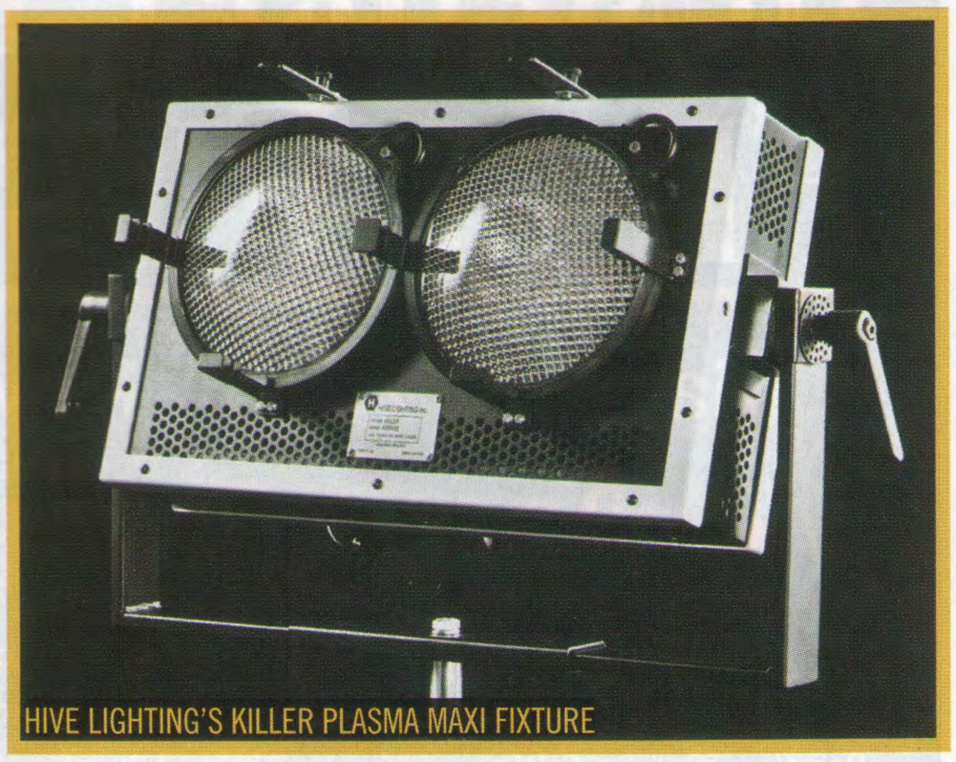
STAR POWER



HIVE LIGHTING'S KILLER PLASMA MAXI FIXTURE

All Photos Courtesy of Hive Lighting

HIVE'S PLASMA TECHNOLOGY HARNESSES LIGHT INNOVATIVELY AND INEXPENSIVELY

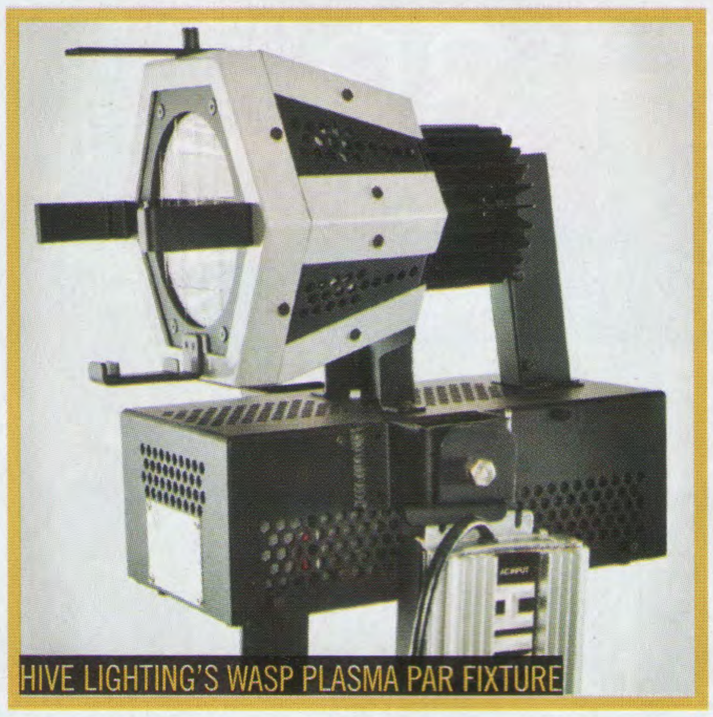
Think about a memorable shot from one of your favorite movies—an image that telegraphs a mood or emotion so well that it travels past your eyes and right into your heart. Cinematic images like that can be so powerful that we come to think of them as living, breathing beings. And the biological core of all such images is that most magical moviemaking element: light.

Light is the paintbrush that moviemakers use to color the screen that is their canvas. Yet despite the vital importance of lighting in the moviemaking process, most productions still rely primarily on tungsten lights—a technology that is over 100 years old. And even the relatively newer lighting instruments that have gained wide acceptance, such as fluorescents and HMI, are decades-old, as well.

