



y_p

$$y_0 = r_0 \cos \varphi$$

$$\varphi = \dots$$

$$y_1 = \sqrt{r_1^2 - x_0^2}$$

$$x_0 = r_0 \dots$$

$$= \sqrt{r_1^2 - r_0^2 \sin^2 \varphi}$$

$$k = \dots$$

$$= r_0 \sqrt{k^2 - \sin^2 \varphi}$$



$$y_p = y_0 + y_1$$

$$y_p = r_0 \left[\cos \varphi + \sqrt{k^2 - \sin^2 \varphi} \right]$$

$$y_p' = r_0 \left[-\omega \sin \varphi + \frac{2\omega \sin \varphi \cos \varphi}{2 \sqrt{k^2 - \sin^2 \varphi}} \right]$$

$$v_p = y_p' = -r_0 \omega \sin \varphi \left(1 + \frac{\cos \varphi}{\sqrt{k^2 - \sin^2 \varphi}} \right)$$

$$z = k^2 - \sin^2 \varphi$$

$$a_p = y_p'' = -r_0 \omega^2 \left[\cos \varphi \left(1 + \frac{\cos \varphi}{\sqrt{z}} \right) + \sin \varphi \left(\frac{-\sin \varphi \cdot \sqrt{z}}{z} + \dots \right) \right]$$

