

Four C's of Diamonds

Cut, Clarity, Color and Carat

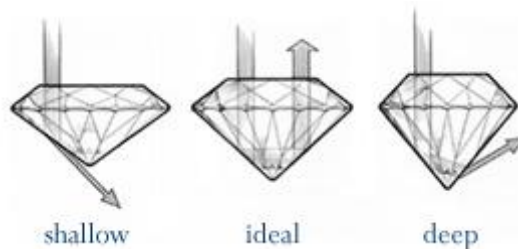
When buying a diamond there are four points you should consider. These are collectively known as the four C's and they are [Cut](#) (an aspect directly influenced by man), [Clarity](#), [Color](#), and [Carat](#) (of which the last three are dictated by nature).

Cut

The cut of a diamond refers to the symmetry and proportions of the stone. Cut is what gives the diamond its brilliance and fire. The shape that a diamond is cut into is determined by the original form of the uncut diamond, which is referred to as "rough". All diamond shapes other than round are referred to as "fancy shaped" diamonds. Some examples of fancy shaped diamonds can be seen below.



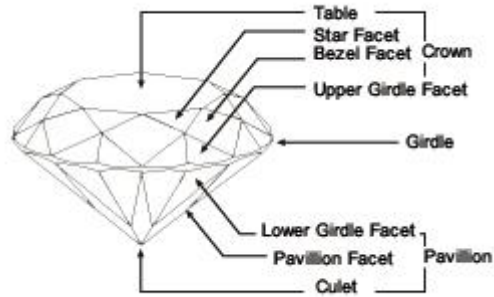
The width and depth of a diamond have the greatest effect on how light travels within the diamond, and how it exits in the form of brilliance. If it is cut too shallow, light is lost out the sides causing the diamond to lose its brilliance. If it is cut too deep, then light escapes out the bottom causing the diamond to appear dark and dull.



Diamonds are usually cut with 58 separate flat surfaces or facets. The facets are placed at precise angles in relationship to each other and are based on a mathematical formula. The formula is designed to maximize the amount of light reflected through the diamond.

The critical angle of diamond is 24.5° to the normal (imaginary line perpendicular to the interface of diamond and air). Diamond, with its small critical angle relative to other gems, creates a smaller window through which the light can escape. This is one reason why diamond is potentially more brilliant than most other gems.

When light strikes a diamond facet on the crown, approximately 17% of the light rays are reflected back, 83% of the rays enter the diamond. Once inside the diamond, the light can exit only if it strikes the interface between diamond and air within the critical angle. If it strikes at a greater angle, all of the light is reflected back into the stone creating what is called Total Reflection.



In a well cut diamond, a high percentage of light entering through the crown starts out by striking the pavilion outside the critical angle. Thus it is totally reflected to the other side of the pavilion. There it strikes outside the critical angle again, where it is again totally reflected, but this time towards the crown, where it strikes within the critical angle and leaves the diamond in a direction where it can be seen.

Clarity

Clarity refers to the presence of internal features such as crystal irregularities, breaks or foreign bodies, called inclusions and to external imperfections such as scratches, small nicks and chips, called blemishes.

Clarity is determined by an expert while viewing under 10 power magnification and is graded using a precise and complex method of evaluating the size, location, and visibility of inclusions or blemishes. While a higher clarity diamond is more desirable it does not always mean it will be more beautiful. Clarity does not really improve the appearance of a diamond but rather the rarity and price.



Flawless (FL)

If Diamonds show no blemishes or inclusions when examined by a skilled grader under 10x magnification.



Internally Flawless (IF)

If Diamonds show no inclusions and only insignificant blemishes, when examined by a skilled grader under 10x magnification.

**Very Very Slightly Included 1 (VVS1)**

Diamonds contain minute inclusions that are extremely difficult for even a skilled grader to locate under 10x magnification. Visible only from the pavilion, or a blemish, small enough to be removed by minor repolishing.

**Very Very Slightly Included 2 (VVS2)**

Diamonds contain minute inclusions that are very difficult for a skilled grader to locate under 10x magnification.

**Very Slightly Included 1 (VS1)**

Diamonds contain minor inclusions that are difficult for a skilled grader to see under 10x magnification.

**Very Slightly Included 2 (VS2)**

Diamonds contain minor inclusions that are somewhat easy for a skilled grader to see under 10x magnification.

**Slightly Included 1 (SI1)**

Diamonds contain noticeable inclusions that are easy for a skilled grader to see under 10x magnification.

**Slightly Included 2 (SI2)**

Diamonds contain noticeable inclusions that are very easy for a skilled grader to see under 10x magnification. Some inclusions under certain conditions can be seen with the unaided eye.

**Imperfect 1 (I1)**

Diamonds contain inclusions which are obvious to a trained grader under 10x magnification and the beauty or durability is somewhat affected. Inclusions can be seen with the unaided eye.