Many of the fixtures built around these legacy technologies have special power needs that require the use of generators. Also, with the exception of fluorescent units, most lights generate so much heat that they create a genuine safety hazard and can add significantly to cooling costs on interior sets. These are factors that can quickly become big challenges—especially for budget-conscious indie productions.

Recently, LED technology has begun to offer moviemakers new choices with lights that finally live up to the promise of greater efficiency and cooler, safer sets. However, aside from some of the very latest models, most of these lights come in flat-panel form factors that don't behave in the same way that industry-standard fixtures have for years. Most notably, they are generally more diffuse light sources that can be challenging to shape and control when lighting a scene.

But since September 2012, Hive Lighting has been making waves with their innovative plasma lights. Ironically, plasma lighting (or light-emitting plasma) is a new application of a technology that creates light in much the same way as the oldest sources of illumination the universe has known: the sun and stars.



HIVE LIGHTING'S WASP PLASMA PAR FIXTURE

A NATURAL FIT

As Jonathan Miller, Chief Product Officer and co-founder of Hive Lighting explains, "We are all very used to plasma light sources: we see them all over the universe as stars, and up close as our planet's sun. A plasma bulb can be thought of as a little micro-star."

In the case of Hive's units, the amount of light released is especially stunning, given that the plasma bulb contained in each fixture is about the size of a grain of wheat. Miller says, "Once the gas inside reaches plasma state, very little gas is actually needed to create a huge light output, and since there is no filament or electrodes, the bulb itself can be very small and very stable."

All of that means that Hive's daylight-balanced plasma bulbs are as long-lasting as they are bright. The bulbs have a life rating of 10,000 hours, or about 30 times what one would expect to get out of a tungsten bulb. And while plasma lights are amongst the newest innovations to reach a movie set, the genesis of the technology is actually quite old. "This technology of exciting gas with RF (radio frequency) energy was initially discovered by Nikola Tesla at the turn of the last century," says Miller. "But the current bulbs were initially developed by a Silicon Valley tech company for a variety of purposes over a decade ago, and in their most recent form have been around for about four years as street lights."

Hive began seriously looking at how the technology could be used for production needs about two-and-a-half years ago. "We saw the light source and thought that with a few tweaks, it could become a great production light," says Miller. "Working with the bulb companies, we developed a bulb for this market that had high color quality and great efficiency. After that, we really dedicated ourselves to optical design. Because of the unique qualities of the bulb, existing off-the-shelf reflectors and lenses couldn't just be used, so

we went ahead and designed the technology and the fixtures to work in the way we had come to expect from legacy technologies like tungsten and HMI."

A BIG BANG

It was very important to Miller and Hive co-founder Robert Rutherford that their products fit into a workflow that production crews were already accustomed to. Their pre-Hive lives significantly influenced their priorities: "We were friends from college," says Miller. "I was working as a cinematographer and Robert was working as a lighting consultant in the industrial and architectural space, helping companies lower their electrical bills by adopting new lighting technologies. I would help Rob with certain technical and aesthetic questions about lights and he would introduce me to new innovations in bulb technology."

When the pair came across those first street lighting bulbs, they started working almost immediately to adapt the bulb to the needs of cinematographers. "After about a year of R&D, our third partner, Jaime Emmanuelli, joined us, bringing his years of experience in manufacturing and sales in the entertainment lighting world to the mix," says Miller. "Jaime immediately recognized the potential of Hive's plasma technology and helped us take our idea and turn it into a company with actual products for the market." In addition to being a principal at Hive, Emmanuelli is Hive's Director of Worldwide Sales and Strategy.

CORE OFFERINGS FOR ANY PRODUCTION

Hive lights are quickly becoming available worldwide. And while Miller and his partners are excited about developing a variety of new fixtures in the coming years, they initially launched with four versatile products: Killer Plasma Maxi, Wasp Plasma Par, Hornet Plasma Fresnel, and Drone Source 4 Plasma retrofit kit. "Our focus is getting [Hive lights] in front of as many people as possible so they can become familiar with Hive's plasma technology," says Miller. "In the longer term, the technology will be getting brighter, so we will have bulbs with similar efficiencies in higher wattages."

HIVE'S EFFICIENT LIGHTS ALLOW FOR BIG ILLUMINATION IN REMOTE SPACES

Even in their first generation, Hive lights already offer great potential advantages. While they are all daylight balanced, like their older HMI counterparts, they provide, according to Miller, "twice the efficiency of HMIs and LEDs." And they are six times as efficient as a tungsten light. As an example, Hive's Hornet Fresnel model is completely flicker-free and draws only 276 watts, but is brighter than a 2000-watt tungsten Fresnel—all while putting out so little heat that the light can generally be handled without protective gloves. Hive lights are not dimmable, but each fixture includes its own scrim set for easily controlling the amount of light they emit.

