



---

## HDR Darkroom User Manual

---

---

## Content

---

<b>1.</b>	<b>Introduction .....</b>	<b>1</b>
1.1.	<b>A Brief Introduction to HDR Photography.....</b>	<b>1</b>
1.2.	<b>Introduction of HDR Darkroom .....</b>	<b>3</b>
<b>2.</b>	<b>HDR Darkroom Workflow.....</b>	<b>6</b>
2.1.	<b>HDR Composition Workflow.....</b>	<b>6</b>
2.2.	<b>Tone Mapping Based RAW Converter Workflow.....</b>	<b>11</b>
<b>3.</b>	<b>Batch Processing.....</b>	<b>14</b>

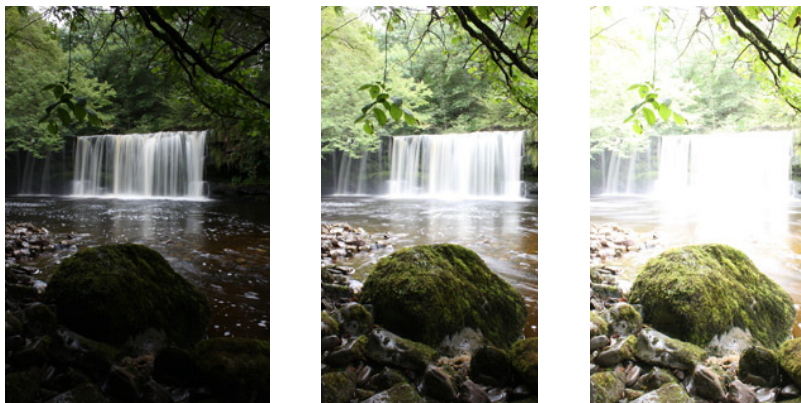
## 1. Introduction

---

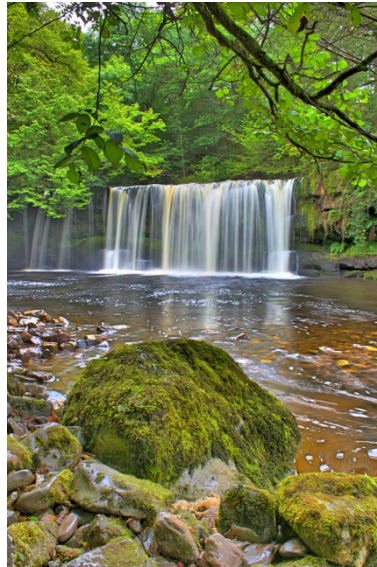
### 1.1. A Brief Introduction to HDR Photography

---

HDR photography stands for **High Dynamic Range** (HDR) photography. HDR photography is a technique that allows you to capture a wider range of lighting and colors than that normal digital imaging techniques can achieve. HDR photography does this by combining three or more photos of the same scene with different exposures instead of just one photo as you might usually take. What your naked eyes see in real life can be fully shown in a HDR photo. The advantage of HDR photography lies in producing a photo that keeps details and reproduces vivid colors in both shadow and light.



A brief introduction to making HDR photos: Take three photos of the same scene with different exposures (Like the above photos) and input these photos into HDR software. These photos will be merged into a single radiance map (32-bit per channel), which is also called digital HDR negative. Then a process called “tone mapping” is used to develop the digital HDR negative into a displayable HDR photo, showing rich details and vivid colors like the photo shown below. Our HDR Darkroom is an innovative HDR software that uses the above-mentioned process to help you to create gorgeous HDR photos with minimal effort like the following.



Tone mapping mentioned above is a significant step in creating HDR photos. It is the step of developing digital HDR negatives into a displayable HDR photo showing rich details and vivid colors. HDR Darkroom uses two patented innovative Local Tone Mapping technologies to help you achieve this aim. One is called Local Tone Balancer, which is aimed at balancing tones in the photo and reveals detail in both shadow and highlights. The other is called Local Tone Enhancer, which has the strong power of extracting details in the photos.

