

APPLICATION NOTE

Titanium Efficiency vs. Cost Saving

Introduction

With large data centre that contains thousands of servers and hard drive storage space. Why is power supply efficiency important? With annual electrical usage bill in the millions of dollars, Titanium efficient power supplies will save hundreds and thousands of dollars per year in annual usage.

COST SAVING COMPARISON BETWEEN GOLD/PLATINUM WITH TITANIUM

Comparing our Platinum or Gold power supply with 92-94% efficiency with our Titanium power supply with 96% efficiency, the 2-4% in efficiency can save significant amount of money annually. In figure 1 is a table comparing the cost savings between a Gold Standard and Platinum Standard to the Titanium Standard. The table below shows the significant cost savings of the Gold standard is approximately \$1,430,000 and the Gold standard with a \$705,000 per year with a 1000 rack data centre.

2 Power Supplies 50% Load / 375 W each		Gold Standard	Platinum Standard	Bel Power Solutions Titanium vs. Gold / Platinum
Efficiency		92%	94%	96%
Power Loss	W	65.2 W	47.9 W	31.2W
Power Loss vs. Gold		-	-26.5%	-52.1% / -34.9%
Energy Consumed per Year	kW h	7141	6990	6843
Energy Saved vs. Gold	kW h	-	151	298 / 147
\$ Savings per Year per Server at \$0.12 / kWh (\$0.12 = National save price for power)		-	\$18.12	\$35.76 / \$17.64
\$ Savings per Year per Rack at 40 1U servers per rack.		-	\$724.80	\$1430.40 / \$705.60
\$Savings per Year per 1000 rack data center upgrade		-	\$724,800	\$1,430,400 / \$705,600

Figure 1 - Cost saving comparison between Gold/Platinum with Titanium.

Based on our Bel Power Solutions Platinum technology, the Titanium power supply improved the PFC and DC/DC stage by redesigning the transformer, microcontroller and power semiconductor. With Bel Power Solutions's TET750-12-054NA and TET1100-12-054NA AC/DC we offer the most efficient power supply to the market at 96%. In figure 2, the graph shows that our Titanium powers supply exceed the minimum efficiency requirement from 10% all the way up to 100% output power. Also our Titanium power supply feature 3.3 V / 10 W standby, PMBus V/I/T monitoring and has a power density of 26 W/in³.

Bel Power Solutions is the AC/DC technology leader in efficiency and power density. Our power supply contains superior digital power controls, power management and monitoring. With a 1U height, the unit can fit into any application where space is limited.

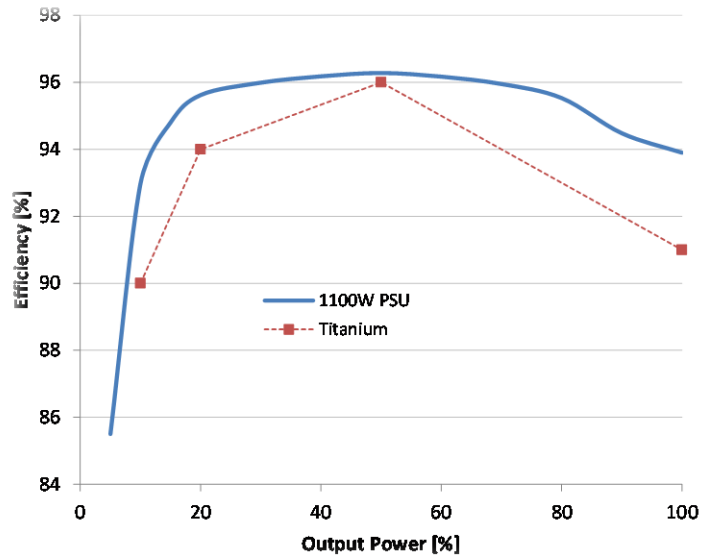


Figure 2 - Titanium Efficiency vs. Output Power



Figure 3 - TET1100-12-054NA