



# ACCU-CAL™ 50

Radiometer User Guide





## About Dymax

UV/Visible light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial, light-curable, epoxy, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic fluid dispensing systems, and light-curing systems. Light-curing systems include LED light sources, spot, flood, and conveyor systems designed for compatibility and high performance with Dymax adhesives.

Dymax adhesives and light-curing systems optimize the speed of automated assembly, allow for 100% in-line inspection, and increase throughput. System designs enable stand-alone configuration or integration into your existing assembly line.

Please note that most dispensing and curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application, and use is strictly limited to that contained in the Dymax standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to ensure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation by offering equipment trial rental and leasing programs to assist in such testing and evaluations. Data sheets are available for valve controllers or pressure pots upon request.

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# Introduction

The enclosed ACCU-CAL™ 50 UV Radiometer was developed and manufactured by the Dymax team, driven by a desire to best serve your needs. Before shipping, your ACCU-CAL™ 50 Radiometer was calibrated and tested against standard UV light sources to ensure accurate performance.

The operation of this radiometer in conjunction with a UV light-curing system will maximize safety and user-friendly performance and provide optimum yield of your technological process.

Therefore, we encourage you to read, understand, and follow all safety and operating instructions and recommendations compiled in this and other related manuals prior to setting up and operating this instrument and any associated UV light-curing systems.

If you encounter a problem or have any questions, please contact our Technical or Customer Support Departments at 860-482-1010. Trained Dymax professionals are standing by to serve you.

Par conséquent, nous vous encouragez à lire, comprendre, et suivre tout sécurité et instructions d'opération et conseils rédigés dans cette et autres manuels établis avant de mettre en place et de faire fonctionner ce nouveau système de lampe de tâche ou ces composants individuels.

Si vous rencontrez un problème, avez n'importe de questions, ou si vous voudrez de nous aider avec vos suggestions ou conseils, s'il vous plaît contactez notre département technique ou service client à 860-482-1010. Dymax formés professionnels attendent à vous servir.

## Safety

### General Safety



**WARNING!** This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

**CAUTION!** Always wear protective goggles or face shield when working near the front of any unit which emits UV light! The rear of some units also emit stray UV light.

**WARNING!** Always observe safety requirements!

**PRÉ-CAUTION!** Toujours faire de l'usage des lunettes de protection ou protéger de visage marche près du devant d'éléments!

**PRÉ-CAUTION!** Risque de décharge électrique quand le couvercle est enlevé!

**ACHTUNG!** Tragen Sie immer eine Sicherheitsbrille oder einen Gesichtsschutz, wenn Sie nahe an der UV Lichtquelle arbeiten. Die Rückseite des Gerätes emittiert gestreutes UV Licht!

**WARNHINWEIS!** Bitte beachten Sie immer die Sicherheitshinweise!

## Safety

The ACCU-CAL™ 50 Radiometer is designed to be used in conjunction with Dymax UV light-curing equipment that is properly set up, with components correctly connected, and operated in accordance with **relevant** instructions.

### Safety Recommendations:

When working with UV light sources, use the goggles provided, or a face shield approved for UV protection to protect your eyes.

Long-sleeved shirts, or a lab coat, are recommended to protect the arms, and use of UV opaque gloves will protect the hands.

## Sécurité

L'équipement être conçu pour être utilisé correctement constituer, avec composants brancher correctement, et marché en conformément avec instructions important. Le plan états développer pour rendre au maxime opérateur sécurité et minimiser exposition à ultraviolette.

### Recommander de sécurité:

Emploi lunettes, ou un protéger de visage pour protection de ultraviolet pour protéger vous yeux.

Chemises à manche long, ou manteau de labo, sont recommander pour protéger les bras, et utilisation de ultraviolette gants opaque vais protéger les mains.