The number of photos you need to make a HDR Photo depend on the exposure values and dynamic range of the scenes. If the scenes contain a high dynamic range, like a scene inside a room containing sun coming in from the outside, you need more exposure to cover the whole dynamic range.

**Note:** Multiple photos of the same scene with different exposures should be taken in order to create HDR photos. Although HDR Darkroom provides advanced alignment methods to compensate for small movements during the photo capture, using a tripod is strongly recommended in order to ensure high quality results. Photos where you moved a great deal while capturing the photo cannot be aligned, merged and processed into the photo you desire.

## 1.2. Introduction of HDR Darkroom

### Photo realistic HDR's at lightning speed

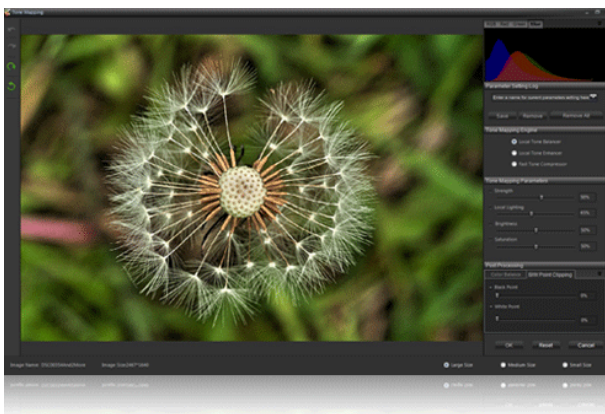
Splendid natural scenery and well-thought-out composition do not always turn out to be gorgeous photos. Oftentimes, photos are either too bright or too dark. Details once seen by the naked eyes are completely lost in the shadows or highlights.

**HDR Darkroom**, a revolutionary high dynamic range imaging software can solve your problem, by squeezing extended details that would otherwise be lost to the medium, into your image. Take three photos: one normal-exposed, one over-exposed and one under-exposed. By correctly combining density and detail data of more than one exposure, HDR Darkroom can emulate the range of details that the human eye can detect by compressing the content of multiple frames into a single image frame in a manner that doesn't exceed the medium. The results contain rich details and vivid colors without introducing anomalies such as halos or other blemishes. This is the strength of HDR Darkroom.

For those starting out in HDR photography, **HDR Darkroom** is a perfect fit. With the most easy-to-use UI and simple to understand controls, you'll be on your way to create astonishing HDR's in no time!

### Cutting Edge Local Tone Mapping Technology:

As photographers we have managed to improve our images using a myriad of techniques over the years, but now there is a much better way to do it. And we at Ever Imaging, understand your need to achieve photo-realistic results on your HDR's. Using our cutting edge Local Tone Mapping Technology, we produce the most spectacular photo-realistic results in the market today.



### Easy-to-use UI

We have been working together with photographers to fully understand their workflow and include it in HDR Darkroom. It just keeps getting better.

### High Speed Processing:

We value your time. This is why our image processing engine is now 3X faster than our competitors.



### Powerful Batch processing:

HDR Darkroom batch processing engine is not your typical "one size fits all" that users of other like software have come to expect. Our batch processing is dynamic: each image is analyzed on the fly and suitable defaults are then applied accordingly. This allows you to use batch processing in a more meaningful way, thus saving you countless hours of unnecessary manual adjustments.

### Sophisticated Camera Raw File Converter:

HDR Darkroom supports RAW files captured by more than 150 camera models like Canon, Nikon, Sony, Olympus and Panasonic as well as Adobe (DNG). The newly released formats will be included in new releases once they become available.

**RAW**



### Multi Platform:

HDR Darkroom support all major platforms. Include Windows and Mac.

## Innovative workflows to choose from:

When you use HDR Darkroom you can choose from of the following professional workflows:

**1. HDR Composition workflow (HDR Composition):** In this workflow, multi-exposed 8-bit (jpeg, bmp, png etc) or 16-bit (CR2, NEF, etc) RAW image data is needed to combine into HDR photos through the steps of noise reduction, alignment, de-ghosting, merging into HDR negatives and tone mapping. This workflow usually produces the most spectacular photos.