SOLAR ENERGY

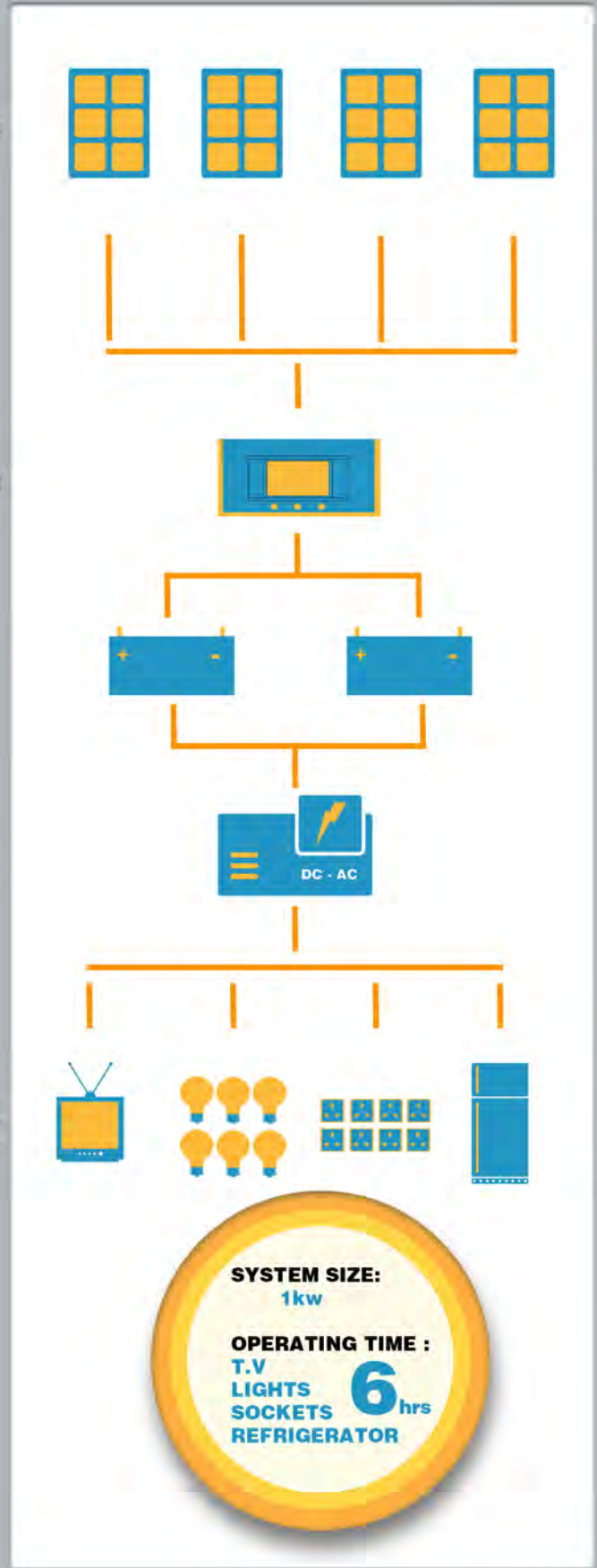
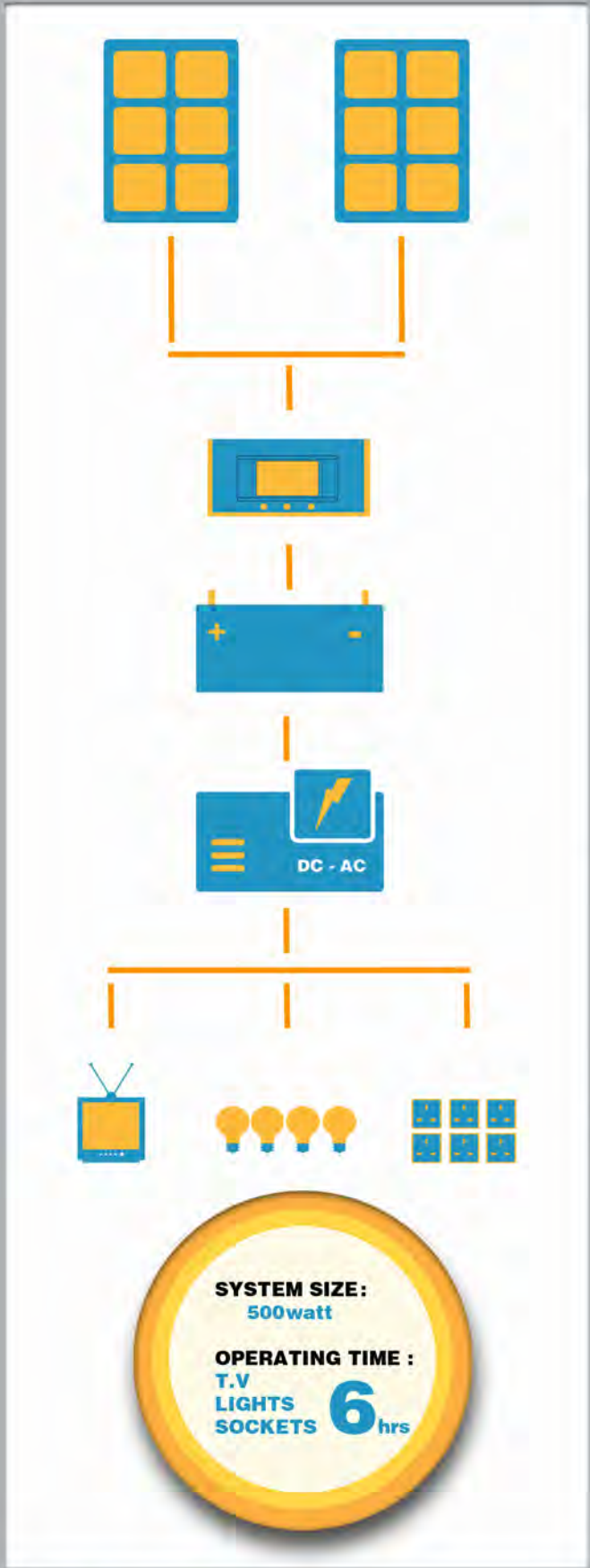
POWER

