

Members Present: Drs. Erica Teixeira (Chair), Zeina Al-Salihi, Manuel Gomez, David A. Jones, Leo Marchini, Rodrigo Rocha Maia, Kyle Stein, Marcos Vargas, Theodoros Katsaros, John Syrbu, Ron Elvers, Mr. Charles W. McBrearty, Kyle Nicholson (D3) and Elliott Glenn (D4)

Absent: Drs. Piriya Boonsiriphant, Patty Meredith, Trishul Allareddy, Lily T. Garcia, Galen B. Schneider and Mr. Ivan Medin

Guest: Dr. Steven Armstrong and Mr. Curtis Iburg

Meeting called to order 12:03 p.m.

- I. **Approval of October 11, 2017 minutes** – Dr. Erica Teixeira
MOTION: to approve the minutes as submitted and seconded.
MOTION APPROVED.

- II. **Technology Request for Dental Curing Lights** – Dr. Steven Armstrong (see attachment)

- A. Mr. Justin Bringman requested faculty review due to dated, limited available dental curing lights. Dr. Armstrong shared his PowerPoint presentation; the first image has a link to learn more information about curing lights available at the CoD.
- Dr. Armstrong brought two compact LED curing lights from 3M and Ultradent (Valo Grand). Dr. Armstrong reviewed materials and concluded that the Valo model is the best option; the unit has a holder and rechargeable batteries. 3M is the second choice.
 - Dr. Armstrong stated the paddle is the best form of blue light blocker. In the future, blue light blocker protective glasses for patients should be looked into for safety matters.
 - Recent improvements in LED curing lights have occurred requiring less maintenance, although have a higher cost. Halogen curing lights are no longer manufactured.
 - The possibility of requesting purchase of fewer units was considered since these are better quality curing lights and could be dispensed to monitor and disinfect properly was discussed. Alcohol wipes at the stations and plastic sleeves can be used to aid in proper infection control as well.
 - Mr. Curtis Iburg did not think it would be feasible to dispense the curing lights, as the dispensaries are managing at capacity at this time.
 - A task force for implementation plans and to determine quantity needed was suggested. Members of the task force include Curtis Iburg, Justin Bringman, Dr. Elvers (lead), Dr. Rocha Maia, Dr. Armstrong, Dr. Vargas, Dean Arneson (look at paddles too); anticipate a decision made by December 2017 or January 2018 at the latest.

ACTION ITEM: Task Force appointed to determine implementation and purchase plan for LED Curing Lights. Task force includes – Drs. Elvers, Rocha Maia, Armstrong, Vargas, Dean Arneson, Curtis Iburg and Justin Bringman. Decision to be brought to committee no later than January 2018 meeting.

MOTION: approve the CoD transition to use of LED dental curing lights.
MOTION APPROVED.

MOTION: At this time, based on the dental curing lights current available on the market and their characteristics the recommended choice of unit for the CoD would be Valo Grand (Ultradent).
MOTION APPROVED

III. **CEREC Training – Review Applications** – Dr. Erica Teixeira

- A. Applicants
 - Dr. Barwacz – Family Dentistry *
 - Dr. El-Kerdani – Prosthodontics – Grad Courses *
 - Dr. Gasparoni – Admissions and Faculty General Practice
 - Dr. McKnight – Oral Diagnosis, Admissions, Faculty General Practice
- B. Three questions must be addressed in application for a basic course:
 - Brief description of why the training is necessary.
 - In which courses/capacities the training will be used.
 - Applicants agree to present a summary of learning outcomes from the course
- C. Silent vote ballot was handed out to the committee and Drs. Barwacz and El-Kerdani were selected to attend the CEREC Basic Training.

ACTION ITEM: Dean Garcia to send notification to selected individuals.

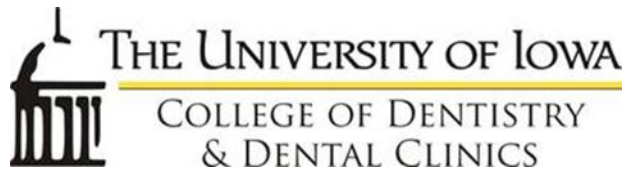
IV. **D3 Interest in Electric Handpieces** – Drs. Erica Teixeira and Lily T. Garcia

D3 Students would like to be exposed to the new electric handpieces. It was discussed that there may be a possibility in the 4th year during DAU to try using an electric handpiece on a patient under faculty observation. There is no guarantee that they could use the electric handpiece daily, but 1-2 times to be exposed to the new technology. The students must be aware that they may not be able to use electric handpieces on their boards.

The chance of being exposed to electric handpieces in the senior year seemed to be appropriate, rather than implementing during the D3 year due to the fact that the students are in a block rotation. Student's representatives were in agreement that having exposure during senior year would be acceptable.

Next Meeting: Monday, December 13, 2017

Minutes recorded: Ms. Lauren Moniot



Technology Request Form for Patient/Simulation Clinic (Includes Software Installation)

Faculty/Department Requesting: On behalf of COD/Armstrong/Operative

Technology (Equipment/Software) Name: dental curing lights for COD

SEE APPENDIX FOR SPECIFIC INFORMATION

Vendor Contact Information: Ultradent; 3M ESPE; Ivoclar vivadent

RETURN COMPLETED FORM TO CHAIR, HEALTH TECHNOLOGIES COMMITTEE

- I. Brief description of the purpose of the technology and how it will be used (consider potential learning outcomes, patient care benefits, utility, quality, acceptance and longevity):
To replace existing curing lights as they become unusable
- II. In what location(s) is the technology to be installed?
Sim and dental clinics
- III. Who is responsible for maintaining software/hardware updates?
NA

Skip questions IV - IX if requested technology not software related:

- IV. Hardware specification requirements
- V. How is the software licensed (dongle, PC based, server based)?
- VI. Does the use of the software involve patient protected health information?
- VII. Does the use of the software involve sending data outside the College of Dentistry? Explain.
- VIII. Does the software integrate with axiUm or MiPACS?
- IX. Does the software require workstation administrator rights to run?
- X. Will the Vendor require remote access? no
- XI. Evidence: Please include evidence available and/or best practices
- XII. Training: Is there a plan for training (student/faculty/residents/specify users)?
Straightforward can be done by posting materials online and reviewing in clinical courses
- XIII. Cost: How much will it cost? Include any annual maintenance/upgrade fees.
 - ~ \$600 – 1200/unit
 - Rechargeable battery systems have potential for degrading and malfunctioning

- Disposable battery system in Valo Grande is common and inexpensive
- Recommend comprehensive discussions regarding number of lights needed to purchase and where they are placed/dispensed as cost will increase significantly from prior QTH models (Demitron LC).
- Additional considerations that can effect cost:
 - o Blue light blocking patient and operator protective eyewear and shields
 - o Daily light output monitoring devices (recommend one in each dispensary)
- a. if supported by grant or external funding, include account and PI name:
- b. if a "Gift in Kind" or "Preferred Development Agreement", please see Dean Arneson and include with request form (yes/no/not applicable).

XIV. Company characteristics (include name, reason for choice, alternative if company goes out of business, representative contact):

All listed companies have good reputations

XV. Self-bias or possible conflict of interest:

none

X. Implications for Curriculum – specify if related to predoctoral and/or advanced education curriculum:

- a. Identify area of curriculum incorporation: Predoctoral and/or Advanced Education Program(s)
all
- b. Responsible individual to submit proposal into existing course or creation of new course:
Armstrong and existing clinical faculty
- c. Curriculum proposal for submission to Curriculum Committee for review (include course no.):
No significant changes to curriculum

Faculty Signature: _____ Date: _____

DEO Signature: _____ Date: _____

Form should be submitted to HTC Chair

INTERNAL USE ONLY

Technology & Media Services Review: [Click here to enter text.](#)

Central Sterilization Services Review: [Click here to enter text.](#)

Health Technologies Committee Approval: [Click here to enter text.](#)

Office for Education Approval: [Click here to enter text.](#)

Office for Finance & Facilities:

Business Associates Agreement required (yes/no): [Click here to enter text.](#)

Business Associates Agreement on file (yes/no): [Click here to enter text.](#)

Purchasing Contract/PO Information: [Click here to enter text.](#)

1ST choice: Valo Grande (Ultradent Products, Inc.) with intermediate and high level settings removed at factory.

