

Single Phase Motor (No Capacitor)				
hp	Voltage	Amps	RPM	Service Factor
1/3	115	5.2	1725	1.35

Power= 746.4* (1/3)hp
 Power= 250 Watts

	RPM
No Load	1790
Load	1762

Tektonics Power Analyzer (\$3500)				
	Voltage	Amps	Watts	P.F.
No Load	118.7	4.511	152.65	0.279
Load		4.976	307.9	0.539

Amp Clamp Meter	
No Load	4.0 A
Load	4.4 A

Single Phase Motor (Capacitor Start)				
hp	Voltage	Amps	RPM	Service Factor
1/3	115	5.2	1725	1.35

Power= 746.4* (1/3)hp
 Power= 250 Watts

	RPM
No Load	1790
Load	1788

Tektonics Power Analyzer (\$3500)				
	Voltage	Amps	Watts	P.F.
No Load	118.7	5.633	184.16	0.276
Load	120.56	5.7	252.8	0.366

Amp Clamp Meter	
No Load	5.1 A
Load	5.9A

$$N(\text{stator}) = \frac{120 * \text{Frequency}}{\# \text{ of Poles}}$$

1800 RPM = 4 Poles

$X_L = 2\pi f L_s$
$R_s = 6.8\Omega$
$L_s = 8.37 \text{ mH}$
$Z_s = R_s + jX_s$

$R_m = 1.95\Omega$
$L_m = 11.78 \text{ mH}$
$Z_m = R_m + jX_m$

Kill-A-Watt (\$35)				
	Voltage	Amps	Watts	P.F.
No Load	118.3	4.53	153	0.28
Load		4.88	313	0.51

$$N(\text{stator}) = \frac{120 * \text{Frequency}}{\# \text{ of Poles}}$$

1800 RPM = 4 Poles

$X_L = 2\pi f L_s$
$R_s = 6.8\Omega$
$L_s = 8.37 \text{ mH}$
$Z_s = R_s + jX_s$

$R_m = 1.95\Omega$
$L_m = 11.78 \text{ mH}$
$Z_m = R_m + jX_m$

Kill-A-Watt (\$35)				
	Voltage	Amps	Watts	P.F.
No Load		5.66	190	0.27
Load		5.84	288	0.41