**2. Tone Mapping based RAW converter workflow (RAW converter):** HDR Darkroom is also a RAW converter. Different from conventional RAW converters, HDR Darkroom inserts Ever Imaging's sophisticated tone mapping engines into the RAW conversion workflow and thus better reproducing the details, colors and contrast.

## 2. HDR Darkroom Workflow

### 2.1. HDR Composition Workflow

#### Step 1: Taking photos of a HDR scene HDR Composition workflow

In order to create the best HDR images, you need to take enough photos (at least 2) with different exposures to cover the dynamic range of the scene.

Most digital cameras on the market offer an Auto-Exposure Bracketing (AEB) function, which makes the HDR capture relatively easy. HDR Darkroom enables you to align images if the camera moved slightly between frames, but using a tripod is still recommended.


In Step 3, we will load the images into HDR Darkroom.

#### Step 2: Open HDR Darkroom

Enter the working area of HDR Darkroom by double-clicking on the application's desktop icon or enter through the Start menu if the application has been installed. The working area of HDR Darkroom is as shown below.



#### Step 3: Generate the HDR image

Click **File**, select **Create HDR** (or click the  icon on the left hand side) and the merge dialog will appear as can be seen below. At this time you will specify the merge options.



### Align option area:

Choose **No Alignment** , photos which have been added will automatically be merged into a 32-bit float point HDR radiance map (digital negative) without applying any alignment technology.

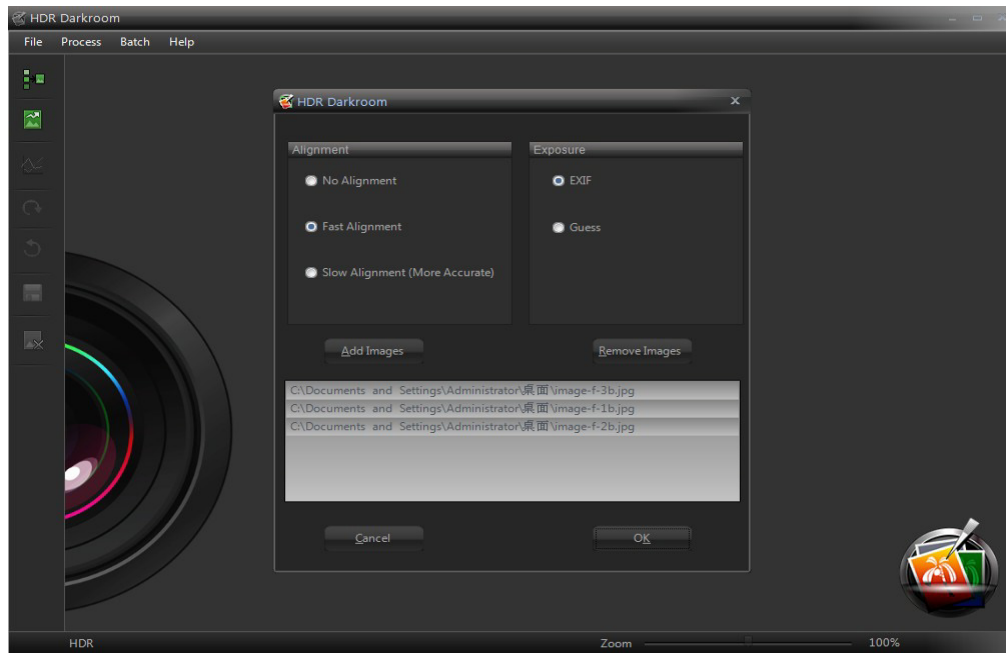
Choose **Alignment** , photos which have been added will be aligned using a feature matching method and then be merged into a 32-bit float point HDR radiance map (digital negative). This option can compensate for both translational and rotational movement, and even distortions during the capture process.

