

Chauvet Professional Ovation ED-190WW

By: Mike Wood

We are experimenting with a new format this month, a mini-review designed for simpler products that don't require the bi-monthly full-length slot. As we move inexorably towards LEDs in all things, there are a large number of conventional, or semi-conventional, luminaires coming on the market. No moving parts, apart from a fan perhaps, but they use new technology and are interesting to look at. The first of these reviews is for the Chauvet Professional Ovation ED-190WW. It's a long name for a product that is designed to be a work-horse. No special effects, just plain white light in a familiar ellipsoidal-style housing. I say "ellipsoidal-style" because I suspect many users will continue to call this class of product an ellipsoidal, or a Leko, even though there is no ellipsoidal reflector to be seen!

As with the larger reviews, I've tested all that I can and



Figure 1: Unit as tested.

present the results for your decision. Is the Chauvet Professional Ovation ED-190WW a product for you? The results presented here are based on the testing, with the fixture operating on a nominal 115V 60Hz supply, of a single Ovation ED-190WW unit supplied to me by Chauvet (Figure 1).

Light source

The Ovation ED-190WW joins its Chauvet Professional family in using an array of LEDs as the light source. In this case, there are 19 phosphor white LEDs, each consuming approximately 10W, arranged in concentric hexagons on a planar circuit board. Each LED is in a package with a simple primary optic. Figure 2 shows the array of LEDs in the back of the die-cast housing. Right on top of the LEDs is a molded array of 19 corresponding TIR lenses designed to collimate

the light from the LEDs and pass it into a single main glass lens. Figure 3 shows the TIR optics, while Figure 4 is the lens.

The LED circuit board is mounted on a finned aluminum heat sink that, in turn, has a large-diameter fan on its rear surface. More of this can be seen in Figure 5, which shows a view of the electronics and heat sink after removing the outer casing. This fan is temperature-controlled, and the Ovation provides three modes of operation that balance fan speed (and thus noise) against light output. For the light-output tests, I ran the unit in the full power mode, where there is no throttling of the lamp output and the fan runs as fast as it needs to keep the LEDs cool.

Dimming

The Ovation ED-190WW is interesting in that, as well as offering normal DMX512-controlled 8- or 16-bit dimming of the lamp, it also provides a mode where the unit is powered by a standard theatrical-phase control dimmer, and the light

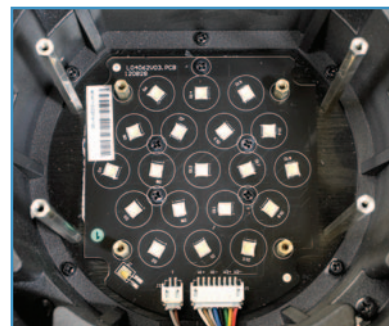


Figure 2: LEDs.

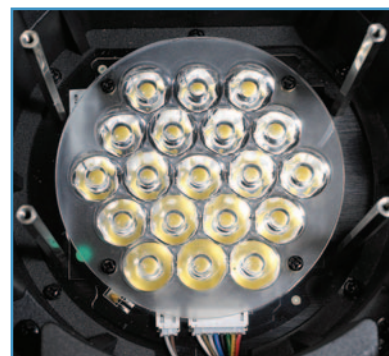


Figure 3: TIR lenses.

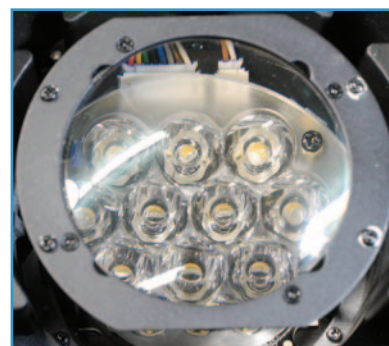


Figure 4: Lens.

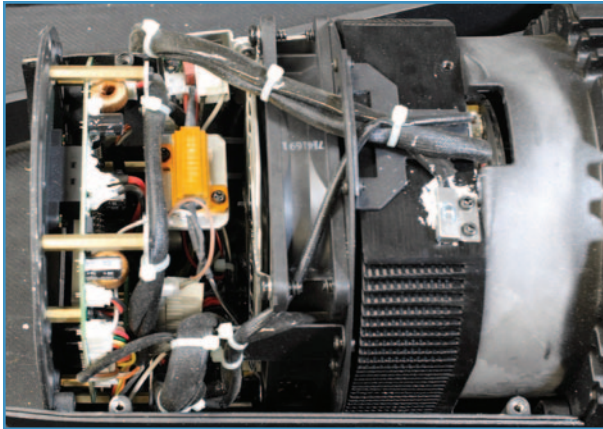


Figure 5: Electronics.

output follows the dimmer input.

