APPLICATIONS FOR DIFFERENT SPECIALTIES

1. General Dentistry

A. Assists in detection of caries.
B. Locates supra and sub gingival calculus.
C. When composite removal is required, locates residual composite material which appears darker than surrounding tooth structure.

2. Prosthodontics

A. Location of the dentino-enamel junction in crown preparations.
B. Location of fractures in teeth and porcelain jackets.

3. Endodontics

A. Location of the root canal orifice.
B. Detection of broken instruments in the root canal.
C. Location of root fractures.

4. Periodontics and Dental Hygiene

A. Useful as an auxiliary light source during periodontal surgical procedures.
B. Assists in detection of sub gingival calculus.
C. Helps demonstrate decay and calculus directly in the patient's mouth and is a valuable aid in patient motivation.
D. Oral hygiene instruction and routine screening procedures by the hygienist or assistant.

5. Oral Surgery

A. Location of bone chips and fractured root tips.
B. Generally useful as high intensity auxiliary light.

6. Orthodontics

A. Location of proximal caries when teeth are banded.

7. Pedodontics

A. Detection of crown fractures in traumatic injuries.

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MICROLUX DW

ADDENT INCORPORATED

MICROLUX DW ILLUMINATOR USER GUIDE

MADE IN THE USA

HOW THE MICROLUX DW AIDS IN EFFECTIVE DIAGNOSIS

The Microlux DW's dual wavelengths provide enhanced diagnostics, saving time and reducing costs. Using it before any procedures can prevent failures and the need for return visits.

Use of the Microlux DW white light transillumination (Fig. 1 & 2):

- Visualizing teeth for cracks, fractures, calculus, and caries
- Visualize existing composites for marginal defects and microleakage
- Checking inlays and onlays for micro-cracks or crazes before cementation
- Evaluation of enamel discoloration, including white spot lesions
- Visualization of the root canal and root fractures

Fig. 1

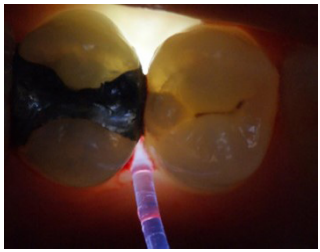


Fig. 2

Images courtesy of Howard Strassler, DMD and Mark Pitel, DMD.

Use of the Microlux DW near UV (405 nm) fluorescence illumination (Fig. 3 & 4):

- Visualize biofilm
- Visualize caries bacteria.
- Evaluation of white spot lesions and demineralization
- Evaluation of micro-leakage
- Visualize plaque for perio and implant maintenance
- Fissure cleaning control
- Differentiate between tooth fluorescent vs. non-fluorescent restorative materials
- Distinguishing sound dentin before composite placement

COLOR EMISSIONS FROM 405NM FLUORESCENCE EXCITATION:	
Sound Tooth Structure	Green, Blue, or Aqua Blue
Bacteria (plaque or dental caries)	Orange to Red
Supra and subgingival calculus	Red or Deep Red

Fig. 3

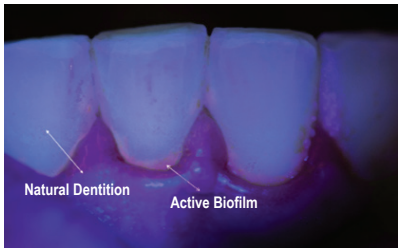
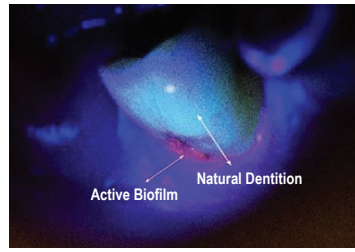


Fig. 4



Images courtesy of Dr. Stephane Browet

Microlux DW is an ideal choice for everyday use as it is easy, safe, precise, and efficient.

HOW MICROLUX DW AIDS IN TREATMENT

Having the ability to visualize tooth defects accurately is crucial for a successful procedure. The Microlux DW with transillumination mode, in many cases, provides more accurate information than X-rays alone, making it easier to identify the location and invasiveness of the problem. Additionally, the fluorescence mode highlights bacteria like plaque and caries in their early stages of development.

With the transillumination mode of the Microlux DW, the light will transmit white light across the tooth. A tooth with caries, cracks, lesions, or an otherwise unhealthy tooth will interrupt the light beam in various ways. This feature helps you visualize the changes in color, texture, tooth surface appearance, and the presence or absence of shadows. Interpreting this information will aid immensely in your day-to-day diagnoses.

Dentists can visualize defects at every step of each procedure, not just at the hygiene appointment. During a crown prep procedure micro-cracks or crazes cannot be easily seen and may lead to microleakage over time. Because damaged tooth structure has a lower index of light transmission, even the slightest deviations can be detected.

Because approximately one in five adults suffer from aggressive forms of periodontal disease, there is growing interest in the use of fluorescence diagnosis systems. Fluorescence can provide an endpoint to the scaling and root planning procedures that are undertaken by the dentist and dental hygienist.

Using the fluorescence mode of Microlux DW lets you see plaque and calculus which emits visible pink/red fluorescence from deposits of dental plaque on the surface of teeth, restorations, or dental appliances. (Fig. 5)

As a plaque indicator, the intensity of the red fluorescence produced by bacterial activity (bacterial porphyrins) makes it possible to observe the presence and or complete removal of bacterial plaque during prophylaxis as well as during periodontal treatments. Moreover, the meticulous evaluation of restorative margins with this light provides a valuable tool to check local plaque retention as well as possible leakage due to dissolution of cement.

Fig. 5

Fig. 6

The detection and removal of tooth-colored filling materials is a major challenge for every dentist. However, the fluorescence mode provides a noninvasive solution to differentiate composite resin material from the healthy tooth structure. (Fig. 6)

A failure to detect a filling may lead to unidentified excess material or undetected new pathological findings beyond the margins. Healthy tooth structure may be mistakenly removed or, conversely, composite remnants may be left behind during preparation because of difficulty distinguishing between tooth structure and composite. Composite remnants diminish the quality of later adhesive restorations. Overlooked fillings also lead to dental charting errors, which may result in false caries risk assessments and improper treatment.

Using fluorescence as a noninvasive method of detecting composite can be beneficial for cleanup after orthodontic debonding. Fluorescence visualization is helpful in terms of reduced time needed for the removal during cavity preparation.