### Exposure option area:

If the exposure value in EXIF data is available in the photos, you can choose the EXIF option, otherwise, you need to choose the Guess option. The default option is Guess option.

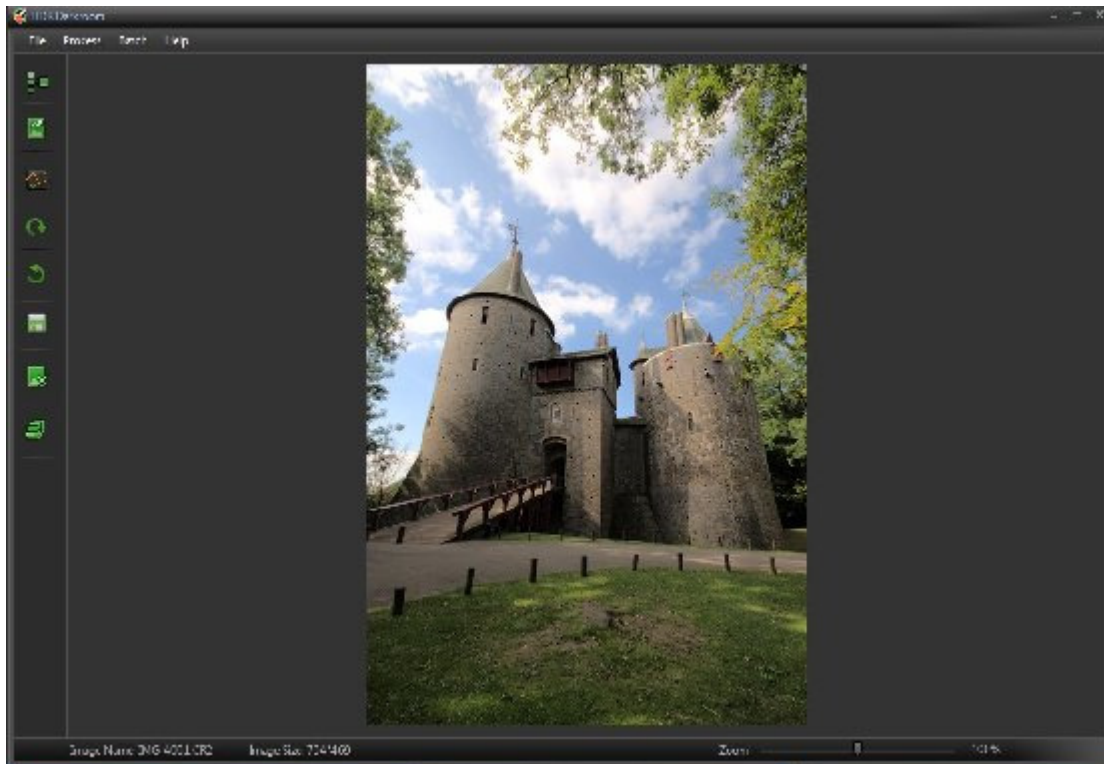
**Tip:** If you are not sure about whether the EXIF data is available in the photos, we suggest that you choose the Guess option. Our Guess option uses an

advanced algorithm to ensure that the exposure values can be estimated correctly.




Once the options are specified, select the **Add Image** button to add the image sets (You can choose 8-bit images like JPEG, BMP etc. or you can choose 16-bit images like camera raw), click **OK** to continue.

After this HDR Darkroom will use the selected photos and merge these into a single 32-bit float point HDR radiance map (digital negative) based on the selected Alignment and Exposure options. In order to let users view the results, a simple global tone mapping engine (Fast Tone Balancer) using the default settings is applied to convert the 32-bit float point HDR radiance map to 8-bit integer values so as to give users a first impression in the working area of what the results are going to be after merging.