**Imperfect 2 (I2)**

Diamonds contain inclusions, which are obvious to a trained grader under 10x magnification and the beauty or durability is seriously affected. Inclusions are easy to see with the unaided eye.

**Imperfect 3 (I3)**

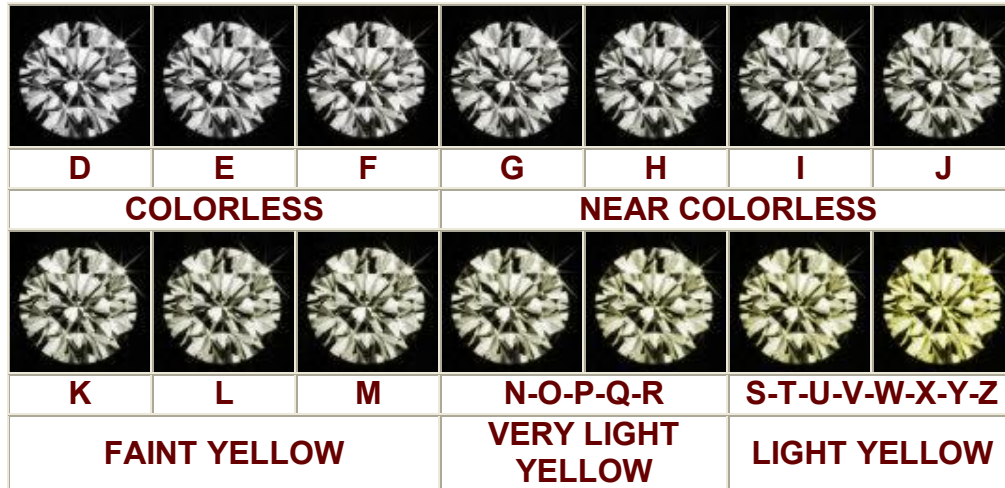
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Color

The best color is no color. Diamonds allow light to be reflected and dispersed as a rainbow of color. This light dispersion, or color flash, has no effect on the technical grading of color. The absolute finest colorless stone carries a D rating, descending through each letter of the alphabet to Z, designating a diamond of light yellow, brown, or gray.

This body color may be caused by the presence of trace elements,

such as nitrogen, within the atomic framework of the carbon crystal. These trace elements are so minute that they are scientifically measured in parts per million (ppm). As the body color becomes more intense, the grade for color descends the scale. These gradations are so minute and precise that discerning a single grade (even by an expert) under less than ideal laboratory conditions is extremely difficult.



It is always best to compare diamonds graded by either the Gemological Institute of America (GIA) or the American Gem Society (AGS) for accurate color grading. When directly comparing diamonds for color, most consumers are unable to detect a difference unless they are at least two or three color grades apart.

Any grade after Z is considered a fancy color. These rarely occurring colors are evaluated by a different set of color standards taking into consideration various factors such as hue and saturation. Shades of pink, red, blue, green, and amber have been found. Some fancy colors can cost hundreds of thousands of dollars for one carat or less!

Carat

The weight of a diamond is expressed in carats. The word carat is derived from the carob tree (*Ceratonia siliqua*). The pods of the carob, or locust tree contain tiny seeds, which are remarkably consistent in weight. These seeds were used by early traders to weigh their diamonds until the system was standardized.

The carat is now a metric weight measurement, which is exactly 0.2 grams or 200 milligrams. The carat is divided into 100 points. For example, a half carat diamond is 50 points, written as 0.50 carat.

Diamonds are sold by weight, but the value of a diamond is really more a

Common Name	Weight Range
Tenths	0.09-0.11
Eighths	0.12-0.14
Sixths	0.15-0.17
Quarters	0.23-0.29
Thirds	0.30-0.37
Three-Eighths	0.38-0.43
Light-Halves	0.44-0.49

reflection of its rarity. A five carat diamond does not simply cost five times as much as a one carat stone of the same cut, color and clarity. A five carat diamond demands a much higher price, since very few are found. Therefore, diamonds are categorized and priced in weight ranges. The price of the category is expressed as 'per carat'. These weight categories can vary slightly between dealers but are usually very similar.

Cutters are motivated not to drop in weight category, and not to drop just below what are often called the "magic sizes" since people tend to like even fractions or whole numbers such as half a carat, three-quarter carat, and one carat.

Halves	0.50-0.69
Three-Quarters	0.70-0.83
Seven-Eighths	0.84-0.89
Nine-Tenths	0.90-0.99
1 Carat	1.00-1.24
1¼ Carat	1.25-1.49
1½ Carat	1.50-1.74
1¾ Carat	1.75-1.99
2 Carat	2.00-2.49
2½ Carat	2.50-2.99
3 Carat	3.00-3.99
4 Carat	4.00-4.99