SOLUTIONS

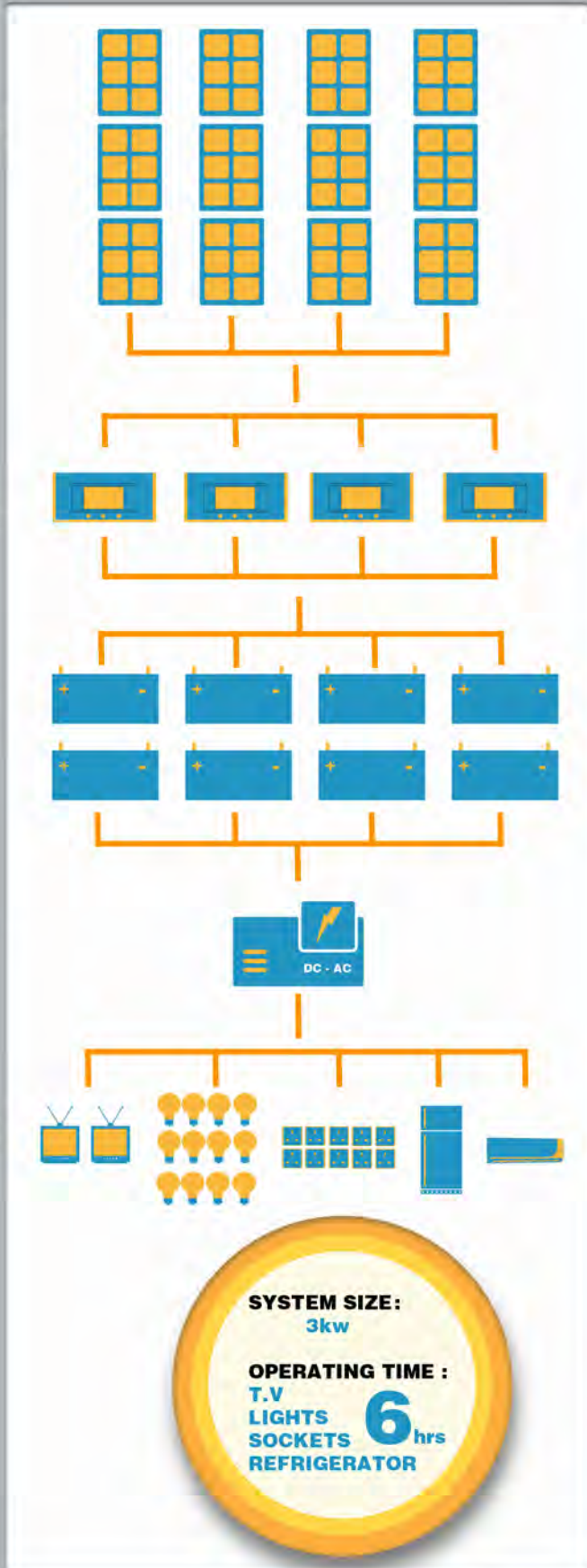
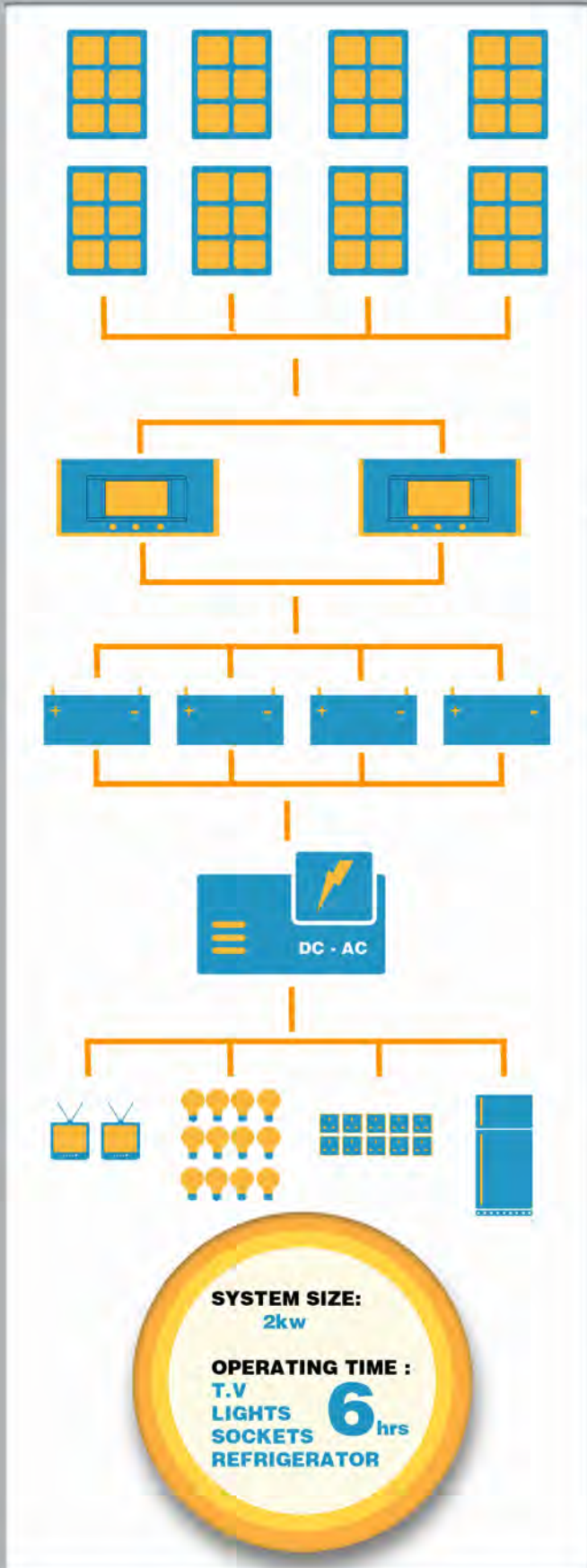
$$\frac{\cos \varphi}{\sqrt{z}} + \sin^2 \varphi \left(-\frac{\sqrt{z} \cdot \varphi}{z \sqrt{z}} + \frac{2 \cos^2 \varphi}{2z \sqrt{z}} \right)$$