## Sicherheitshinweise

Dieses Gerät wurde so entwickelt, dass es nur vollständig, alle Komponenten korrekt miteinander verbunden, in Übereinstimmung mit relevanten Instruktionen betrieben wird. Bei der Entwicklung wurde weiterhin großen Wert auf die Benutzersicherheit und minimale UV Belastung gelegt.

### Sicherheitshinweise:

Tragen Sie immer die mitgelieferten Sicherheitsbrille oder speziellen Gesichtsschutz, der Ihre Augen vor UV Licht schützt.

Wir empfehlen Langarm - Hemden oder einen Laborkittel zu tragen, um die Arme zu schützen. Für die Hände empfehlen wir UV- geblockte Handschuhe.

## Product Overview

The ACCU-CAL™ 50 Radiometer is a microprocessor-based measurement instrument designed to measure UVA radiation in the range of 320-390 nm.

The ACCU-CAL™ 50 uses two AA batteries.

### Environmental Considerations

- Optical measurement instruments are sensitive to extremes in environmental conditions like high temperature, humidity, and contamination. Protect the device and its detector(s) from high humidity, high temperature, direct sunlight, and contamination.
- Do not use the ACCU-CAL™ 50 immediately after moving it from a cold to a warm environment. Under certain circumstances, condensation could develop and may cause inaccurate measurement results. Allow the device to adjust to room temperature before use.
- Do not use the ACCU-CAL™ 50 in powerful magnetic, electromagnetic, and electrostatic fields. These disturbances may influence measurement results.

# Unpacking

When your radiometer arrives, inspect the box for damage and notify the shipper of box damage immediately.

Open the box and check for equipment damage. If parts are damaged, notify the shipper and submit a claim for the damaged parts. Contact Dymax so that new parts can be shipped to you immediately.

Check that the parts included in your order match those listed below. If parts are missing, contact your local Dymax representative or Dymax Customer Support to resolve the problem.

**Figure 1.**  
Spot Radiometer (PN39560)



**Figure 2.**  
Flood Radiometer (PN39561)



## Parts List - Spot Configuration

- ACCU-CAL 50 Radiometer
- ACCU-CAL 50 Radiometer User Guide
- 3-mm, 5-mm, 8-mm Adapters
- Lightguide Simulator (PN 38408)

## Parts List - Flood Configuration

- ACCU-CAL 50 Radiometer
- ACCU-CAL 50 Radiometer User Guide

**Note:** The ACCU-CAL™ 50 Radiometer detector and optometer are calibrated together and are a matched pair. Switching the detector or optometer to pieces which were not calibrated as a matched pair will lead to inaccurate readings.



# Operation

1. The ACCU-CAL™ 50 Radiometer may be used to measure UV intensity from Flood Lamps or UV intensity from the end of a 3-mm, 5-mm, or 8-mm lightguide used with a Spot Lamp. For Flood Lamp use, attach the Detector to the Radiometer as shown in Figure 3.
2. For Spot Lamp use, select an Adapter that matches the size of the Lightguide that is installed on the Spot Lamp. 3-mm, 5-mm, and 8-mm Adapters are available.

*Note: Lightguide Adapters are included in the spot version (PN 39560) of the ACCU-CAL™ 50 or available separately.*

3. Install the Lightguide Adapter on the end of the Detector using the two, 2 mm screws provided.
4. Attach the Lightguide Adapter to the Spot Lamp Lightguide by inserting the Lightguide into the Lightguide Adapter until it bottoms out. Tighten the set screw when the Lightguide is installed.
5. Press and release the On/Off Key on the Face Plate to turn the Radiometer on and off.
6. Press and release the Light Source Key to select the light source being measured. The different light source options are:
  - **Flood Lamp** - For use when measuring UV intensity of a flood-lamp light source.
  - **3-mm Lightguide** - For use when measuring UV intensity at the end of a 3-mm lightguide.
  - **5-mm Lightguide** - For use when measuring UV intensity at the end of a 5-mm lightguide.
  - **8-mm Lightguide** - For use when measuring UV intensity at the end of a 8-mm lightguide.
7. Press and release the Mode Key to select an operating mode. The different operating modes are:
  - **Peak Intensity** - Shows the highest UV intensity in  $\text{mW}/\text{cm}^2$  seen by the detector during the measurement.
  - **Intensity** - Shows the UV intensity in  $\text{mW}/\text{cm}^2$  at the detector during the measurement.
  - **Dose** - Shows the total UV dose in  $\text{mJ}/\text{cm}^2$  at the detector during the measurement.