2nd choice: Elipar DeepCure-S (3M ESPE)

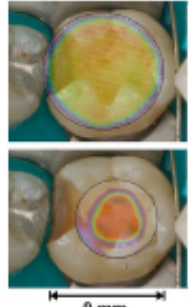
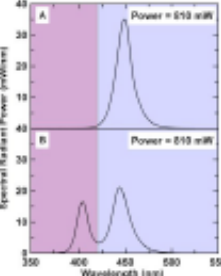
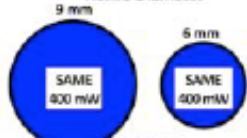
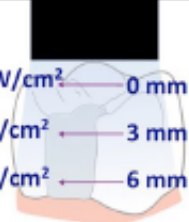
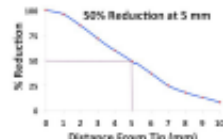
3rd choice: Paradigm DeepCure LED (3M ESPE)

4th choice: Bluephase Style (Ivoclar Vivadent) LATEST MODEL only!

Dental Curing lights partial list of considerations for purchase:

1. Exitant irradiance from 500-2000 mW/cm² [amount of light out of tip]
2. Known spectral irradiance that covers photoinitiators of materials used in clinics
3. Low drop off in measured incident irradiance (mW/cm²) over distance
4. Large effective tip diameter
5. Homogenous light delivery
 - a. Amount of light across tip [uniform exitant irradiance]
 - b. Type of light across tip [uniform spectral irradiance]
6. Ability to be covered with protective sleeve that
 - a. Covers entire handled surfaces
 - b. Does not significantly reduce light output
 - c. Can be form fitted to tip so that it does not interfere with composite placement
 - d. Can be placed so that seam is not over light tip
7. Electronics that provide full light delivery until battery system is exhausted
8. Consistent light delivery over repeated uses
9. Known spectral irradiance
10. Dependable chargeable battery system or common disposable batteries
11. Ability to be positioned perpendicular over restoration in patients with limited opening
12. Low heat output
13.

Tips To Help You Choose Your Next Curing Light in 2015

? Has the light been independently tested and approved for use in your country?	For example does it have the CE mark?  
? Does it come with support, contact information, and a warranty? Can it be easily disinfected? Does the light feel robust?	   Easily cleaned
? When measured accurately, does the light deliver at least 500 mW/cm² in standard mode? Unless they are matched to a specific resin system, be wary of lights delivering > 2,000 mW/cm² or offering exposure times less than 10 seconds.	
? Will the curing light tip cover most of your restorations, or will overlapping exposures be required? Ideally light manufacturers should show that their light delivers a wide and uniform light output without irradiance 'hot' or 'cold' spots.	 Wide tip with a uniform output  Small tip with 'hotspots' of high irradiance  Irradiance (mW/cm²) 9 mm
? Ask the resin manufacturer if a single peak LED curing light is sufficient, OR: Would a broad- spectrum multi-peak curing light be beneficial to activate the photoinitiators used in their resins?	 SINGLE PEAK (all blue LEDs) are most effective on camphorquinone MULTI-PEAK (blue and violet LEDs) can activate both camphorquinone and alternative photoinitiators
! Irradiance = Power/Area A low power (Watts) light can still deliver a high irradiance (mW/cm²) if a small tip is used.	Active Diameter  Decreasing tip diameter by 3-mm can double the average irradiance 630 mW/cm² 1,415 mW/cm²
! Choose a light that reports the least reduction in irradiance as the distance from the tip increases.	REDUCTION  0% 1400 mW/cm² — 0 mm 50% 700 mW/cm² — 3 mm 75% 350 mW/cm² — 6 mm
! Learn how to increase exposure time to compensate for the decrease in irradiance as distance between light tip and resin increases.	A 50% reduction in irradiance requires double the exposure time 



VALO[®]
GRAND

The VALO GRAND logo is centered on the image. It features the word "VALO" in a large, white, sans-serif font with a registered trademark symbol. Below it, the word "GRAND" is written in a smaller, white, sans-serif font inside a white rounded rectangular bar. The logo is superimposed on a black, vertical, tapered object that resembles a dental handpiece. The top of this object is a circular lens that glows with a bright blue light, revealing a stylized, glowing blue insect-like shape inside. The background is dark blue with large, out-of-focus circles and a horizontal band of orange and yellow light at the bottom.

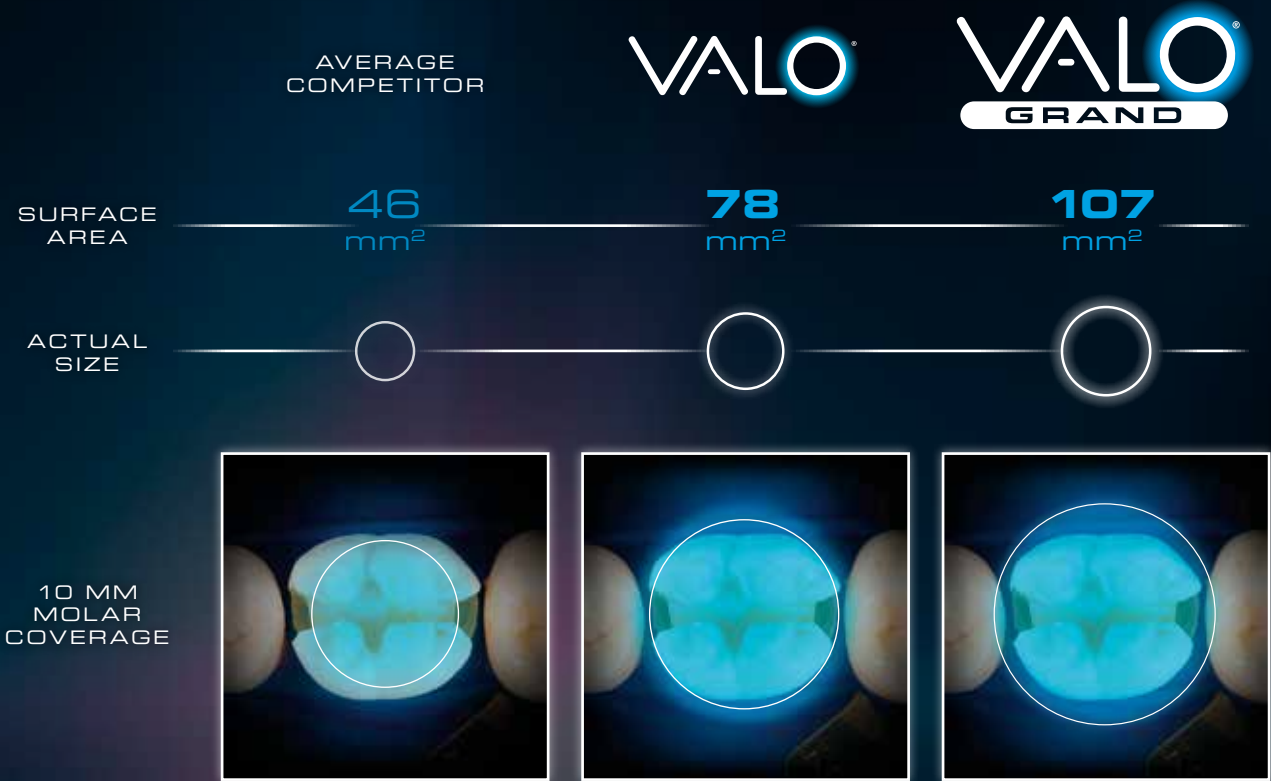
ECLIPSING THE COMPETITION.

