

Gemprint® LIGHT PERFORMANCE REPORT

GEMPRINT®



DIAMOND INFORMATION

Date
 Gemprint® ID
 Reference No.
 Shape
 Weight
 Measurements

LIGHT PERFORMANCE

Light Return



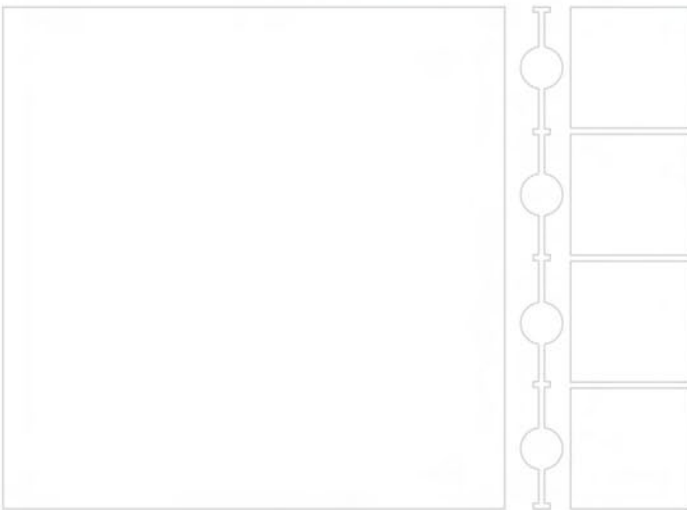
Optical Symmetry



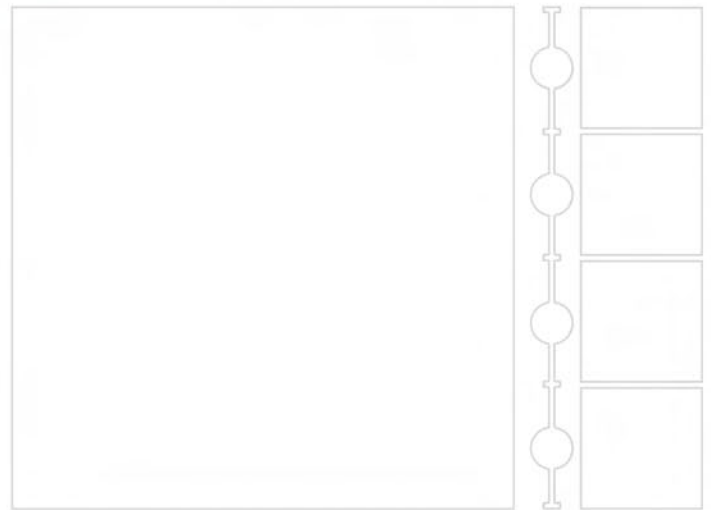
Scintillation



LIGHT RETURN

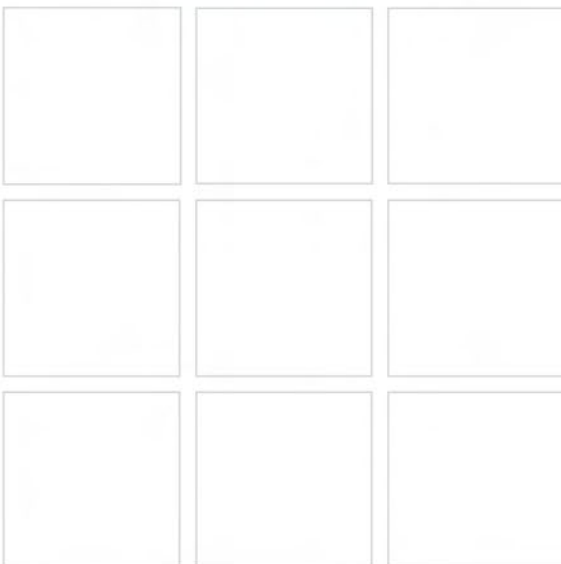


OPTICAL SYMMETRY



SCINTILLATION

Light Return of Nine Positions



Gemprint® is the world's most sophisticated identification technology that records the unique optical fingerprint of each diamond. Just like a human fingerprint, every diamond has a unique Gemprint®.

Registering your diamond in the Gemprint® Registry is one of the smartest safeguards you can obtain to protect your diamond investment. The peace of mind that your diamond can be positively identified, insurance discounts of up to 10%, and increased chances of recovery in cases of loss or theft, make Gemprint® an absolute must for every diamond owner.

Gemprint® Light Performance technology measures a diamond's actual output of light to assess Light Return, Optical Symmetry and Scintillation. The Gemprint® instrument shines a single beam of light into a diamond, which is reflected and refracted by every facet and internal characteristic, and analyzes the light coming back out of the diamond (light return). By collecting data from nine different positions, Gemprint® is a true analysis of a diamond's light handling ability, unlike other diamond cut grading systems that rely on hypothetical models. Gemprint® Light Performance is the only system in which you can easily verify that the light performance described in the report is for your actual diamond.