Let's look at the DMX-512 control mode first. Various options are provided for dimmer curve and speed, but I used the default settings to achieve the result shown in Figure 6. The dimming, when controlled from DMX512, was smooth and clean, with a dimming curve that is square law in shape, albeit a bit deeper curve. I saw a little bit of jitter at some settings where light output was oscillating by about 1%. However, this was really only visible to the light meter, not to the human eye.

Turning to the mode where the control comes from the voltage provided to the unit from a standard dimmer, I wanted to test how the Ovation ED-190WW compared with an incandescent load, so I measured the light output from both the Ovation and a standard incandescent lamp when fed from the same dimmer pack simultaneously. Figure 7 shows how they compared in my test. The graph shows RMS voltage input along the x-axis, and the corresponding percentage light output from both luminaires on the y-axis (each

normalized to their own 100%). The results were a bit of a mixed bag. On the plus side, Chauvet has done a good job of providing smooth dimming, the output is clearly heavily smoothed, and the end result is quite acceptable in terms of jitter or jerkiness. The dimming curve, on the other hand, is a little strange. Nothing much happens while the input volts drop from 115V to 90V, then the majority of the dimming happens between 90V and 70V. Below 70V, the dimming follows the incandescent lamp closely. This continues down to about 10V, at which point the unit powers down completely and the LEDs extinguish. The behavior reverses on fade up, with the exception that you need to get up to about 15 or 20V before the LEDs kick in again. There is also about a one-second delay in control compared to that for the incandescent lamp. (Note: These readings were taken when running on a nominal 115V, 60Hz supply. I didn't test at 230V or 50Hz.)

To be fair, I'm being very critical; trying to emulate control of a lamp from a phase control dimmer is very difficult, and I've seen offerings that didn't perform at all well. The point is that it works, and works smoothly, but it's never going to be a drop-in replacement for an incandescent lamp off the same dimmer. You will need to look at cue levels, cue timings, and how you deal with the turn on and off point to improve the match.

What I wasn't able to try, as I only had a single unit, was how multiple units match in terms of their curves, and whether or not loading a dimmer with a number of these loads caused any problems. I know I've seen problems in the past with some dimmers when feeding loads with active power factor correction like this. Some dimmers are better-behaved than others, and that's outside Chauvet's control. If the control of the Ovation ED-190WW from a phase control dimmer is critical to your application, I strongly suggest you

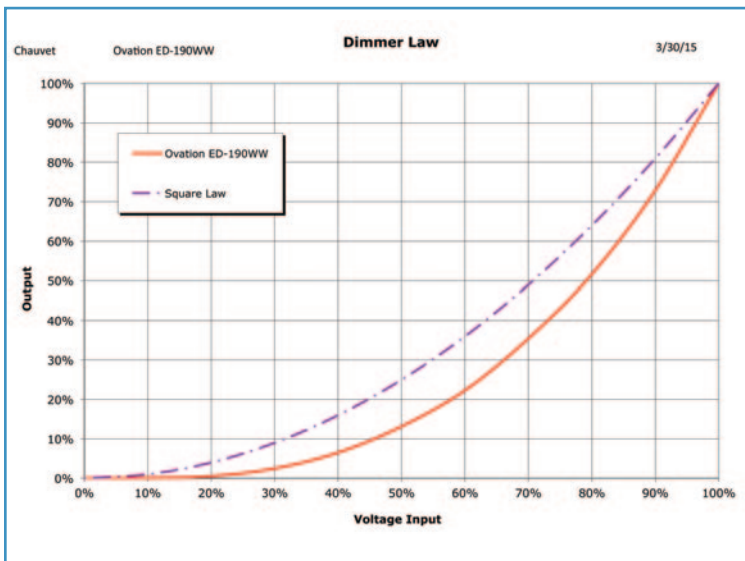


Figure 6: Dimmer law.

