

High Pressure Performance -  
from a Low Pressure Lamp!

# Our 9K90 . . . 'An Entirely New Breed of Sunlamp'!



COSMOLUX VHR 9K90  
BY Cosmedico

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THE COSMOLUX VHR 9K90 is a new VHR lamp that was created with the objective of producing 9000 microwatts UVA/cm<sup>2</sup> with UVA maintenance of +90% at 100 hours.

For comparison, the regular VHR specification and production data along with the specification data for the new VHR 9K90 are listed in Figure A.

The table in Figure A shows that we have consistently managed to exceed the UVA specification on the standard VHR lamp by about 8% (7600 spec vs. 8200 actual).

The VHR 9K90 represents a UVA improvement of nearly 20% over the original VHR specification and an increase of about 10% over the original VHR lamps as realized in production.

You will also notice that the new VHR 9K90 has been designed to have an exposure time that is the same as the original VHR. This means that when the new VHR 9K90 is used by OEM equipment producers who are using the original

	UVA microwatts/cm <sup>2</sup>	Typical Exposure Times in Minutes	Maintenance @100 Hours
VHR Specification	7600	9 - 15	85%
VHR Actual Production	8200	9 - 15	86%
<b>VHR 9K90 Specification</b>	<b>9000</b>	<b>9 - 15</b>	<b>+90%</b>

Figure A

VHR, it is unlikely that there will be any changes to the exposure schedules of their equipment.

Additionally, when the CosmoLux VHR 9K90 is used as a 'replacement lamp', it will be documented as compatible to both the CosmoLux VHR, #16180, and the CosmoLux VHR-TT, #16169.

The revolutionary CosmoLux VHR 9K90 is produced using a precise blend of four phosphors. This particular blend has never been employed in a tanning lamp and one of the four has never before been used in any lamp product. Three of the component phosphors are "UVA" based and the fourth is a high maintenance "UVB" emitter. As mentioned earlier, our objective was to reach never before attained levels of UVA production

(9000+ microwatts/cm<sup>2</sup>) and superb UVA maintenance of 90%+ @ 100 hours.

What is most encouraging (and somewhat unexpected) is that the new VHR 9K90 lamp has significantly improved UVB maintenance. Typically, UVB declines at a faster rate than UVA. In the VHR 9K90, both UVA and UVB degrade at a slower rate than in the original VHR. Testing conducted on pilot production lamps indicates that UVB maintenance will rival UVA maintenance at +90% at the 100 hour mark.

The importance of measuring, recording, and focusing on '100 hour' readings should not be under-estimated. As a matter of practice, our lamps are measured "fresh-out-of-the-box" at 0 hours and again after 100 hours of use. With this

data, we can very accurately predict the useful life of any lamp. If the 100 hour data shows "85% of initial" – that particular lamp will have a useful life of +/- 800 hours. If the 100 hour data shows "+90% of initial" the lamp will have a useful life of +1000 hours. In the case of the new VHR 9K90, initial estimates predict a useful life of +1100 hours. Useful life is defined as that point in operational time when the UV of the lamp has reached 70% of its initial output.

The VHR 9K90 exhibits exceptional UVA and UVB maintenance characteristics – much improved over all earlier VHR designs and much better than designs from all competing manufacturers. In the salon the VHR 9K90 will provide fresh, out-of-the-box performance throughout the useful life of the lamp.

The substantial improvements were not accomplished by making minor changes to the old VHR lamp. The VHR 9K90 is, in all respects, an entirely "new breed" of lamp. As mentioned earlier, it is produced using a radically new phosphor blend, a blend which produces a spectrum unlike that of any other low pressure source. In Figure B, we have shown the spectral power distribution of the new VHR 9K90 vs. the original VHR. Notice that peak output in the original lamp is at +/- 350 nm. Peak output in the VHR 9K90 has shifted to the right and is found at +/- 365 nm. This 'shift' in peak output was immediately recognized when pilot production lamps were tested at salon level. In early reports, one salon owner described the VHR 9K90 as "delivering a high pressure tan". This is an accurate evaluation. In Figure C we have compared the Spectral Distribution of a filtered 400W High Pressure Quartz Lamp with that of the VHR 9K90.