#### Step 4: Tone Mapping, here is the magic:

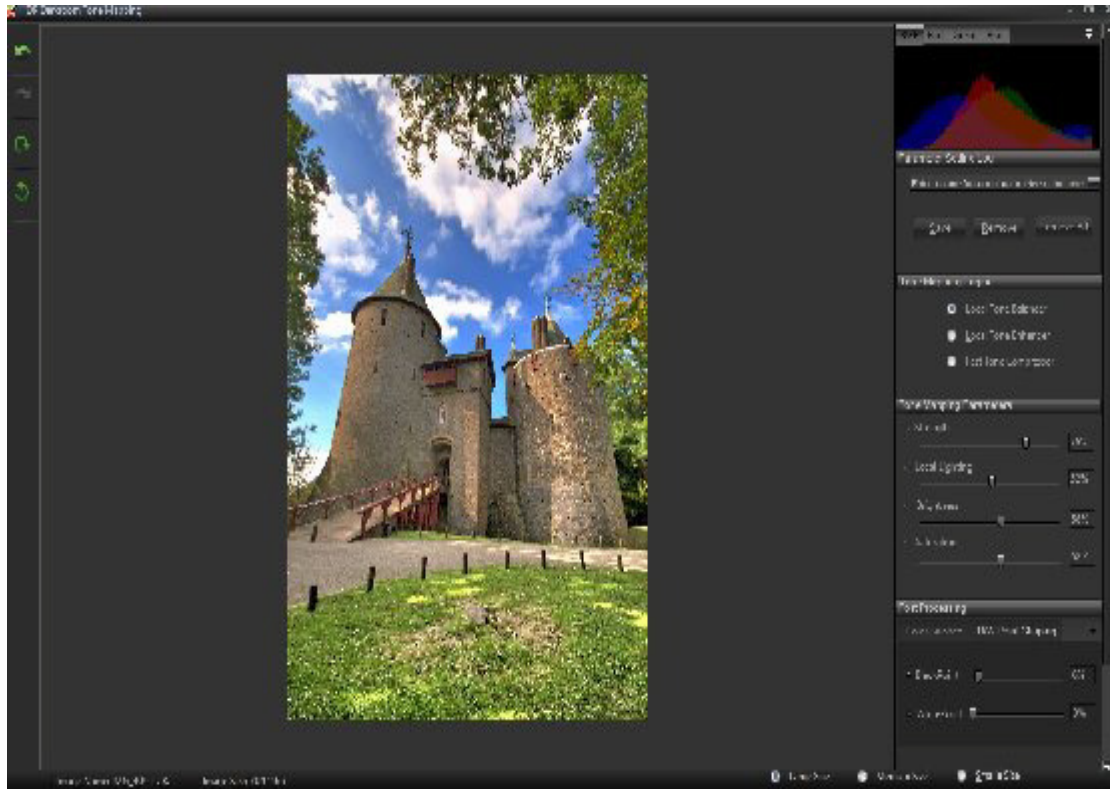
In order to obtain high quality HDR image please use the Tone Mapping option.

Next, click **Process**, select **Tone Mapping** (or click the  icon on the left hand side) and the tone mapping preview window will be displayed. In the window you have three Tone Mapping Engines to choose from to process images.

- **Local Tone Balancer (LTB)** : This is a patented Local Tone Mapping Engine, which is aimed at balancing tones in the photo and reveal detail in both shadow and highlights.
  - **Strength**: Adjusts the local contrast of the image
  - **Local lighting**: Adjusts the local lighting level
  - **Brightness**: Adjusts the brightness of the image
  - **Saturation**: Adjusts the color saturation of the image
- **Local Tone Enhancer (LTE)**: This is a patented Local Tone Mapping Engine, which has the strong power of extracting details in the photos.
  - **Strength**: Adjusts the local contrast of the image
  - **Brightness**: Adjusts the brightness of the image
  - **Saturation**: Adjusts the color saturation of the image
  - **Fill Light**: Used to reduce the contrast of a scene and provide some illumination for the areas of the image that are in shadow
- **Fast Tone Compressor (FTC)**: This is a Global Tone Mapping engine. The following helps to explain the meaning of the different options:

- **Strength:** Adjusts the global contrast of the image
- **Brightness:** Adjusts the brightness of the image
- **Saturation:** Adjusts the color saturation of the image

Also, HDR Darkroom provides **color balance** and **black/white clip** functions in the post processing area.



