

# Paradigm™

## LED Curing Light



## Technical Data Sheet

### Introduction

Light curing of resin-based adhesives, filling materials and cements is an essential part of daily clinical practice—so an LED curing light is one of the most used devices in the dental operator. Clinical longevity of restorations is based on reliable materials and devices; an inadequate cure has negative effects on physical and chemical properties of the restoration material, leading to failure of the final results due to marginal defects, secondary caries or restoration fracture.

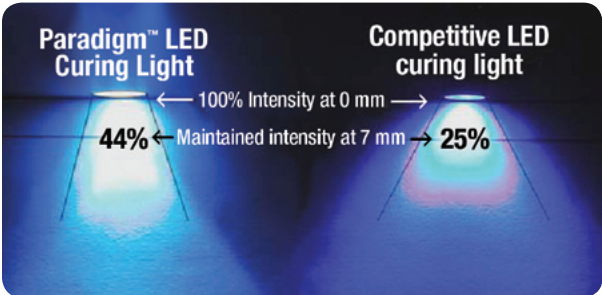
**The Paradigm™ LED Curing Light from 3M ESPE offers all the features you need.**

- **High intensity of 1200 mW/cm<sup>2</sup>** for fast and complete curing.
- **Special optics for up to 5 times more intensity** at the clinically relevant distance of 7 mm compared to leading devices tested.
- **Wide 10mm light guide** that illuminates up to 80% more curing surface compared to traditional devices tested.
- **Long-life, high-performance Li-ion battery**, that provides 60 minutes of cure time with a single charge.
- **Consistent light output** throughout the lifetime of the battery, irrespective of the level of battery charge or number of curing cycles.

# Fast, reliable and effective curing

## Special optics deliver a more focused light output.

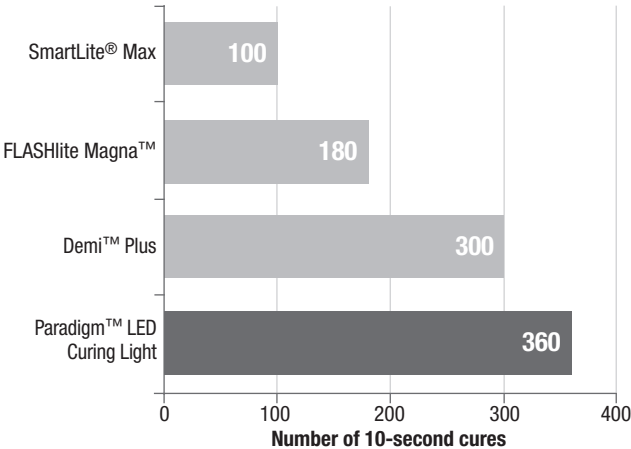
Light beams do not come out in parallel, but spread out with a certain angle. With increasing distance from the light guide tip to the restoration surface, the same amount of light is spread over a larger surface. As a result, the intensity drops. The Paradigm light is optimized to maintain a high intensity even at the clinically relevant distance of 7 mm.



**Fig. 1: Photograph of the streak light on paper of the output beams of the Paradigm™ LED Curing Light and a competitive LED curing light (8mm light guide). The beam from the Paradigm light has a smaller angle of beam spread, resulting in a higher maintained intensity at a 7 mm distance.**

