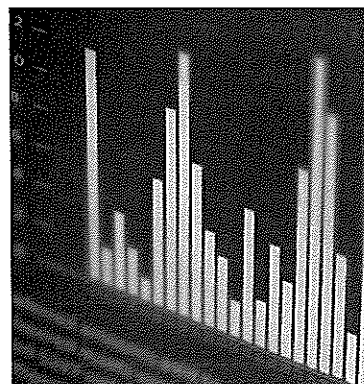
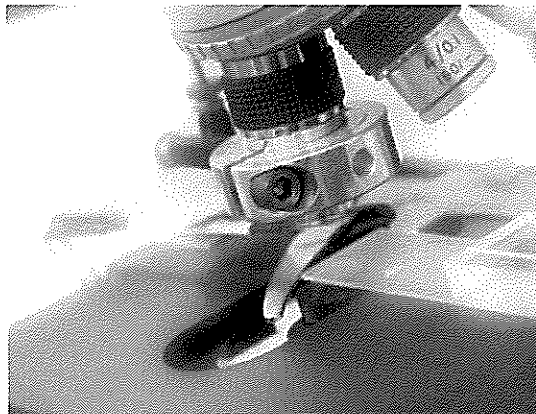
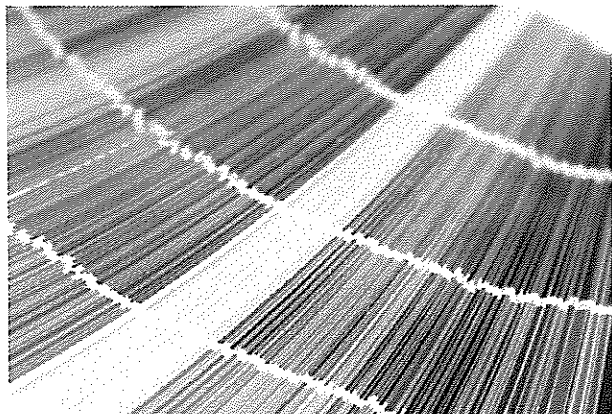
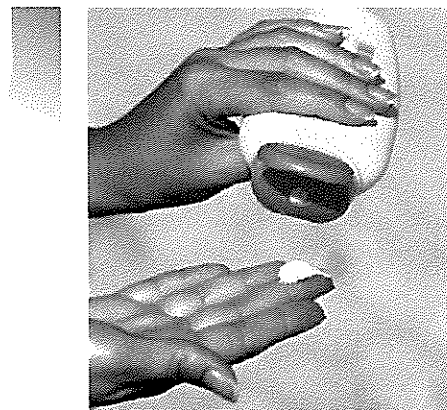
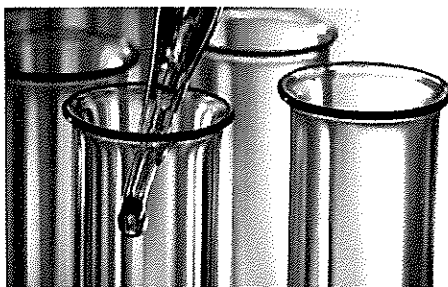
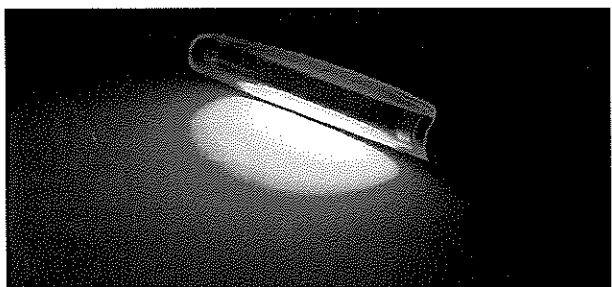