Once you are satisfied with your settings, click **OK**. Next, the full size image will be processed and the results will be displayed in the working area. At this stage you can choose to save the image in a number of different formats.

## 2.2. Tone Mapping Based RAW Converter Workflow

HDR Darkroom can be used for 16-bit Camera Raw Conversion with our innovative HDR tone mapping technologies.

### Step 1: Open HDR Darkroom

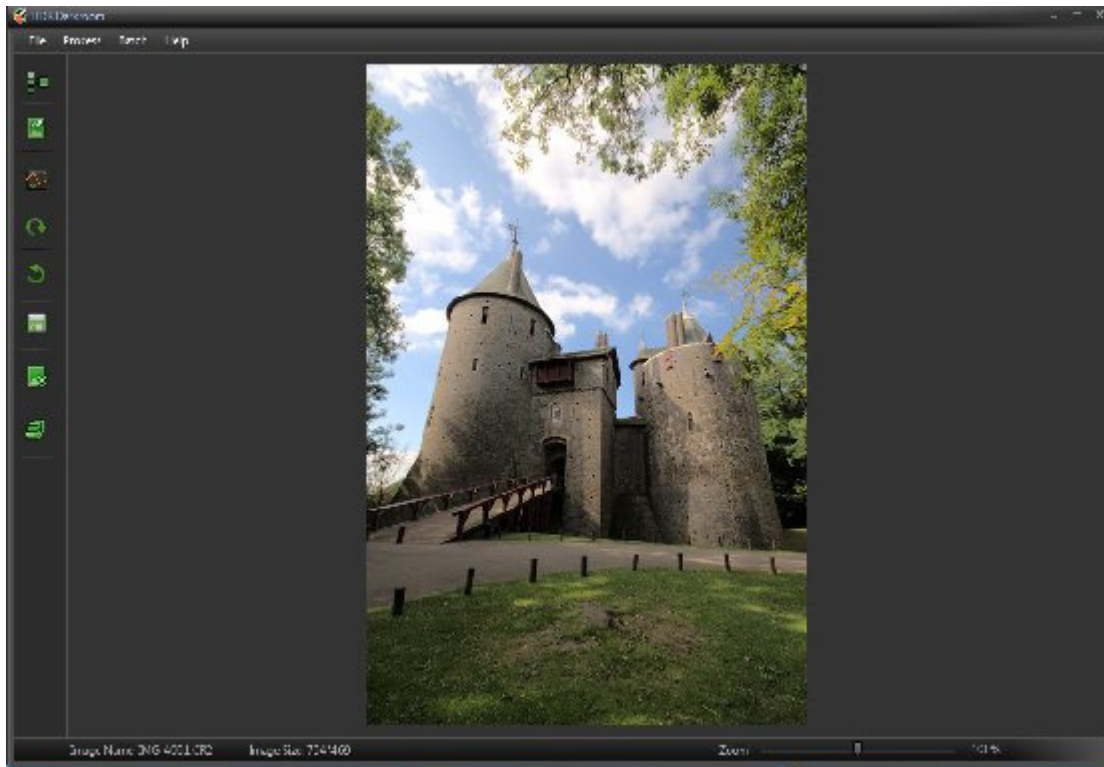
Enter the working area of HDR Darkroom by double-clicking on the application's desktop icon or entry in the Start menu if the application has been installed. The working area of HDR Darkroom is shown as below.



### Step 2: Open files


Click **File**, select **Open Single File**, (or click  icon at the left side), then choose the Camera Raw file you need to process.

