	7635.9	2685.6		94.66	0.901
100.0	280000	450.9	294587.5	1921.1	0.648	1878.2	4855.3	2696.9		95.05	0.909
75.0	210000	337.7	220710.7	1077.8	0.451	979.2	2722.6	2704.6		95.15	0.909
50.0	140000	233.0	148040.4	512.9	0.276	399.9	1192.2	2713.3		94.57	0.884
25.0	70000	137.6	76513.7	178.9	0.133	98.2	301.8	2723.1		91.49	0.774

<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	YE2-355L1-2	Poles	2	output Power	280.0	kW
Voltage	415 V	Current	450.6 A	Frequency	50.0	Hz
Speed	2980 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

### LOAD CURVE