 **ULTRADENT**
PRODUCTS, INC.

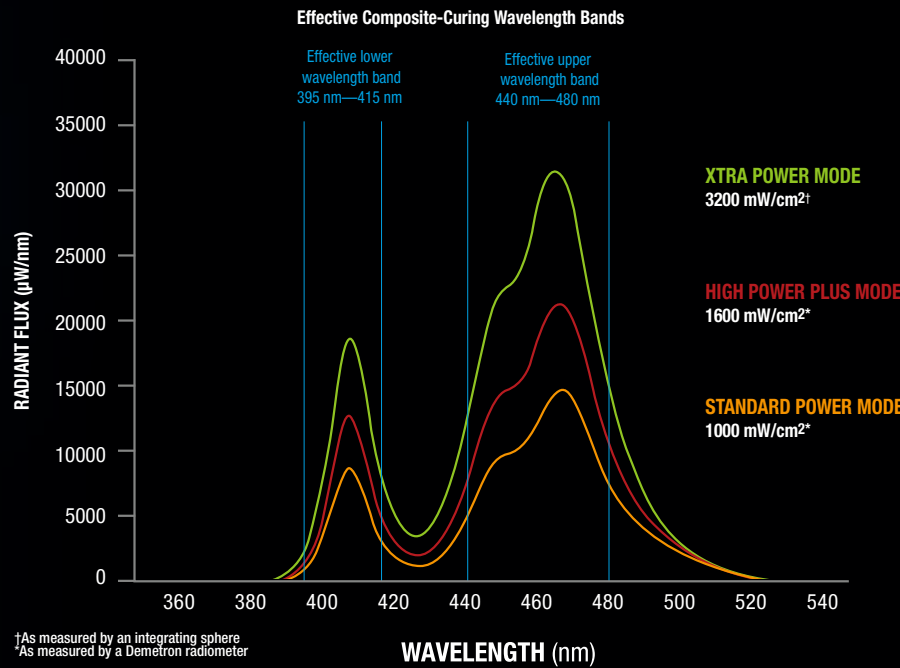
The Ultradent logo is located in the bottom right corner. It consists of a stylized "U" icon followed by the text "ULTRADENT" in a bold, sans-serif font, with "PRODUCTS, INC." in a smaller font below it.

WHAT ARE YOU MISSING?

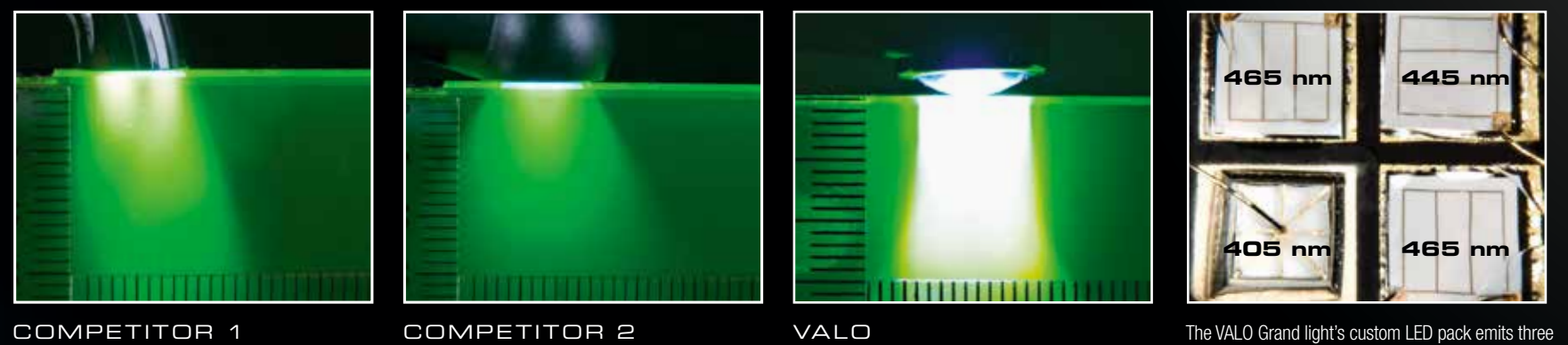
When it comes to curing, the circumstances aren't always ideal. Squirming patients, sectional bands blocking the light from getting to the entire restoration, even a simple hand movement can prevent a complete cure. That's where the VALO Grand curing light comes in. The VALO Grand light has a large 12 mm lens that allows you to cover more area in a single cure. With the VALO Grand light, you won't miss a thing.



POWERFUL BROAD-SPECTRUM CURING



A lot of curing lights only have a single LED chip that operates on one wavelength. This can create hot and cold spots in the beam, which makes uniform curing nearly impossible. The original VALO curing light was created to answer that problem. With four powerful LEDs that deliver a uniform light over a broad spectrum, you know that you are getting a powerful, uniform cure that will last. The VALO Grand has that same uniform power you expect, plus a larger lens.



Unlike the intense collimation the VALO light offers, competitor lights produce beams that are uneven or dissipate even at distances as short as 4 mm.

The VALO Grand light's custom LED pack emits three wavelengths, enabling the light to activate camphorquinone and the entire range of proprietary photoinitiators.

ENGINEERED FOR DURABILITY

A curing light is an essential part of the office. So when they are fragile and break easily, it can be frustrating. All of our VALO curing lights are created from solid bars of high-grade aerospace aluminum, making any VALO light virtually indestructible. You won't have to worry about accidentally knocking it off of the tray onto the floor—the VALO Grand curing light can handle it.

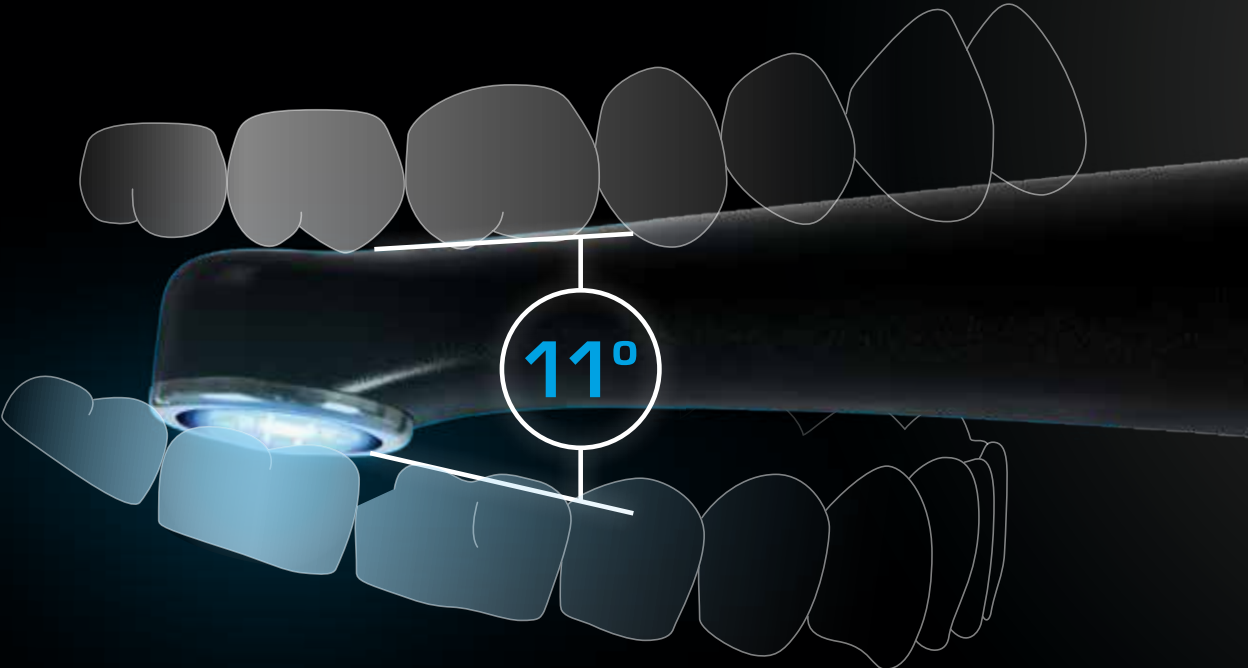


With unibody construction from a solid bar of tempered, high-grade, aerospace aluminum, the VALO curing light may be the most durable curing light in the world.



UNMATCHED ACCESSIBILITY

Properly positioning a curing light can be difficult when the restoration is located in the back of the mouth. A patient can only open their mouth so wide, and if you can't get the light over the restoration, you face either having a poor cure or making the patient uncomfortable. Although the lens is larger, the VALO Grand curing light is designed with a low-profile head and elegant, ergonomic, streamlined design to allow for easy direct access to all areas of the patient's mouth.