$$= -r_0 \omega^2 \left[\cos \varphi \left(1 + \frac{\cos \varphi}{\sqrt{z}} \right) + \sin^2 \varphi \left(\frac{\cos^2 \varphi - z}{z^{3/2}} \right) \right]$$

RESIDENTIAL SOLUTIONS



RESIDENTIAL SOLUTIONS





$$= \sqrt{r_1^2 - r_0^2 \sin^2 \varphi}$$

$$k = \frac{r_1}{r_0}$$

$$= r_0 \sqrt{k^2 - \sin^2 \varphi}$$

$$y_p = y_0 + y_1$$

$$y_p = r_0 \left(\cos \varphi + \sqrt{k^2 - \sin^2 \varphi} \right)$$

$$y_p' = r_0 \left[-\omega \sin \varphi + \frac{2\omega \sin \varphi \cos \varphi}{2 \sqrt{k^2 - \sin^2 \varphi}} \right]$$

$$y_p' = -r_0 \omega \sin \varphi \left(1 + \frac{\cos \varphi}{\sqrt{k^2 - \sin^2 \varphi}} \right)$$

$$z = k^2 - \sin^2 \varphi$$

$\frac{1}{z} \rightarrow \frac{1}{k^2 - \sin^2 \varphi}$

$$y_p'' = -r_0 \omega^2 \left[\cos \varphi \left(1 + \frac{\cos \varphi}{\sqrt{z}} \right) + \sin \varphi \left(\frac{-\sin \varphi \cdot \sqrt{z} + 2 \sin \varphi \cos \varphi}{z} \right) \right]$$

$$= -r_0 \omega^2 \left[\cos \varphi \left(1 + \frac{\cos \varphi}{\sqrt{z}} \right) + \sin^2 \varphi \left(-\frac{\sqrt{z}}{z\sqrt{z}} + \frac{2 \cos^2 \varphi}{z\sqrt{z}} \right) \right]$$

$$= -r_0 \omega^2 \left[\cos \varphi \left(1 + \frac{\cos \varphi}{\sqrt{z}} \right) + \sin^2 \varphi \left(\frac{\cos^2 \varphi - z}{z^{3/2}} \right) \right] \quad \text{mit}$$

P.O Box 1404
Zip Code 11431
Riyadh, Saudi Arabia

T: +966 11 4723434,
F: +966 11 4725454

Building A08HB07
P.O Box 18489
Jabel Ali, Dubai, U.A.E

T: +971 4881 6462
F: +971 4881 6426

Building 26, Salwa Road
P.O Box 31731
Doha, Qatar

T: +974 4424 2777
F: +974 4436 9944