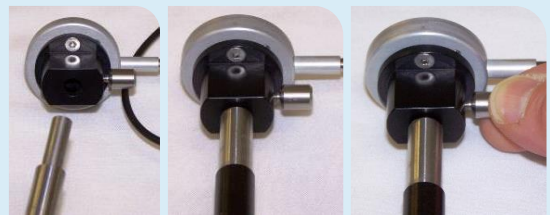
**Figure 3.**  
Radiometer with Detector



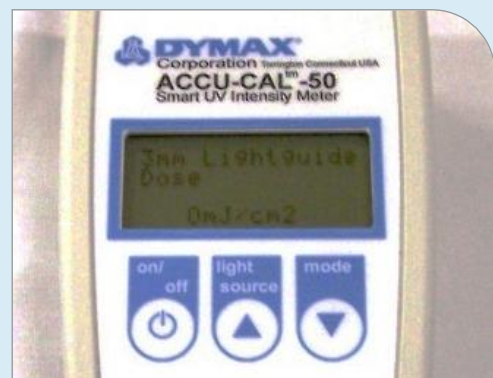
**Figure 4.**  
Adapter Installation



**Figure 5.**  
Attach Lightguide Adapter to Lightguide (Step 4)



**Figure 6.**  
Face Plate



# Maintenance

The ACCU-CAL™ 50 was designed to operate with minimum maintenance. Follow the schedule below to assure top unit performance.

- Calibrate the instrument at least annually. Calibration service is available through Dymax Customer Service or Dymax Product Repair.
- Change the batteries when a low battery warning is received. The ACCU-CAL™ 50 uses two AA-type batteries. The battery compartment is on the back of the instrument.
- Keep the detector head's sensing element clean and free of contaminants. The detector head may be cleaned with a clean tissue wetted with isopropyl alcohol.
- To increase battery life, turn unit power off after use. The unit will not automatically power off.

**Figure 7.**  
Battery Compartment (Closed & Open)



# Spare Parts and Accessories

Item	Part Number
Adapter Kit – Flood to Spot Model (includes parts listed below)	39554
Lightguide Simulator	38408
8-mm Lightguide Adapter	39558
5-mm Lightguide Adapter	39557
3-mm Lightguide Adapter	39556

# Specifications



Property	Specification
Power	Two AA size batteries
Display	LCD Graphic Display 97x 32 Pixel Display area: 0.56 in x 1.41 in (14.3 mm x 35.8 mm)
Detector Interface	9-Pin MDSM9 socket, 4 inputs
Measurement Ranges	Four modes of operation Auto range within each operating mode
Front Panel Control	3 buttons
Temperature	Operating: 5 to 40°C Storage: -10 to 50° C
Size	5.71 in x 2.48 in x 1.18 in (145 mm x 63 mm x 30 mm)
Weight	0.33 lbs (150 g)



# Warranty

From date of purchase, Dymax Corporation offers a one-year warranty against defects in material and workmanship on all system components with proof of purchase date.

Unauthorized repair, modification, or improper use of equipment may void your warranty benefits. The use of aftermarket replacement parts not supplied or approved by Dymax Corporation will void any effective warranties and may result in damage to the equipment.

***IMPORTANT NOTE: DYMAX CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON DYMAX EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM DYMAX. THOSE CORRECTIVE ACTIONS LISTED ABOVE ARE LIMITED TO THIS AUTHORIZATION.***

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