WITH A 50% BIGGER LENS, YOU WON'T MISS A THING



Energy-efficient hardened glass lens that resists scratching



Larger head size



Highly efficient broadband LED



Low access angle



Front and back activation button



Lightweight design
VALO Grand: 6 oz with batteries



Teflon® seal for easy cleaning



Durable unibody construction



Scratch-resistant coating



Two CR123A rechargeable batteries

WELCOME THE NEWEST MEMBER OF THE VALO FAMILY

VALO Grand Kit

- 1 x VALO Grand LED curing light
- 4 x Batteries (rechargeable)
- 1 x Battery charger
- 1 x Power supply with universal plugs for battery charger
- 1 x VALO Grand light shield
- 1 x Handpiece bracket holder
- 50 x Barrier sleeves

● **5972** Black

VALO[®]
GRAND

VALO Cordless Kit

- 1 x VALO Cordless LED curing light
- 4 x Batteries (rechargeable)
- 1 x Battery charger
- 1 x Power supply with universal plugs for battery charger
- 1 x VALO Cordless light shield
- 1 x Handpiece bracket holder
- 50 x Barrier sleeves

- **5941** Black
- **5943** Gold
- **5944** Graphite
- **5945** Fuchsia
- **5946** Teal

VALO[®]
C O R D L E S S

VALO Kit

- 1 x VALO LED curing light - 7' cord
- 1 x Power supply with universal plugs - 6' cord
- 1 x VALO light shield
- 1 x Handpiece bracket holder
- 50 x Barrier sleeves

○ **5919** Black

VALO[®]

THE VALO STORY

When Ultradent launched the original VALO curing light in 2009, it quickly gained recognition for its powerful broad-spectrum output, durable design, and ability to access any area of the mouth. Constructed from a solid bar of tempered, high-grade, aerospace aluminum, and CNC precision milled, the VALO curing light is the most durable curing light available. Even in a market full of cordless devices, the corded VALO curing light made a significant impact on the industry.

In 2011, we introduced the VALO Cordless curing light, which offers the same superior curing capabilities of the original VALO light with the freedom of a cordless wand. The VALO Cordless curing light offers mobility without compromise. Weighing a mere two ounces more than the original VALO light and with identical programming and power output, the VALO Cordless light operates on two lithium iron phosphate batteries that deliver the consistent high-energy power the VALO curing light requires.

In 2016, the VALO Grand curing light was introduced. The VALO Grand light provides all the power, durability, and accessibility of the VALO light and the VALO cordless light, but with a 50% bigger lens.



The increasing industry focus on more efficient practice management has increased the demand among dentists for a curing light that provides greater energy output with shorter cure times. The VALO curing light does just that.

"The award-winning line of VALO curing lights now includes the original VALO, VALO Cordless, VALO Ortho, VALO Ortho Cordless, VALO Colors, and now, the VALO Grand. Each one offers a unique combination of features that allows dental professionals to consistently deliver the right, unprecedented power to the right place, with accessibility and durability to boot."



Dr. Dan Fischer

AWARD-WINNING

In 2010, the VALO curing light won a Bronze International Design Excellence Award from the most respected design organizations in the world. In 2011 and 2012, it was chosen as one of Dentistry Today's Top 50 Products. The VALO light has also won the Pride Institutes "Best of Class" Technology award for four consecutive years, and the 5-STAR Reality's Choice Award for LED curing lights—staying ranked #1—for six consecutive years. It also won the Townie Award in both 2014 and 2015.





800.552.5512 ULTRADENT.COM

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ULTRADENT
PRODUCTS, INC.

Have confidence in a deep, uniform cure.

3M™ Elipar™ DeepCure-S LED Curing Light



Be sure of your cure.

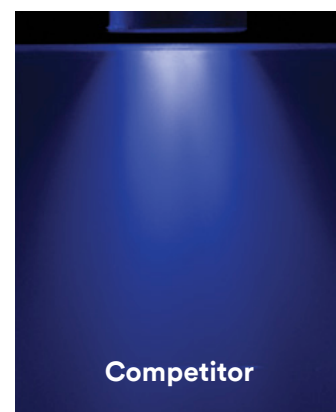
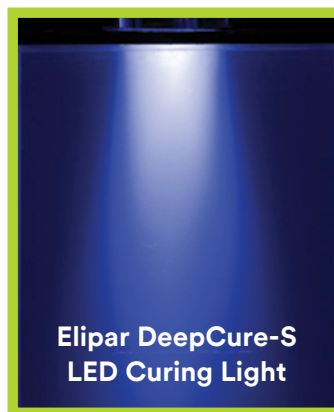
Can you effectively polymerize resin composite material deep in the cavity? We took this as a challenge and created a new high-performing light that delivers a focused output of 1,470 mW/cm².

Due to optimized optics, you can be confident that your restorations will have a deep, uniform cure—from center to rim, from surface to cavity bottom and at clinically relevant distances.

More homogeneous energy distribution throughout the restoration. Images comparing light penetration show the 3M™ Elipar™ DeepCure-S LED Curing Light produces a more collimated and uniform beam profile—even in deeper areas—than a competitive curing light.

Source: 3M internal data.

Comparison of light penetration



1. 3M internal data.

Summary of advantages

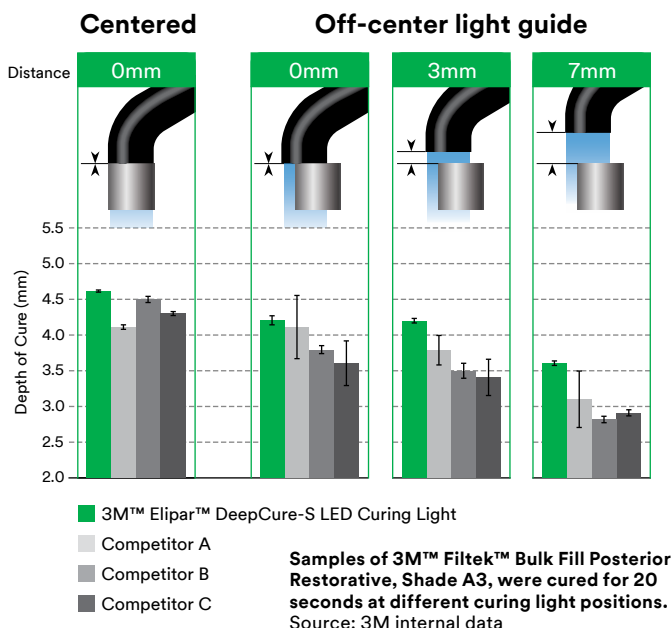
- More collimated and uniform beam profile even in deeper areas than other light curing devices tested¹
- A predictable, reliable cure, even at the bottom of the proximal box
- High depth of cure, especially if light positioning is difficult
- Optimized light guide geometry allows easy access to all tooth surfaces
- High-quality, durable stainless steel

3M™ Elipar™ DeepCure-S LED Curing Light

What does a deep, uniform cure mean for your clinical results?

It means a high depth of cure, especially if the light positioning is difficult. The Elipar DeepCure-S LED Curing Light helps to compensate for slight movements during curing, delivering a high depth of cure, as shown below.

Depth of cure (mm) for various positions



Designed for comfort.

The light guide of the Elipar DeepCure-S light is designed with an optimum angle and height that makes it more comfortable for patients—even those with limited mouth-opening abilities. Clinicians also find it comfortable to use, with easier access to all tooth surfaces, even in the hard-to-reach posterior area.

Technical Performance Data

Wavelength	430–480 nm
Light intensity	1,470 mW/cm ² (-10%/+20%)
Power supply	Lithium-ion battery Approx. 120 min. battery runtime (~720 10-sec. cures) with constant light output regardless of battery charge
Operation	Intuitive two-button and single-mode operation Pre-set cure times: 5, 10, 15 and 20 sec., continuous mode (120 sec.) and tack cure mode
Curing time	Refer to material instructions; 10 sec. for many composites
Light guide	10 mm; black coated; autoclavable; optimal intraoral reach due to user- and patient-friendly geometry

Ordering Information—Stainless Steel

Item #	Product Information
76976	3M™ Elipar™ DeepCure-S LED Curing Light Contains: Handpiece (Cordless), Charging Base; Li-ion Battery; 10mm Light Guide; Eye Shield
76981	3M™ Elipar™ DeepCure-S Light Guide, 10mm
76984	3M™ Elipar™ DeepCure Eye Shield
76985	3M™ Elipar™ DeepCure-S Rechargeable Li-ion Battery



www.3M.com/CuringLights

3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144-1000 USA
Phone 1-800-634-2249
Web 3M.com/dental

3M Canada
Post Office Box 5757
London, Ontario N6A 4T1
Canada
Phone 1-888-363-3685

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70-2013-0702-5

Have confidence in a deep, uniform cure.