HDR Darkroom will use a simple global tone mapping engine (Fast Tone Balancer (FTB)) using the default settings to convert the 16-bit camera raw file format to 8-bit integer values for display so as to give users a first impression in the working area what the image looks like.



### Step 3: Tone Mapping. Here is the magic

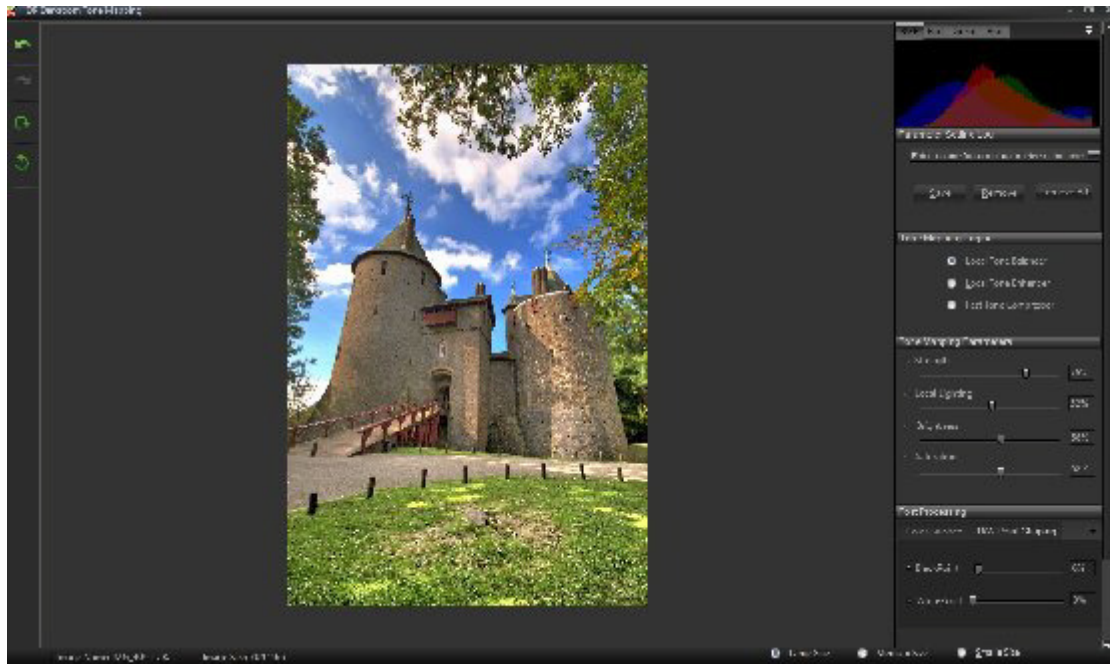
In order to obtain high quality images, Please use Tone Mapping option.

Next click **Process**, select **Tone Mapping**, (or click  icon at the left side) and tone mapping preview window will be displayed. In the window, you have three Tone Mapping Engines to choose from to process images.

- **Local Tone Balancer (LTB)** : This is a patented Local Tone Mapping Engine, which is aimed at balancing tones in the photo and reveal detail in both shadow and highlights
  - **Strength**: Adjusts the local contrast of the image
  - **Local lighting**: Adjusts the local lighting level
  - **Brightness**: Adjusts the brightness of the image
  - **Saturation**: Adjusts the color saturation of the image
- **Local Tone Enhancer (LTE)**: This is a patented Local Tone Mapping Engine, which has the strong power of extracting details in the photos.
  - **Strength**: Adjusts the local contrast of the image
  - **Brightness**: Adjusts the brightness of the image
  - **Saturation**: Adjusts the color saturation of the image
  - **Fill Light**: Used to reduce the contrast of a scene and provide some illumination for the areas of the image that are in shadow

- **Fast Tone Compressor (FTC):** This is a Global Tone Mapping engine. The following helps to explain the meaning of the different options:
  - **Strength:** Adjusts the global contrast of the image
  - **Brightness:** Adjusts the brightness of the image
  - **Saturation:** Adjusts the color saturation of the image

