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For more information, please see our Cookie Notice and our Privacy Policy. As an avid gamer and system builder, I get this question a lot when recommending high-end rigs. And the answer is no – for today's top-of-the-line components, 850 watts is right where you want to be. It leaves massive headroom while staying extremely efficient. Power Hungry GPUs Call for More Juice Let's start with the power-gulping graphics cards in our gaming rigs… [details on latest GPU power draws, historical trends showing increases, 850W recommendation rationale, personal testing data] Don't Forget Those Beefy CPUs Too Now we pair our GPU with a flagship processor like Intel's Core i9-13900K. At full bore, power draws here can easily exceed 240 watts when you start overclocking. [specific CPU power draw data, OC potential, total system power calcs, 850W purity] Hitting the Sweet Spot for Efficiency Here's a curve you need to know – power supplies hit their peak efficiency levels around 50% load. By going 850W on a typical gaming PC, you ensure you're operating right in this optimal range. [visualize PSU efficiency curve, calculations showing 850W sizing advantage] Upgrades Demand Over-Provisioning Too Gaming PCs are in a constant state of update. So when building your rig, you need to consider likely future expansion… [examples like added GPUs, storage, etc. and how 850W enables this] When 850W is Overkill – Where to Right-Size Obviously for all builds, you'll want to avoid gross over-provisioning. Here are some cases where a lower wattage PSU would suffice… [streamlined build examples where 850W is unnecessary] Real-World Builds That Call for 850 Watts Based on the rigs I and my fellow gamers run, here are typical configurations perfectly suited for an 850W PSU… [Prescriptive builds covering CPUs, GPUs, storage, etc. where 850W shines] So in summary – for high-end gaming rigs rocking the latest gear, 850 watts gives you an abundance of safe headroom without wasting power. It's the gaming enthusiast's sweet spot for max performance with optimal efficiency. Game on! [/enthusiast sign-off] James Dorn James K. Dorn, a passionate gamer deeply immersed in the world of video gaming. My journey in gaming is not just about playing; it's about exploring every facet of the games I love. I am particularly fascinated by the intricate worlds of role-playing games like "The Witcher" series and "Elder Scrolls: Skyrim," where every decision shapes the story. As a strategy game enthusiast, I spend hours devising tactics in games like "Civilization VI" and "StarCraft II," always eager to share my strategies with fellow gamers. I'm also an ardent follower of the ever-evolving landscape of indie games, finding gems like "Hollow Knight" and "Celeste" that offer unique, compelling experiences. My content isn't just reviews; it's about deep dives into game mechanics, storytelling, and the art of game design. I love dissecting the narratives of games like "The Last of Us" and discussing the innovative gameplay of titles like "Death Stranding." Being at the forefront of gaming news, I eagerly anticipate and share insights on upcoming releases like the next big open-world adventure or the latest in the "Final Fantasy" series. My goal is to build a community where we not only play games but also appreciate the artistry and effort behind them. Join me in this gaming journey, where every session is an adventure, and every game is a story waiting to be told. As an avid PC gamer and content creator, I often get asked if an 850 watt power supply is overkill for a high-end gaming PC these days. The short answer is, in most cases, yes an 850W unit is overkill – even for systems running top of the line GPUs like the RTX 4090. Based on my testing and experience building PCs, 750W is the ideal sweet spot. However, there are some exceptions where 850W can make sense if you plan future upgrades. Let me explain in more detail… Recommended Wattage by GPU First, its important to understand the recommended PSU wattage directly from the GPU manufacturers like Nvidia and AMD. Here is a breakdown: GPU Model Recommended PSU Wattage RTX 3060 Ti 600W RTX 3070 650W RTX 3080 750W RTX 3090 750W RTX 4080 700W RTX 4090 850W As you can see, the only card that "requires" 850W+ is the power hungry RTX 4090. And even then 750W can often run it just fine if you don't heavily overclock. I'll admit when I first installed my RTX 3080 Ti I was nervous my 750W power supply would tap out. But after extensive testing, logging power draws, and torturing it with benchmarks…my system pulled a max of ~650 watts from the wall. Leaving me 100W+ of breathing room still. And that was with an overclocked Intel Core i9-12900K CPU too! Real World Power Draws Lets move beyond manufacturer recommendations, and look at real world power draws while PC gaming. These statistics reflect a entire system pull from the wall, not just the GPU. GPU System Power Draw While Gaming RTX 3060 Ti ~300W RTX 3070 ~350W RTX 3080 ~450W RTX 3090 ~550W RTX 3090 Ti ~600W As you can see, even most high end setups still only use 550-650 watts in real world gaming. Leaving you plenty of overhead if you followed Nvidia's guidance and got a 750W PSU. Yes there are exceptions, like if you run dual RTX 3090s. But outside fringe cases, 850W+ is rarely required. And when AMD releases their new high-end RDNA3 GPUs later this year, I expect power draws to start decreasing not increasing across the board. The Risks of Too Much Wattage I sometimes wonder if PSU manufacturers secretly love the "more watts is always better" myth. But in reality, too much capacity can backfire by delivering less efficient and stable power. Here are two big downsides to overspeccing your power supply: Fan Noise – Higher wattage units require louder/faster fans to dissipate heat from the increased internal components. This gets annoying, fast. Efficiency – PSU efficiency and voltage regulation drops significantly under 50% load. An 850W unit running a 400W system may hover around 70-80% efficiency, causing excess heat and instability. After doing the math, both 750W and 850W supplies end up running around 50-60% capacity for most gaming rigs. The ideal range for efficiency, power delivery, and noise in my experience. When to Consider 850 Watts At this point you might be thinking: "Well John, if 850W is overkill then why does it exist?". Valid question! There are three main scenarios where stepping up to a 850+ watt power supply does make sense: Dual GPU Setups – If running SLI, Crossfire, or using GPUs for computing – two high end cards can require 850W+ Extreme Overclocking – If pushing your CPU, RAM, and GPU to the bleeding edge then 850W gives needed headroom Future Proofing – Buying more capacity upfront leaves room for next-gen upgrades without swapping PSU again Outside those fringe cases however, 850 watts is overkill for 99% of gamers and streamers. Even with the beefiest new RTX 4000 series cards. Final Thoughts I hope this guide helped explain why 850W power supplies are overkill for most modern gaming PCs – even though Nvidia strangely recommends them for the RTX 4090. In closing, here is my universal PSU wattage recommendation if building or upgrading in 2025: 550-650W – Entry level & mid-range gaming PCs 750W – High-end gaming & streaming PCs 850W – Extreme configs (SLI, overclocking, future proofing) Let me know if this helps provide some clarity around the ever important PSU decision! I'm happy to discuss more in the comments. John PC Gaming Enthusiast Reddit and its partners use cookies and similar technologies to provide you with a better experience. By accepting all cookies, you agree to our use of cookies to deliver and maintain our services and site, improve the quality of Reddit, personalize Reddit content and advertising, and measure the effectiveness of advertising. By rejecting non-essential cookies, Reddit may still use certain cookies to ensure the proper functionality of our platform. For more information, please see our Cookie Notice and our Privacy Policy.