

TABLE 1—PERFORMANCE CHARACTERISTICS FOR LED- AND FLASH-LAMP-BASED ILLUMINATION

Performance category	Flash lamp	LED
Light output	High—typically 10 to 400× higher than LEDs. Line source output makes even light distribution relatively simple.	Low—point source output makes even light distribution somewhat difficult.
Illumination versus time	Pulsed—good for sharp, still picture.	Continuous—good for video.
Color temperature	5500 to 6000°K—very close to natural light. No color correction necessary.	8500°K—blue light requires color correction.
Solution size	Typically 3.5×8×4 mm for optical assembly; 27×6×5 mm for circuitry—dominated by flash capacitor (6.6 mm in diameter, may be remotely mounted).	Typically 7×7×2.4 mm for optical assembly; 7×7×5 mm for circuitry
Support-circuitry complexity	Moderate	Low
Charge time	1 to 5 sec, depending on flash energy	None—light always available.
Operating voltage and currents	Kilovolts to trigger, 300V to flash. ISUPPLY to charge is approximately 100 to 300 mA, depending on flash energy. Essentially zero standby current.	Typically 3.4 to 4.2V at 30 mA per LED continuous, 100 mA peak. Essentially zero standby current.
Battery power consumption	200 to 800 flashes per battery recharge, depending on flash energy.	Approximately 120 mW per LED (continuous light) and 400 mW per LED (pulsed light).