3M™ Paradigm™ DeepCure LED Curing Light

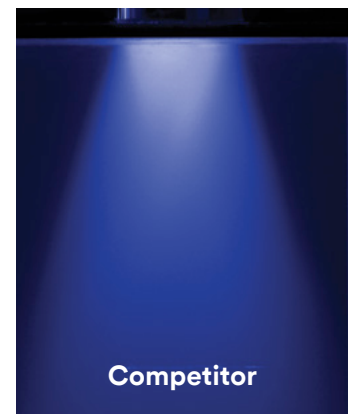
A lightweight model that's simple to use.

The Paradigm DeepCure LED Curing Light delivers a focused output of 1,470 mW/cm². You can have confidence in a safe, reliable and consistent cure—even at the bottom of the proximal box of your larger restorations.

Light in weight but not light on power, it delivers a high depth of cure compared to other light curing devices tested—even when perfect light positioning is difficult. This helps to compensate for user variability and slight movement during curing.

More homogeneous energy distribution throughout the restoration. Images comparing light penetration show the 3M™ Paradigm™ DeepCure LED Curing Light produces a more collimated and uniform beam profile—even in deeper areas—than a competitive curing light.
Source: 3M internal data.

Comparison of light penetration



Summary of advantages

- A predictable, reliable cure, even at the bottom of the proximal box
- High depth of cure, especially if light positioning is difficult
- 10mm light guide allows easy access to all tooth surfaces
- 120 minutes of cure time from a full charge
- Economical, lightweight model

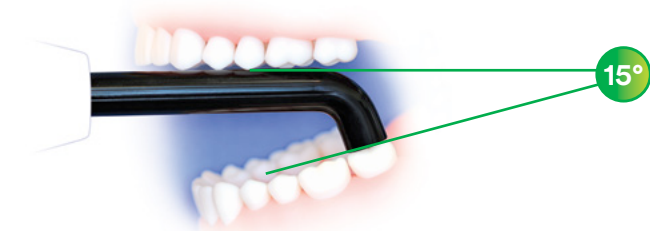
3M™ Paradigm™ DeepCure LED Curing Light

Designed for maximum efficiency

- Simple, intuitive two-button operation
- Multiple-setting light timer with easy, push-button control offers preset cure times of 5, 10, 15 and 20 seconds, and a continuous 120-second mode
- Tack cure mode allows predictable curing and easier removal of excess light curing cement

Designed for comfort.

The light guide of the Paradigm DeepCure curing light is designed with an optimum angle and height that makes it more comfortable for patients—even those with limited mouth-opening abilities. Clinicians also find it comfortable to use, with easier access to all tooth surfaces, even in the hard-to-reach posterior area.



Technical Performance Data

Wavelength	430–480 nm
Light intensity	1,470 mW/cm ² (-10%/+20%)
Power supply	Lithium-ion battery Approx. 120 min. battery runtime (~720 10-sec. cures) with constant light output regardless of battery charge
Operation	Intuitive two-button and single-mode operation Pre-set cure times: 5, 10, 15 and 20 sec., continuous mode (120 sec.) and tack cure mode
Curing time	Refer to material instructions; 10 sec. for many composites
Light guide	10 mm; black coated; autoclavable; optimal intraoral reach due to user- and patient-friendly geometry

Ordering Information—Lightweight

Item #	Product Information
76974	3M™ Paradigm™ DeepCure LED Curing Light Contains: Handpiece (built-in Li-ion battery); Universal Power Supply with NA adaptors; 10mm Light Guide; Eye Shield; 3 Curing Discs
76982	3M™ Paradigm™ DeepCure Light Guide, 10mm
76986	3M™ Paradigm™ DeepCure Eye Shield
76965	3M™ Paradigm™ DeepCure Curing Discs (5 pcs.)



www.3M.com/CuringLights

3M Oral Care
2510 Conway Avenue
St. Paul, MN 55144-1000 USA
Phone 1-800-634-2249
Web 3M.com/dental

3M Canada
Post Office Box 5757
London, Ontario N6A 4T1
Canada
Phone 1-888-363-3685

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Bluephase®

LED Curing Lights




**ivoclar
vivadent**
passion vision innovation

Very small, c



5 Second Cure

For most materials

Bluephase® Style 20i and Bluephase® 20i LED curing lights feature “turbo” mode that boosts light intensity of up to 2,000 mW/cm². Turbo mode enables most composite materials to be cured in only 5 seconds and also provides higher light intensity to cure more efficiently through ceramic restorations. Polywave™ technology provides a broadband spectrum of 385-515nm, which allows you to polymerize all light curing dental materials on the market today!¹ Battery-independent emergency corded operation provides peace of mind.

Bluephase® Style 20i

- Slim, ergonomic and lightweight design
- Up to 2,000 mW/cm² in TURBO mode for an efficient polymerization through ceramic restorations
- The short curing time of only 5 seconds helps to boost practice productivity and patient satisfaction
- Inductive charging of the battery avoids issues resulting from contaminated charging contacts



Bluephase® 20i

- Four programs for all clinical situations
- Gun-style design with OLED display to see settings and remaining curing time
- Corded back-up power supply



cures all.



10 Second Cure

For most materials

Bluephase® Style and Bluephase® G2 LED curing lights offer a light intensity of 1,200 mW/cm² and will cure most composite materials in 10 seconds. Polywave™ technology provides a broadband spectrum of 385-515 nm, which allows you to cure all dental materials on the market today!¹ Battery-independent emergency corded operation provides peace of mind.

Bluephase® Style

- Slim, ergonomic and lightweight design
- Uniquely designed light probe makes it easier to access tight areas and steep angles like the lingual surface of lower incisors
- Easy-to-use 2-button operation makes the Bluephase Style extremely intuitive and user friendly



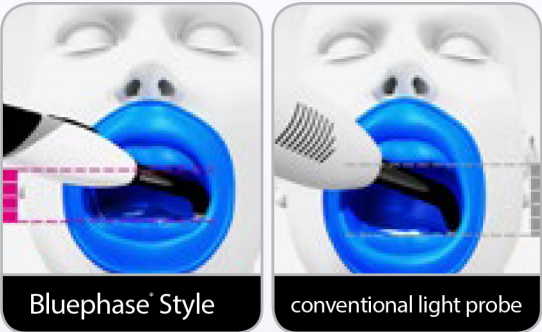
Bluephase® G2

- Three programs for all clinical situations, e. g. curing close to the pulp
- Gun-style design with OLED display to view settings and remaining curing time
- Corded back-up power supply



Bluephase®

Bluephase® Style



Uniquely Designed Light Probe

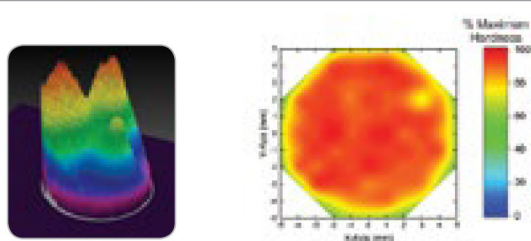
The uniquely designed light probe maximizes posterior access, while the 10 mm diameter of the probe allows you to cure even the largest restorations in just 10 seconds.

Intuitive Operation

The easy-to-use 2-button operation makes the Bluephase Style extremely user friendly!



Deep Cure with Homogeneous Light Output



Beam profile of new Bluephase Style light probe (First introduced in 2013)

Hardness of the composite is uniform and extends the full diameter of the probe*

Source: Dr. Richard Price
*Tetric EvoCeram A2 cured with Bluephase Style (10s) using new probe.

Now Available in 4 Colors



Choose from blue, pink, gray and green!