Source: 3M ESPE internal data

## High performance Li-ion battery technology offers more 10-second cycles than competitor lights tested.

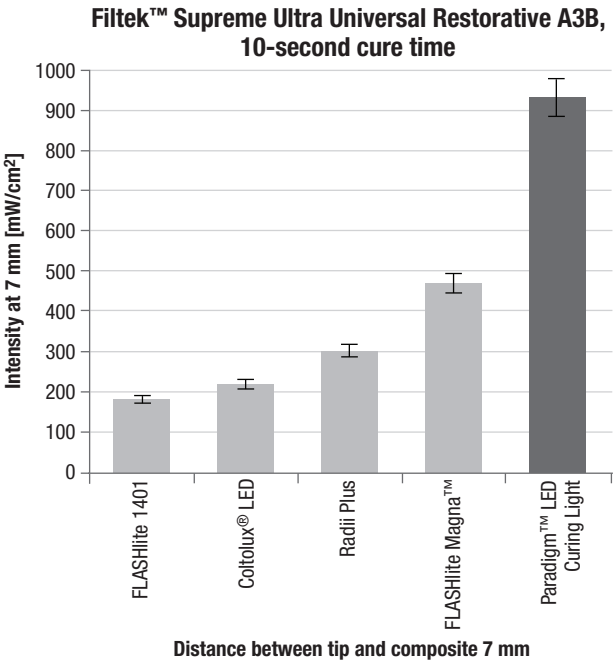


**Fig. 2: The Paradigm™ LED Curing Light provides up to 3.6 times more curing time compared to leading devices tested. A new fully charged battery provides at least 60 minutes of cordless use before recharging.**

Source: 3M ESPE internal data

## A more focused light output results in a higher intensity at clinically relevant distances.

The best curing technique requires positioning the light guide as close as possible to the dental material in order to maximize light intensity. In some clinical situations—like curing the bottom layer in a deep cavity—close positioning is not possible. In that case, a typical distance between the light guide and material may be about 7 mm.



**Fig. 3: Paradigm™ LED Curing Light achieves a significantly higher intensity at a clinically relevant distance of 7 mm compared to other leading devices tested.**

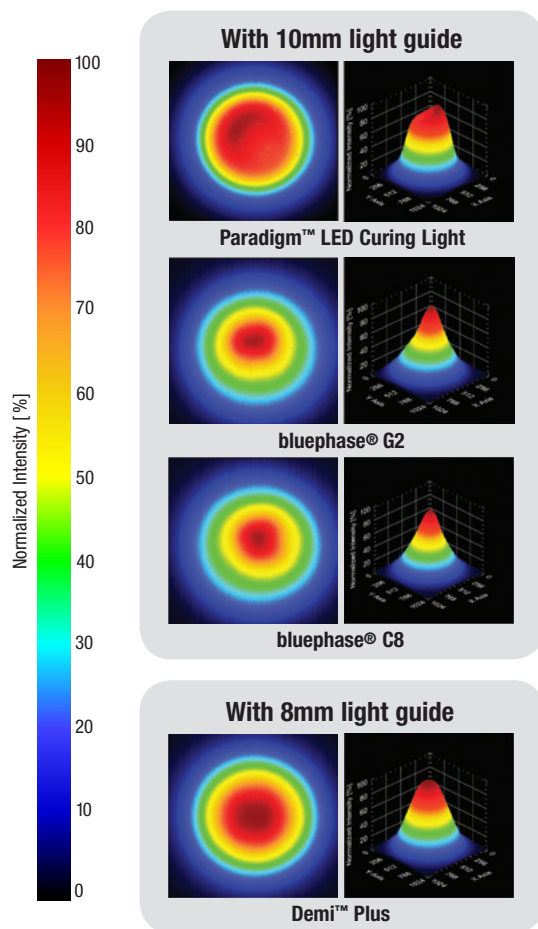
Source: 3M ESPE internal data

# Redefining depth of cure

## Effective intensity distribution from center to rim.

The Paradigm light provides reliable curing results as the special optics cover a large curing area with a uniform intensity distribution at a clinically relevant distance of 7 mm. This is a prerequisite for completely cured restorations.

## Intensity at 7 mm distance

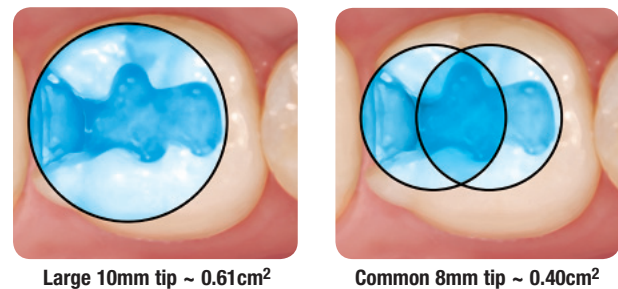


**Fig. 4:** The images show clearly that the Paradigm™ LED Curing Light delivers a more consistent intensity distribution across the illuminated surface at a 7 mm distance resulting in a more effective light output (see the extent of red areas with highest intensity).