# ULTRAVIOLET LIGHT for precision research



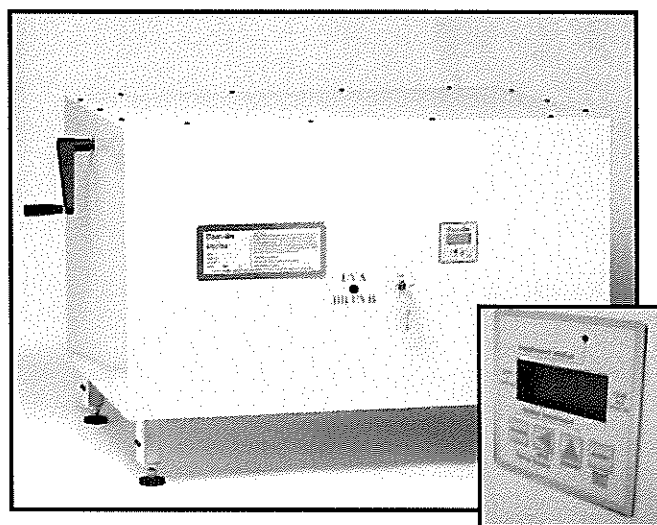
Daavlin's research irradiators are manufactured to provide a concentrated ultraviolet light source and are designed to easily accommodate a wide range of subjects, from small cell cultures up to medium-sized live animal models. This type of unit is an important tool in all types of UV and visible light research and testing. These UV Research Irradiators can be manufactured with either 24" (61 cm) or 48" (122 cm) (approx.) lamps. Available lamp types are UVA, Narrow Band UVB, or BroadBand UVB. Combination units using any two types of lamps are available as well, which allows for the setup of solar simulation experiments. Lamps of other wave ranges are also available upon request.

Daavlin's research irradiators are equipped with a sophisticated integrated dosimetry metering system called Flex Dosimetry which delivers the desired light dose with consistency and accuracy. Incorporating wavelength specific UV sensors to constantly monitor the lamps, Flex Dosimetry automatically compensates for any fluctuation in UV output from the device, ensuring consistent experimental conditions.

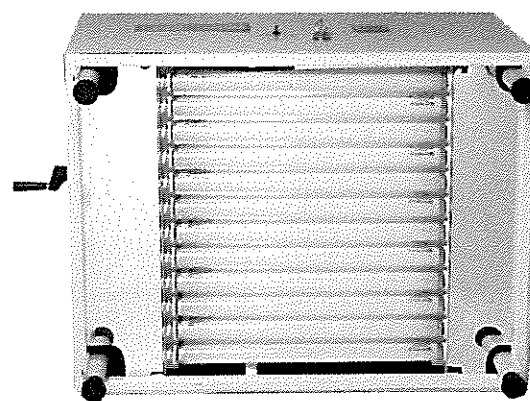
#### DIMENSIONS

24" unit - 36" (91.5 cm) long x 27 1/4" (69 cm) wide x 25" (63.5 cm) high  
48" unit - 52" (132 cm) long x 27 1/4" (69 cm) wide x 25" (63.5 cm) high

The usable radiation area beneath the lamps is approximately  
20" x 26" on the 24" unit and 40" x 26" on the 48" unit.

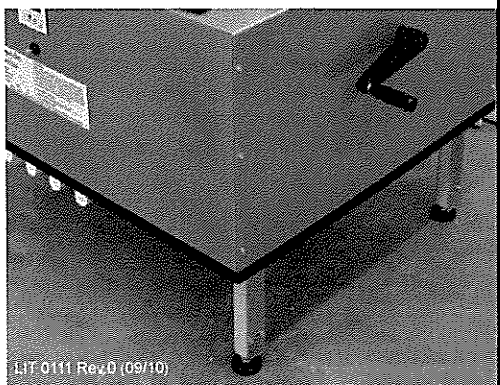


Bottom View



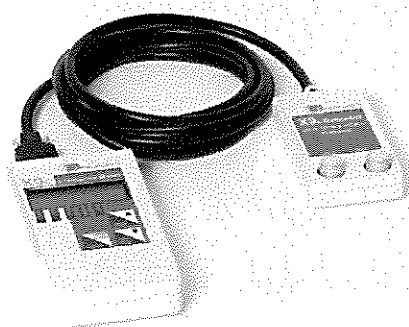
#### HEIGHT ADJUSTING LEGS

- The height from the irradiating surface to the lamps can be adjusted from 6" to 18" using hydraulic legs and a manual crank. An optional metal cart with castors allows the irradiating surface to be at a comfortable working height.



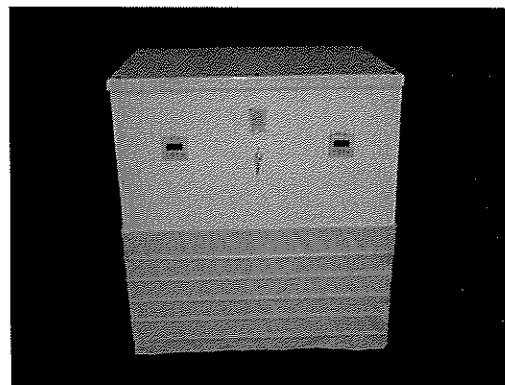
#### IRRADIANCE METER

- Our Flex Dosimetry system is calibrated at the distance you specify. If the height-adjustable legs are being used to vary the distance from the lamps to the subject being treated, the dosimetry system will require recalibration using our hand held UV meter.