Inductive Charging



The inductive charging system eliminates the need for battery contacts, which allows for much easier maintenance and charging of your battery!

Click & Cure!

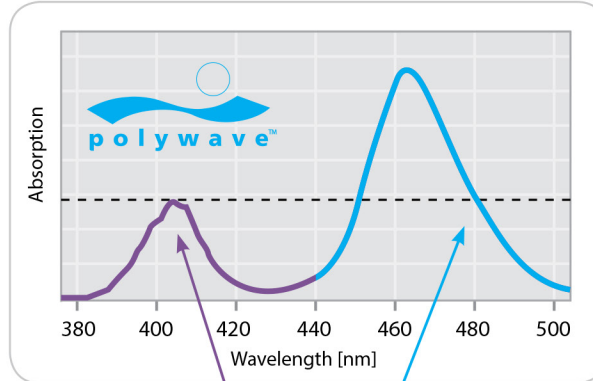


The innovative Click & Cure corded battery backup option enables you to go from cordless to corded operation in just one "click"!

The newly designed light probe produces uniform distribution of the light to ensure a deep depth of cure.

Polywave™ Technology

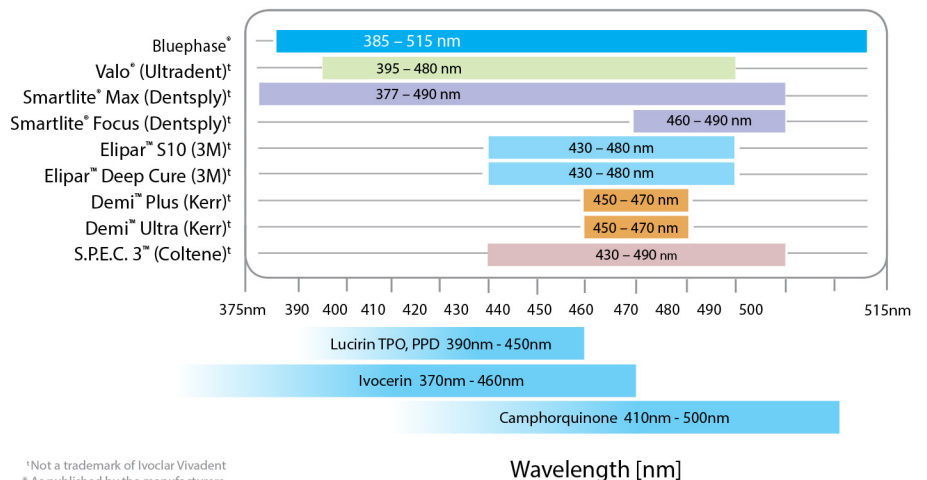
All Bluephase curing lights feature Polywave™ technology which provides a broadband spectrum of 385-515nm enabling you to cure all dental materials on the market today!¹



Bluephase curing lights are powered by blue and violet LEDs which generate two separate peaks. These peaks are what broaden the curing spectrum and enable the proper polymerization of all dental materials.

Bluephase curing lights have the broadest spectrum on the market to cure all materials!¹

Curing Light Spectrum Chart*



Bluephase curing lights polymerize all current photoinitiators and materials on the market, including Lucirin, while most others do not. Therefore, when using Bluephase curing lights, there is no need to worry about incompatibility issues between your curing light and the resin material being used.

Bluephase[®] Meter II

Bluephase Meter II

The Bluephase Meter II is a precise dental radiometer for quick and easy verification of the curing light intensity in [mW/cm²] and the light output in [mW]. Unprecedented measuring accuracy for a radiometer with a tolerance of only $\pm 10\%$, makes it two times more accurate than most portable radiometers currently available.

Suitable for all types of dental curing lights in the wavelength range of 380-550nm including halogen, plasma, and LED.





	Bluephase Style	Bluephase G2	Bluephase Style 20i	Bluephase 20i
Light intensity	max 1,200 mW/cm ² ±10%	max 1,200 mW/cm ² ±10%	max 2,000 mW/cm ² ±10%	max 2,000 mW/cm ² ±10%
Wavelength	385 – 515 nm	385 – 515 nm	385 – 515 nm	385 – 515 nm
Operating	3 min on / 7 min off (intermittently)	5 min. on / 6 min. off (intermittently)	5 min. on / 6 min. off (intermittently)	5 min. on / 6 min. off (intermittently)
Cordless	☐	☐	☐	☐
Optional corded operation	☐	☐	☐	☐
Maximum curing time for composites	15 sec	15 sec	10 sec	10 sec
Maximum curing time for Ivoclar Vivadent composites	10 sec	10 sec	5 sec	5 sec
Curing programs	HIGH Power: 1,200 mW/cm ²	HIGH Power: 1,200 mW/cm ² LOW Power: 650 mW/cm ² SOFT Start: 650 / 1,200 mW/cm ²	TURBO: 2,000 mW/cm ² HIGH Power: 1,200 mW/cm ²	TURBO: 2,000 mW/cm ² HIGH Power: 1,200 mW/cm ² LOW Power: 650 mW/cm ² SOFT Start: 650 / 1,200 mW/cm ²
Light probe	10 mm black	10 mm black	10>8 mm black	10>8 mm black
Power supply	Contactless charging via lithium-polymer battery with capacity ~20 min and charging time ~2h	Lithium-polymer battery with capacity ~60 min and charging time ~2h	Lithium-polymer battery with capacity ~45 min and charging time ~2h	Lithium-polymer battery with capacity ~45 min and charging time ~2h
Weight of handpiece	120 g (incl. battery and light probe)	225 g	120 g (incl. battery and light probe)	225 g
Handpiece style	wand	gun	wand	gun
Warranty	3 years (battery 1 year)	3 years (battery 1 year)	3 years (battery 1 year)	3 years (battery 1 year)

Product	Order No.	Contents
Bluephase Style	682460BU – Green 642513BU – Blue 642514BU – Pink 635153BU – Gray	Handpiece, charging base, power pack, battery, 10 mm light probe, anti-glare cones
Bluephase G2	607920BU	Handpiece, charging base, power pack, battery, 10 mm light probe, anti-glare cones
Bluephase Style 20i	682109BU	Handpiece, charging base, power pack, battery, 10>8 mm light probe, anti-glare cones and shield
Bluephase 20i	613435BU	Handpiece, charging base, power pack, battery, 10>8 mm light probe, anti-glare cones and shield

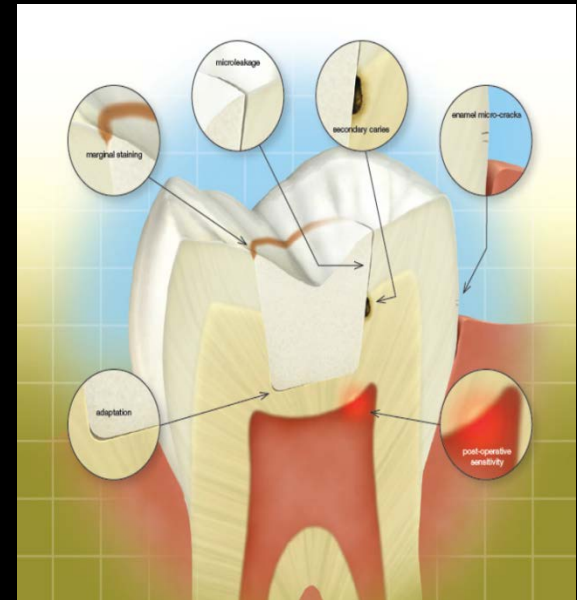
HTC meeting 8NOV17 (Curing Lights)



<https://www.dentistry.uiowa.edu/operative-light-curing>

Clinical concerns

- Undercuring
- Shrinkage stress
- Safety
 - Heating pulp or periodontium
 - Vision



<http://www.eyeproblems.uk.com/macular-degeneration/wet-macular-degeneration/>

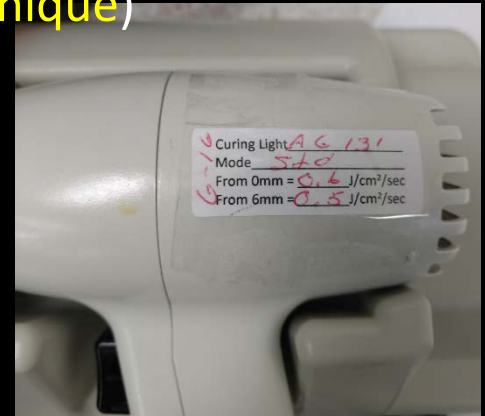
Bottom line message on light curing

Clinician must know:

1. Radiant exposure you need to deliver (**material requirement**)
2. Radiant exposure you are delivering (**light curing unit performance**)
3. How to deliver light energy effectively (**clinical technique**)

Manufacturers must provide following information:

1. Curing lights
 - Irradiance delivered at various distances
 - Spectral irradiance delivered
 - Light guide
 - Beam homogeneity (irradiance and spectral irradiance)
 - Effective tip delivery region
2. Materials
 - Radiant exposure required to cure
 - Wavelength range required to cure



Adapted from: Light Curing – Guidelines for Practitioners - 2014 Symposium on Light Curing in Dentistry held at Dalhousie University, Canada*

Know the key performance parameters of your light curing unit (LCU):

Light output

1. averaged irradiance over the beam incident area in mW/cm^2 over relevant distances
2. spectral irradiance from the LCU

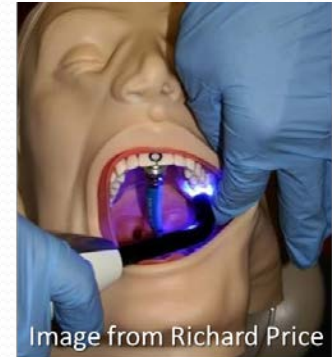
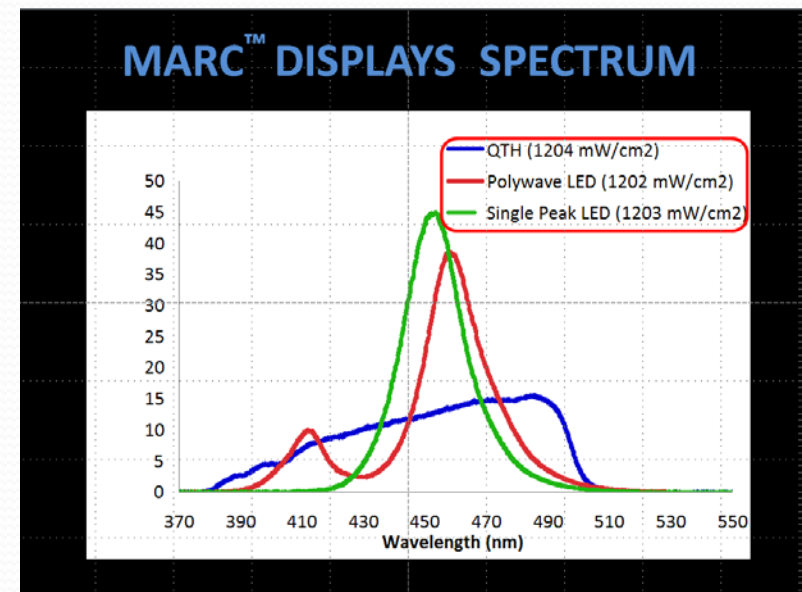
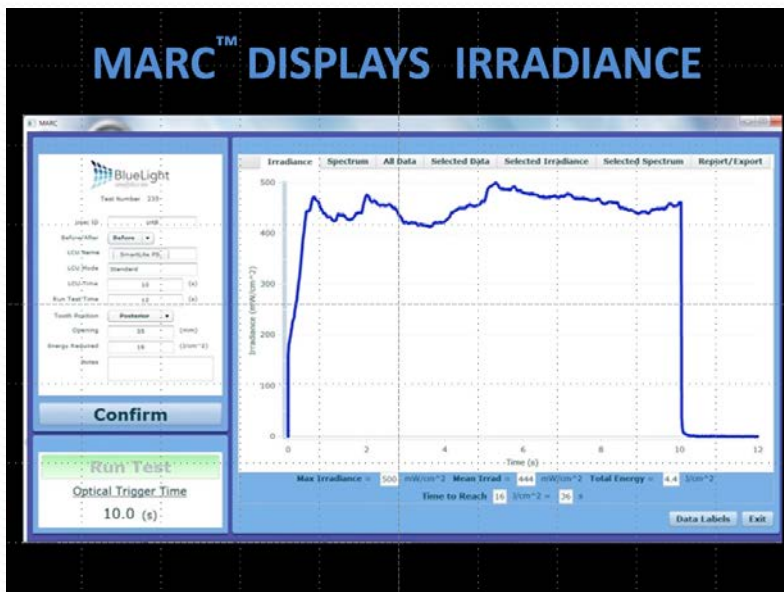


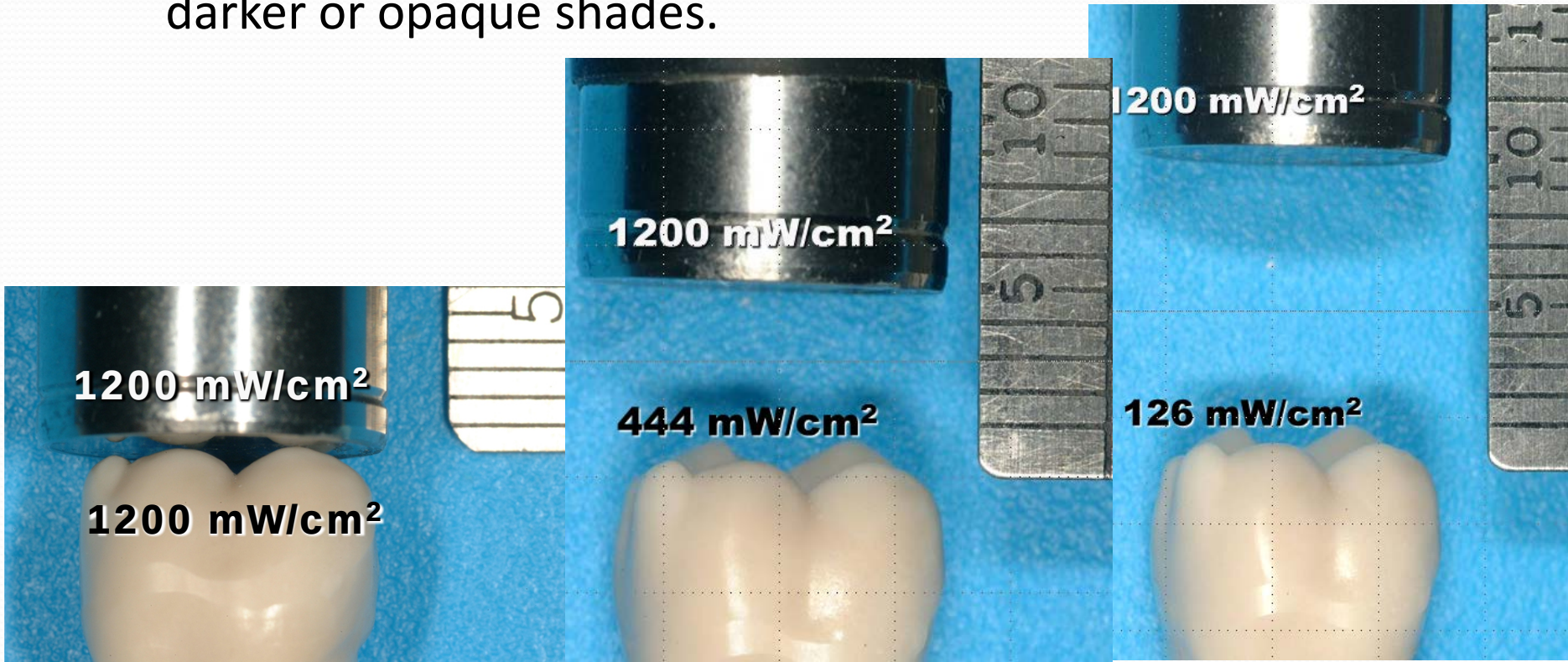
Image from Richard Price



Light Curing – Guidelines for Practitioners - continued

Before you light cure, remember to:

- Increase your curing times for increased distances and darker or opaque shades.