Source: 3M ESPE internal data

## The wide 10mm light guide covers a large illumination surface.

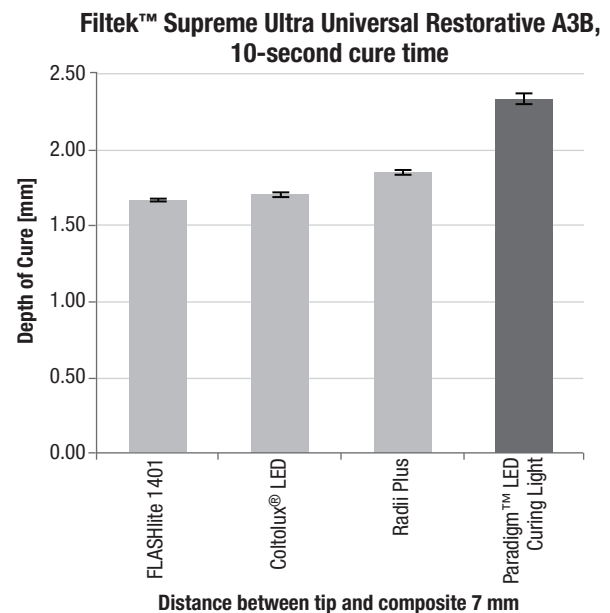
The 10mm Paradigm light guide offers up to 80% more illumination surface compared to leading devices tested. That makes it possible to cure larger restoration surfaces in one shot.



**Fig. 5:** Illustration of a clinical situation: Curing of a large Class II cavity in a typical lower molar. The Paradigm™ LED Curing Light offers more illumination surface, allowing the full cavity surface to be cured in one shot.

Source: 3M ESPE internal data

## All of this translates into a greater depth of cure.



**Fig. 6:** Paradigm™ LED Curing Light achieves the highest depth of cure among tested devices at the clinically relevant distance of 7 mm.

Source: 3M ESPE internal data

# Designed for maximum efficiency

The Paradigm™ LED Curing Light offers all the features you need.

- **Simple, intuitive 2-button operation** with one cure mode for all indications.
- **Multiple-setting light timer** with easy, push-button control offers preset cure times of 5, 10, 15 and 20 seconds, a continuous 120-second mode, and tack-cure mode.
- **Tack-cure function allows predictable curing** with reproducible short light pulses produced by simply keeping the start button pressed.
- **Lightweight, ergonomic “V-shape” design** provides a comfortable grip that best fits your technique.
- **Durable resin housing** is made of shatter-proof, high-performance plastic.
- **Fan-free** for silent operation.
- **Vent-free housing** for fast and easy disinfection.



## TECHNICAL DATA

<b>Power supply</b>	Built-in Lithium-ion battery, exchanged through Customer Care Center
<b>Utilizable wavelength range</b>	430-480 nm
<b>Wavelength peak</b>	455 nm $\pm$ 10 nm
<b>Light intensity</b> (between 400 and 515 nm)	1200 mW/cm <sup>2</sup> -10%/+20% (independent of battery power level)
<b>Optically active light emission area</b>	60-65 mm <sup>2</sup>
<b>Timer settings</b>	5, 10, 15, 20 seconds, continuous mode (120 sec) and tack cure mode
<b>Total exposure time</b> (new, fully charged battery)	Typically 60 minutes
<b>Charging time empty battery</b>	Approximately 120 minutes
<b>Continuous runtime until thermal safety shutdown</b>	Typically 7 minutes at room temperature of 73.4°F (23°C)
<b>Dimensions</b>	Diameter 1.10 in (28 mm), length 10.63 in (270 mm)
<b>Weight</b>	.40 lb (180 g) (including light guide)

Customer Care Center: 1-800-634-2249 [www.3MESPE.com](http://www.3MESPE.com)

## 3M ESPE

### Dental Products

3M Center  
Building 275-2SE-03  
St. Paul, MN 55144-1000  
U.S.A.  
1-800-634-2249

### 3M Canada

Post Office Box 5757  
London, Ontario N6A 4T1  
Canada  
1-888-363-3685

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