



Sunnytek Solar Sweden

Mini Hydro power Kaplan Turbines 2-5 meters water head Page 1/2 23 October 2017



Sunnytek is happy to offer mini turbines for rural areas applications to generate a local grid. This model based on Kaplan turbines is optimised for water heads of 1.5-5 meter and covers a range of 300W to 5 KW in electrical output. This is a very simple design suitable for farmer areas with almost zero need for advanced maintenance. Most car mechanics can repair this with 2 separate hand tools. It can then be used for many years with low costs in areas with limitations in infrastructure. Kaplan low head turbines can live with a simple hand made earth dam farmers can do them self after simple papers. It is useable over 1.5 meters water head and up to 5 meter so there are plenty of possible sites. Output is 110 or 240 Volt AC and here the small unit of only 300W can handle 30 pcs 10W led tubes alone. This is a small rural village. Hydro works at nights so often no energy storage is needed.



Small Kaplan turbines features

- * Water head from low 1.5 meter and up
- * Simple dam and infrastructure need and often possible to do by unexperienced locals.
- * Output AC main voltage day and night and when cloudy.
- * Very simple design that can be handled by less experienced service staff.
- * Very reasonable costs and short pay off time.

This is a solutions for many rural tropical areas where there are many smaller creeks with water and a deviation of a few meter here and there.





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MKT turbines by Sunnytek

MKT 300	MKT 600	MKT 1000	MKT 2000	MKT 3000	MKT 5000
Output in W / 240 VAC					
300W	600 W	1000W	2000W	3000W	5000W
Current at 240 Volt					
1.36A	2.73A	4.55A	9.09A	13.64A	22.73A
Volume of water needed in M3 / sec					
51 Liter/ sec	51 liter / sec	60 liter / sec	134 Liter / sec	140 liter / sec	332 liter/ sec
Net weight for turbine + generator					
17 Kg	26 Kg	30 kg	60 kg	85 kg	150 kg

Notes about Mini Kaplan turbines

This turbine is not a high stability system as it have a simple controller only. it works well of LED lamps and mobile phone e chargers and most electronics. If you use synchrony motors speed will differ a bit.

If demands are higher we have an electronic stabiliser that adjust this but it is costly compared to the turbine. This controller can also connect to an other grid and share power here. It have auto frequency and phase sync functions.

Dam can be made in earth and gravel easily by farmers but we



assist with drawings and if needed staff that helps. The output of water is made in cement, wood or steel sheets as specified in a drawing. Pls see photos of page 1 of a wood design and a cement design and steel design at left.

Optional solution.

For more advanced users we have a similar system with feed in through a steel tube and draught tube as a conical steel tube. This is more ready and can accept higher

water heads and power (15KW) but adds costs. B side this we have other solutions with much higher out puts and high water heads to MW size and 100+ meters.



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