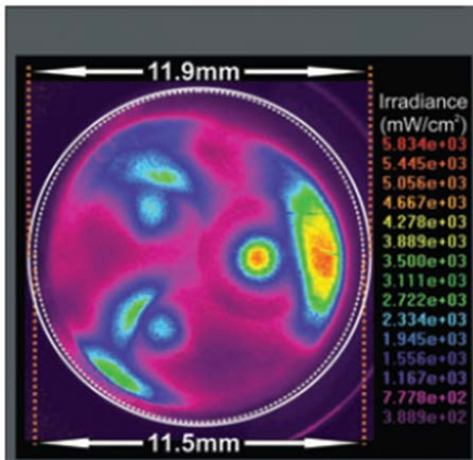


Light Curing – Guidelines for Practitioners – continued

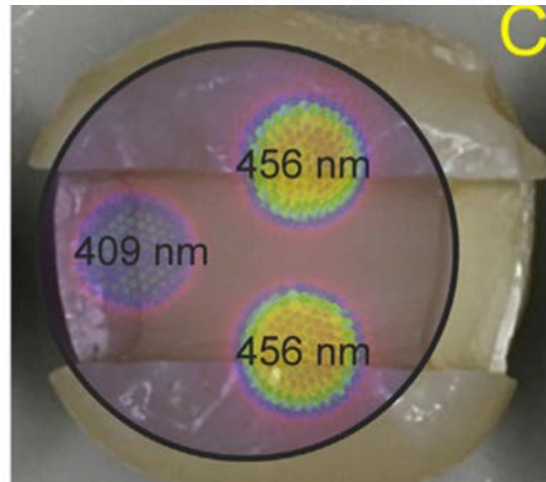
Know the key performance parameters of your light curing unit:

Beam characteristics

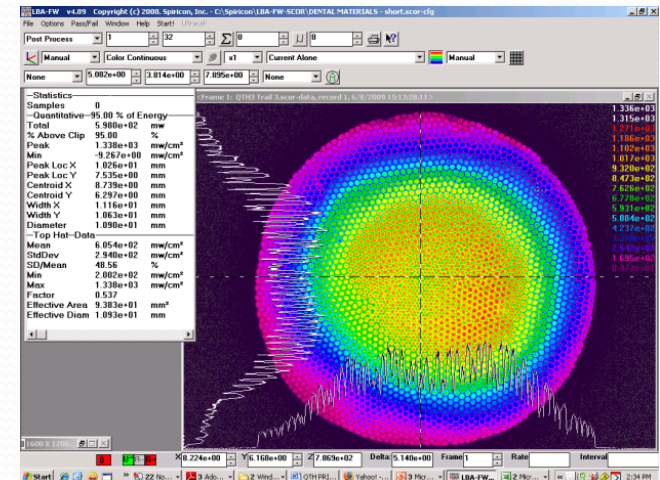
1. Beam irradiance
uniformity (amount)



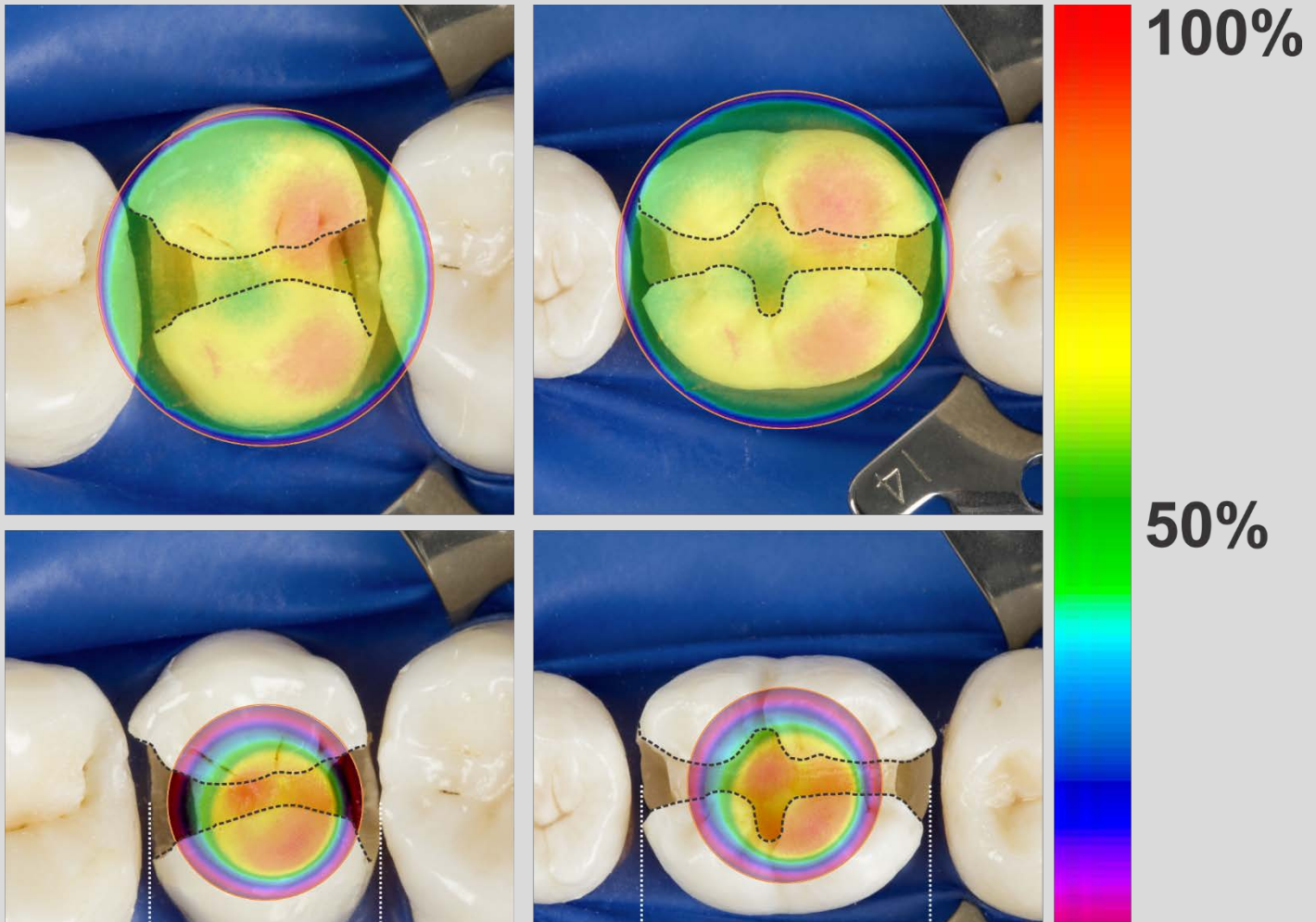
2. Beam spectral irradiance
uniformity (type)



3. Effective diameter of the
light beam.



TIP SIZE SHOULD EXCEED RESTORATION MARGIN BY 1 mm



ACCESS



**CAN YOU ACCESS
THE RESTORATION?**

COMPACT LED CURING LIGHTS

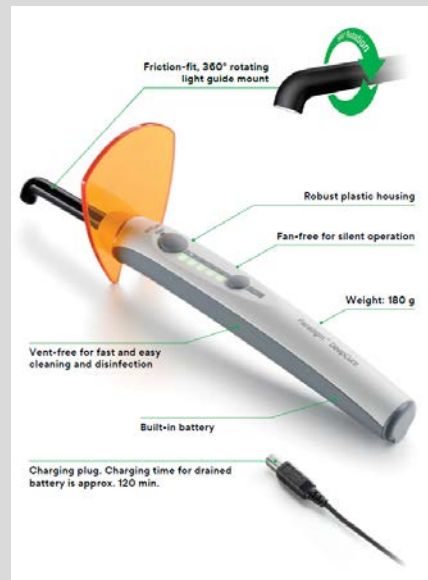




\$875
“4 yr warranty”



\$1191
3 yr warranty



\$569
2 yr warranty



\$840?
3 yr warranty
1 year on battery

Light Curing – Guidelines for Practitioners - continued

Before you light cure, remember to:

- **Always use** the appropriate “blue blocking” glasses or shield to protect your eyes as you watch what you are doing with the curing light.