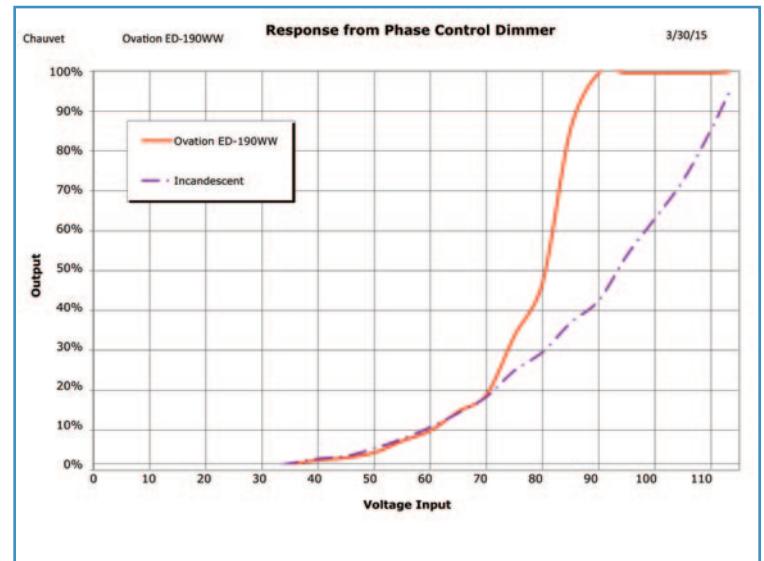


Figure 7: Phase control.

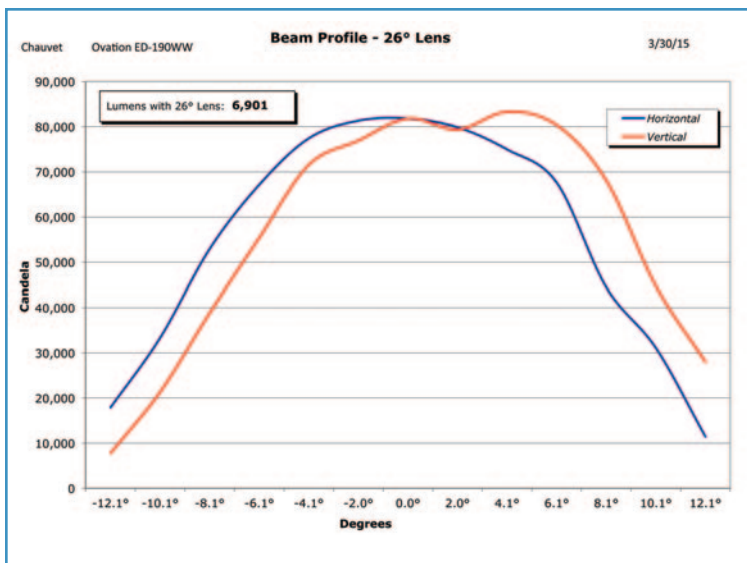


Figure 8: Beam profile.

test a unit on your own dimmers in your own venue and confirm everything is OK. Some trimming of the dimmer itself, particularly its pre-heat and curve, will likely help enormously. I have no such concerns about operation from DMX512.

Output

The Ovation ED-190WW uses a conventional range of output lenses, each of which has the usual framing shutters and gobo and color frame holders. In this case, Chauvet Professional provided me with a 26° lens and all results are reported with that lens fitted. At full power output, I measured 6,900 lumens at a field angle of just over 24°. Color temperature was 3,067K with a CQS of 89 (CRI 90) and negligible Duv of -0.0005. In other words, a very usable color and quality of white light. A little lacking in deep red, R9 was 49, but very usual for white LED units. Thermal droop was low; I measured a drop from 100% output to 92% in 30 minutes at full power. Figure 8 shows the beam profile.



Figure 9: Rear panel.

Noise

The cooling fan is really the only noise producer. I measured 38.2dBA at 1m when run in full power mode; this dropped to 35.4dBA at 1m when run in studio mode. The light output dropped to a corresponding 68% in studio mode.

Electrical parameters

I measured power consumption with the LEDs at full power at 1.82A from a nominal 115V 60Hz supply. Power was 220W, with a power factor of 0.99. Quiescent consumption with the LEDs off was 0.25A, 24W at a power factor of 0.8.

Construction and electronics

The Ovation ED-190WW looks like a familiar theatrical luminaire, with its black die-cast aluminum and manual yoke. The rear panel of the unit shown in Figure 9 has both five-pin XLR DMX connectors and three-pin data connectors, as well as powerCON in and out to allow daisy-chaining units. The menu system, through the four-character display, allows local control, choice of the DMX512, or dimmer control modes, as well as self-test and configuration options.

Well, that's it for our first mini-review. I hope there was enough meat here for you to find it useful and to determine if the Chauvet Professional ED-190WW is a unit you should try out. 📡

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