#### UV BLOCKING CURTAIN

- A specially designed UV blocking curtain is used to prevent UV from radiating beyond the exposure area. It is attached with Velcro and adjusts in height along with the unit, providing both operator safety and simplified laboratory setup.



March 18, 2019



1. Daavlin's research irradiator is manufactured to provide a concentrated ultraviolet light source. It is designed to easily accommodate a wide range of subjects, from small cell cultures up to medium-sized live animal models including mice, rats, and pigs. This type of unit is an important tool in all types of UV and visible light research and testing. This UV Research Irradiator comes equipped with twelve 24" BroadBand UVB lamps. Daavlin's research irradiator is equipped with a sophisticated integrated dosimetry metering system called Flex Dosimetry which delivers the desired light dose with consistency and accuracy. The unit has an incorporated wavelength specific UV sensors to constantly monitor the lamps. The Flex Dosimetry automatically compensates for any fluctuation in UV output from the device, ensuring consistent experimental conditions. In addition to the BroadBand UVB lamps this unit will come with a X11 UVA NB BB meter and a research table.
2. Daavlin's research irradiator is the only phototherapy unit which allows for the setup of solar simulation experiments which is critical in the proposed study to induce the skin cancer basal cell carcinoma. It offers a true integrating dosimetry controller. Our system measures the flow of energy that is reaching the test subject by using an internal sensor. This assures consistent experimental conditions. This unit is also unique in that the height from the irradiating surface to the lamps can be adjusted from 6" to 18" using hydraulic legs and a manual crank. An optional metal cart with castors allows the irradiating surface to be at a comfortable working height. This unit is also unique in that it has a specially designed UV blocking curtain which is used to prevent UV from radiating beyond the exposure area. It is attached with Velcro and adjusts in height along with the unit, providing both operator safety and simplified laboratory setup.
3. To my knowledge, Daavlin is the only phototherapy manufacturer in the United State that offers a custom-built research irradiator using Broadband UVB lamps with true integrating dosimetry. This tool is used for very specific studies (sun-induced skin diseases) making the number of researchers using it limited therefore reducing the market size. This might explain the absence of other manufacturers for this unit. This irradiator delivers the desired light dose with consistency and accuracy. In addition, Daavlin's research irradiator is a versatile tool built to accommodate all types of UV and visible light research and testing including UVA and Narrow Band UVB. Daavlin has worked for many years with researchers from different research institutions (Please refer to publications) to design the units which will meet their specific needs. Certified Daavlin technicians will install and provide the appropriate training for the use of the unit. The unit could be adapted for other types of studies such as combination units using any two types of lamps which allows for the setup of solar simulation experiments. Lamps of other wave ranges are also available upon request.
4. Daavlin offers a wide variety of phototherapy devices for both clinical and in-home use. However, since the market size for research irradiators is very limited, we normally do not stock an inventory of these devices. Since this is a custom-order device, we require our production manager to allocate an individual normally assigned to build clinical phototherapy units to dedicate whatever



time is necessary to custom build this unit. This includes designing/ fabricating the actual components of the unit. The price of the different components of the unit has been well studied over the years and correlates well with the time/cost for building the unit compared to the price of other phototherapy devices offered by Daavlin.

5. For a first time buyer, we have extended a special pricing for the University on the Research Unit 24" X 305-12 110-120V 60Hz with a discount of \$1,000.00 (from \$10, 500.00 to \$9,500.00). We have also extended a 50% discount on the delivery, installation, and training service by a Daavlin Service technician (from \$1,000.00 to \$500.00). We have kept this price as low as possible considering that this unit is custom made, very versatile and is made to accommodate a varied range of subjects. It can be equipped with all types of UV light for other studies as needed. Moreover, it is equipped with wavelength specific UV sensors to constantly monitor the lamps and a Flex Dosimetry to automatically compensate for any fluctuation in UV output from the device, ensuring consistent experimental conditions. This makes the device a very reliable research tool to study simulate solar radiations.

Sincerely,

David Frazer  
Clinical Sales Director