Note that both the filtered high pressure

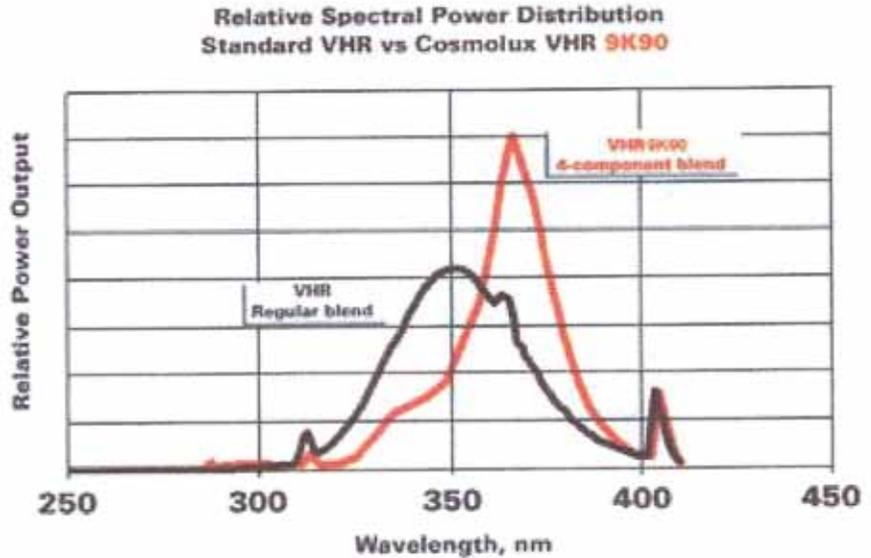


Figure B

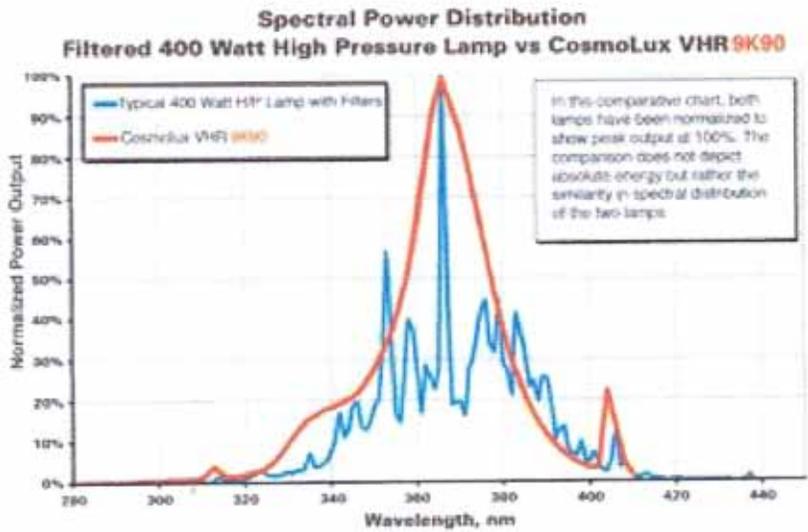


Figure C

and the VHR 9K90 peak at nearly the same wavelength - 365nm. Also note that the spectral distribution of the VHR 9K90 is 'fuller' than that of a filtered 400W H/P lamp. In other words: there are no "valleys" in the VHR 9K90 spectral power distribution curve.

This lamp provides all of the benefits of high pressure tanning (and more) in a low pressure format. Indeed, it is the unique spectral characteristics of this lamp that led us to claim: High Pressure Performance from a Low Pressure Lamp!