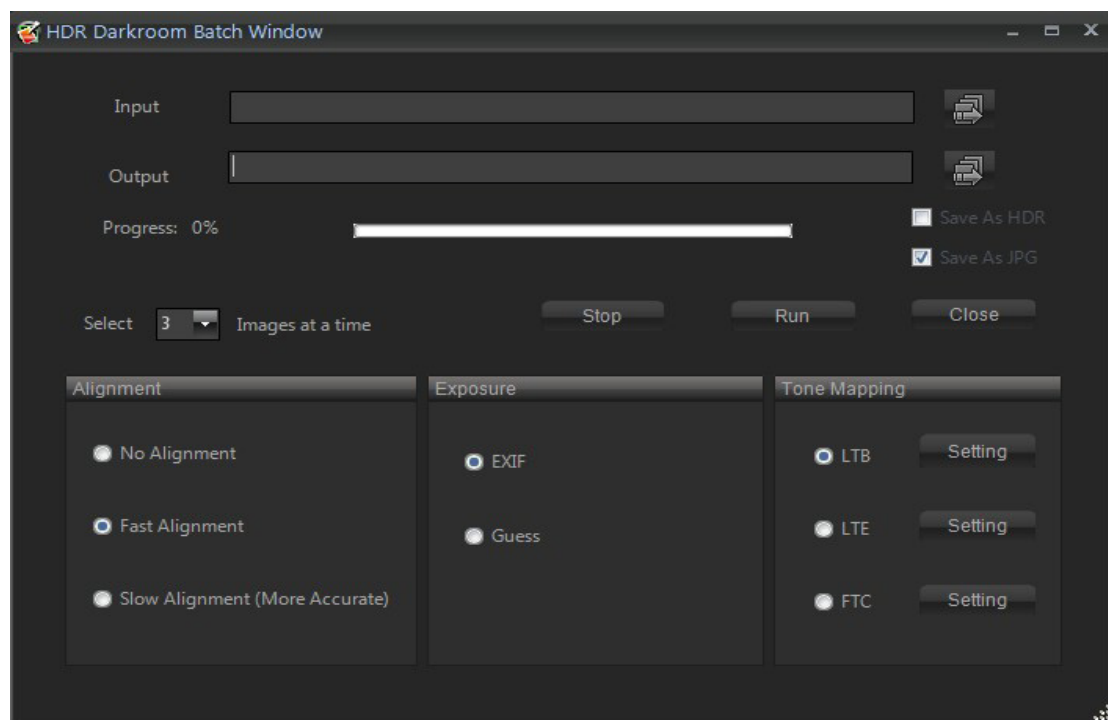
Also, HDR Darkroom provides **color balance** and **black/white clip** functions in the post processing area.



Once you are satisfied with your settings, click OK. Next, the full size image will be processed and the results will be displayed on the working area. At the stage, you can choose to save the image in a number of different formats.

### 3. Batch Processing

If you have a large amount of photos to be processed, you can use our batch model. We have made large efforts in adapting the default parameter setting of each Tone Mapping Engine to process various image contents automatically and nicely. Thus, our batch processing feature can process large amount of images without your interaction and automatically deliver batches of well-processed images to you. To use batch model, Click **Batch**, select **Batch process**, the following window will be displayed for you. Then specify different options and click Run to start batch processing.



To use batch processing, you must have a fix number of photos for each group. For example, if you use 3 photos to combine to a HDR photo, there must be only 3 photos for each group. For example, you have two groups of photos, one group are A1.jpg, A2.jpg, A3.jpg. Another group are B1.jpg, B2.jpg, B3.jpg. You can put them into the same folder and "Select 3 image at a time" for batch processing. However, if another group are B1.jpg, B2.jpg, B3.jpg, B4.jpg. No matter you "Select 3 image at a time" or "Select 4 image at a time", problems will occur.

For converting single Camera Raw files in batch mode, please make sure to **"Select 1 image at a time"** and select **"No Alignment"**.