ADVANTAGES FOR INDIES

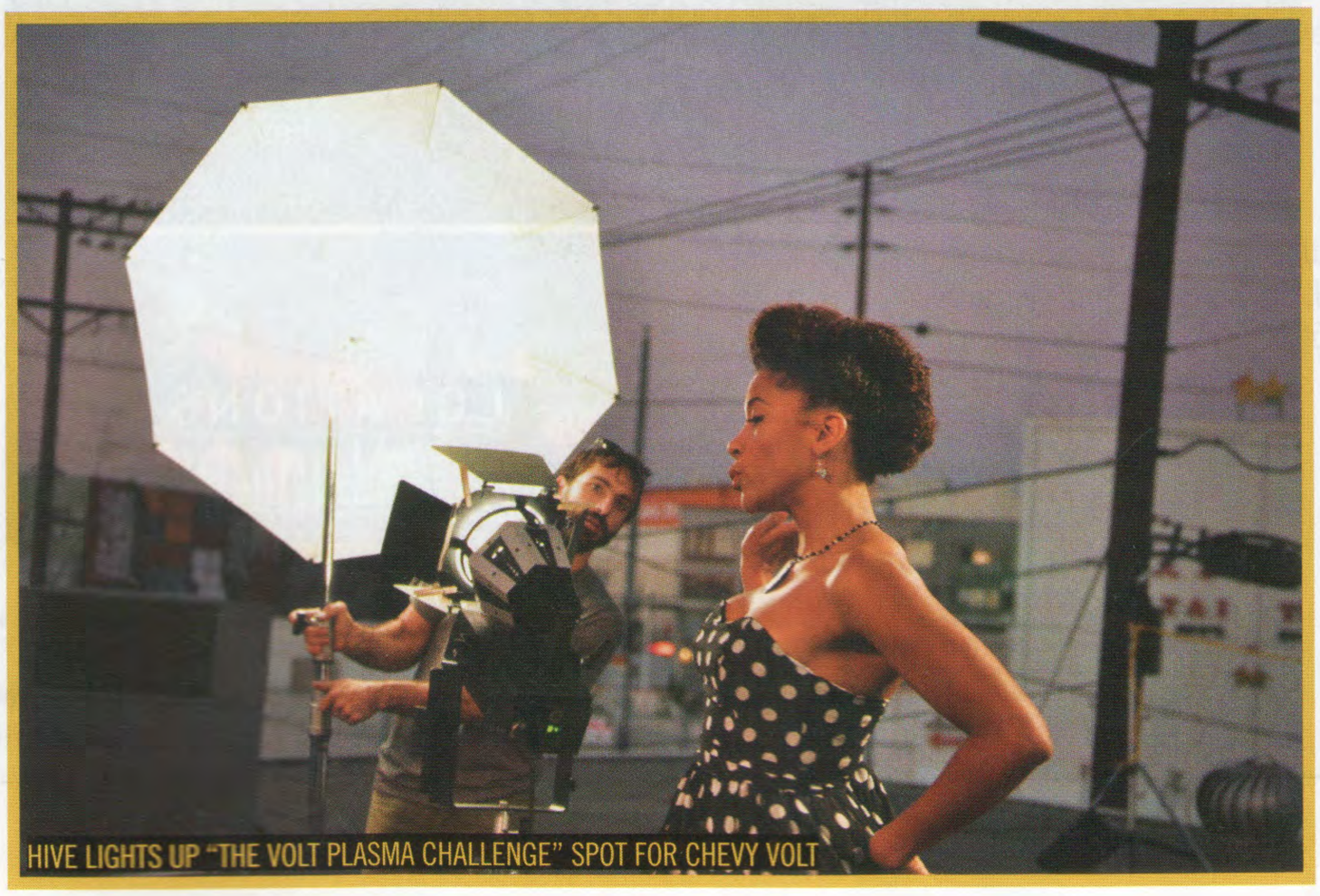
Huge production entities such as Fox and Paramount have already begun adding Hive lights to their lighting arsenals. But the biggest beneficiaries of Hive's technology could end up being smaller indie moviemakers. "Hive offers the indie filmmaker the opportunity to do more with less, avoiding costly generators," says Miller. "They provide a powerful light source that can be reliably plugged into the wall on location shoots."

That can save precious budget dollars in a multitude of ways. "From permits to auxiliary rentals to just having to keep putting diesel in the generator, being able to cut that out of the equation for an indie filmmaker is a huge advantage," says Miller. "With less overall resources, lighting effects formerly only possible for huge productions will now be available to smaller indie crews."

While the street prices of Hive lights (around $5,200 for the Hive Hornet Plasma Fresnel) may relegate them to the "rent, don't buy" list for some moviemakers, their overall cost of ownership could net out to being less than the HMIs or LEDs they replace. "Obviously, there are less expensive lights on the market, but they either don't have the same amount of output or color quality," says Miller. "Also, it is important to remember: with no bulb replacement for the first 10,000 hours, the plasma lights are less expensive to own and maintain."

Of course, like any new technology, Hive lights aren't going to make someone a better moviemaker. "Just like Final Draft didn't make the world better writers, lighting will still need talented gaffers, cinematographers and technicians with an understanding of the world they are creating, and the story they are telling, to design beautiful images with these new light sources," says Miller.

Nonetheless, it does seem that Hive has actually made it a little easier to add some bright star power to your next movie. **MM**



HIVE LIGHTS UP "THE VOLT PLASMA CHALLENGE" SPOT FOR CHEVY VOLT