See the back of this page or go to www.Gemprint.com/LP to learn more about Gemprint® Light Performance and to see a video of your diamond's scintillation in action.


Gemprint®
 The fingerprint system for diamonds®

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UNDERSTANDING YOUR GEMPRINT® LIGHT PERFORMANCE REPORT

What is Light Return?

Light Return is also known as **brilliance** or **total brightness**. It's the exceptional way diamonds *reflect and refract light* creating a luminous return of light to a viewer's eye that has made diamonds sought after for centuries. **Gemprint's Light Performance technology captures and measures the actual output of light from a diamond.**

The Gemprint® instrument shines a **single beam of light** (a red laser) into a diamond and analyzes the **light coming back out of the diamond**. First, data is captured by directing the light beam directly perpendicularly into the diamond, and then the instrument directs the light beam at the diamond while it is tilted approximately 12-14 degrees in eight different directions to establish the light return from different angles. The data is compiled, analyzed, and graded on a scale of Fair, Good, Very Good, and Excellent.

What is Optical Symmetry?

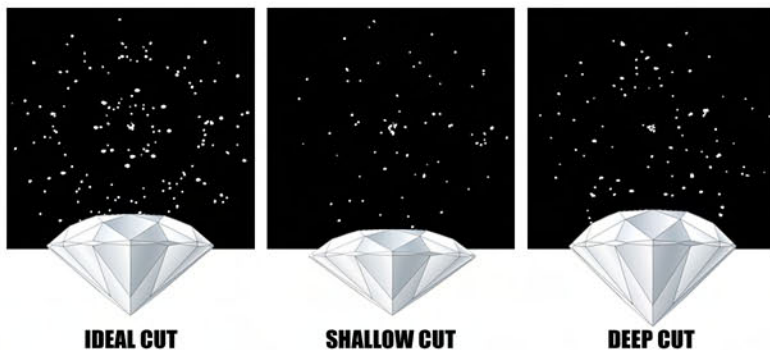
Optical Symmetry is the **evenness of light return**. It is determined by the **equality of every facet and angle**, the alignment of the crown and pavilion, and the orientation of the table and culet. Basically, it is an assessment of a diamond cutter's *craftsmanship, attention to detail, and overall skill*.

The Optical Symmetry image is the light return captured when the diamond is perpendicular to the light beam (the Gemprint®). The equality of the light return is **computed mathematically and analyzed** on a scale of Fair, Good, Very Good and Excellent. To promote easy visualization of the symmetry, the image is colorized and divided into eight equal parts; **the more even the pattern in each section, the better the Optical Symmetry.**

What is Scintillation?

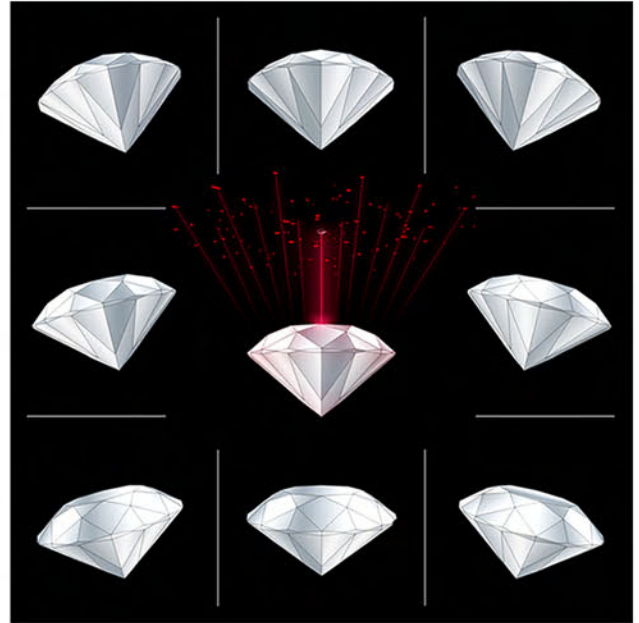
Scintillation is the **sparkling flashes of light seen when a diamond moves**. Because diamonds are never viewed from just one angle, Scintillation considers the overall light return from a diamond when viewed from different angles. **Gemprint® Light Performance captures the light return of the diamond in nine different positions**, which are the nine images seen in the Scintillation section of this report. The image to the upper right illustrates a diamond angled in the nine different positions.

The ideal way to view Scintillation is when the diamond is in motion. A **video of the Gemprint Light Performance Scintillation of this diamond is available to view online at www.Gemprint.com/LP.**



How Do Proportions Affect Light Return?

For more than one hundred years, mathematicians and diamond cutters have understood the important role that the **critical angle** of diamond plays in creating a brilliant, well cut diamond. The critical angle (*incident pavilion angles*) determines if light entering through the crown (top) is **reflected back through the crown or leaked out through the pavilion** (bottom). The images of shallow and deep cut diamonds above illustrate how Gemprint's direct assessment of light return correlates to well documented cutting standards.



Light Return and Optical Symmetry Grading Scales

