

April 27, 2026



Cut 8X

Growth Method	CVD
Chemical Vapor Deposition (CVD)	Highly controlled environment, allowing for precise control over film thickness and composition.
Sputtering	Allows for deposition of a wide range of materials, but may result in higher defect density compared to CVD.
Molecular Beam Epitaxy (MBE)	Provides excellent control over stoichiometry and interface quality, but is typically more expensive than CVD.
Pulsed Laser Deposition (PLD)	Can produce high-quality films with complex compositions, but often results in lower deposition rates.
Atomic Layer Deposition (ALD)	Enables atomic-level control of film thickness and composition, making it ideal for thin, uniform layers.
Electrodeposition	A cost-effective method for depositing conductive films, but may require post-processing to improve surface morphology.
Hydrothermal Synthesis	Often used for growing nanoscale structures like nanotubes or nanowires, which can enhance device performance.
Sol-gel Process	Common for depositing dielectric or insulating films, but may require high-temperature annealing.
Spin Coating	A simple, low-cost technique for depositing uniform thin films, but may have limited material compatibility.
Dip Coating	Similar to spin coating, but allows for thicker films and potentially different microstructures.
Langmuir-Blodgett	Used for depositing highly ordered monolayers or ultrathin films of organic materials.
Self-assembly	Leverages molecular interactions to form ordered structures, often used for creating functionalized surfaces.
Epitaxial Growth	Involves growing a new layer on top of an existing crystal lattice, ensuring structural continuity.
Vapor-Liquid-Solid (VLS)	A common method for synthesizing nanowires, where a liquid catalyst facilitates growth from vapor.
Chemical Bath Deposition (CBD)	A simple, solution-based method for depositing various materials, often used for coatings.
Electroless Plating	A chemical process for depositing metal films without the need for an external current source.
Thermal Evaporation	An older method for depositing thin films, but generally less precise than modern techniques like ALD or MBE.
Physical Vapor Deposition (PVD)	A broad category encompassing thermal evaporation and sputtering, used for depositing metallic films.
Chemical Solution Deposition (CSD)	Involves dissolving precursors in a solvent followed by deposition onto a substrate, often used for oxides.
Layer-by-layer (LbL) Assembly	A technique for building up multilayered structures molecule by molecule, offering exceptional precision.
Nanoparticle Assembly	Utilizes pre-synthesized nanoparticles to build up a film, allowing for tailored properties.
Bubble Langmuir-Blodgett	A variation of LbL assembly using air bubbles to facilitate the transfer of molecules.
Interfacial Polymerization	Occurs at the interface between two immiscible liquids, leading to the formation of interfacial polymers.
Microfluidic Synthesis	Combines precise fluid control with synthesis, enabling the creation of well-defined nanostructures.
Biological Synthesis	Leverages biological processes, such as using bacteria or enzymes, to synthesize materials.
Photodeposition	Uses light to initiate the deposition of a film from a precursor solution.
Electrophoretic Deposition (EPD)	Applies an electric field to drive charged particles or ions toward a substrate for deposition.
Electrochemical Atomic Layer Deposition (ECALD)	A hybrid technique combining electrochemistry with ALD principles for improved control.
Electrochemical Vapor Deposition (ECVD)	Combines electrochemical reactions with vapor-phase growth for unique material properties.
Electrochromic Deposition	Specifically targets the deposition of electrochromic materials for smart windows or displays.
Electrodeposition of Nanoparticles	Focuses on controlling the size and shape of deposited nanoparticles through potential control.
Electroless Electrodeposition	A specialized form of electrodeposition that does not rely on an external circuit.
Electrochemical Synthesis	A general term for various synthesis methods utilizing electrochemical principles.
Electrochemical Etching	The opposite of deposition, used to remove material from a substrate via electrochemical means.
Electrochemical Anodization	Used to grow oxide layers on certain metals, such as aluminum, under controlled conditions.
Electrochemical Polishing	Improves the surface finish of a metal part by removing surface irregularities electrochemically.
Electrochemical Refining	A process used in metallurgy to purify metals by dissolving impure anodes and depositing pure metal.
Electrochemical Sensing	Not a deposition method, but a related application area where electrochemical principles are used for detection.
Electrochemical Energy Storage	

The logo is a circular seal. At the top, it says "GCAI" in a large, serif font, with "BY SARKIS" in a smaller font below it. In the center is a detailed line drawing of a diamond with its facets clearly marked. At the bottom, the words "CONSUMER 4CS GRADING GUARANTEE" are written in a circular path around the diamond.

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[illegible]

P Poor **F** Fair **G** Good **VG** Very Good **EX** Excellent

Technical drawing of a diamond showing its proportions and dimensions. The drawing includes labels for width (8.16mm), length (4.86mm), depth (3.51mm), and various angles (35.0°, 40.4°). It also shows percentages for different facets (60%, 14.5%, 43.0%, 3.9%, 61.3%, 0.3%).

DIAMOND SHAPES



CARAT WEIGHT SIZES

Carat Weight	2.50	2.00	1.50	1.00	0.75	0.50
Approx. Size						
Diameter	8.60mm	8.00mm	7.30mm	6.40mm	5.80mm	5.10mm

DIAMOND CLARITY GRADING SCALE

FL	IF	VVS1	VVS2	VS1	VS2	S11	S12	I1	I2	I3
FLAWLESS - INTERNALLY FL.		VERY VERY SLIGHTLY INCLUDED		VERY SLIGHTLY INCLUDED		SLIGHTLY INCLUDED				INCLUDED/PIQUE

DIAMOND COLOR GRADING SCALE



D - Z DIAMOND COLOR GRADING SCALE

DIAMOND FLUORESCENCE GRADING SCALE



DIAMOND POLISH & SYMMETRY GRADING SCALE

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
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BRILLIANT CUT DIAGRAM



BUY WITH
CONFIDENCE

GCAL BY SARINE™
4Cs GRADING GUARANTEE

The GCAL by Sarine™ philosophy is simple: we believe consumers should feel confident about their lab grown diamond purchase, in the same way we believe experts should be accountable and stand behind their work.

This is why your lab grown diamond is protected by a zero tolerance, money-backed grading guarantee. You should know that the GCAL by Sarine™ 4Cs Grading Certificate is the only 4Cs grading certificate in the world that comes with a guarantee that ensures the accuracy of the certified lab grown diamonds' weight and quality grades. If the carat weight or any of the cut, color, or clarity grades provided in this GCAL by Sarine™ 4Cs Grading Certificate is lower than the weight or quality grade of your certified lab grown diamond, GCAL by Sarine™ will reimburse you the difference between what you paid for the lab grown diamond and the current fair value of an equivalent lab grown diamond in the market in which it was purchased, pursuant to the newly established grades. Kindly see additional details, including the limitations of the guarantee, at [GCALUSA.com](https://www.gcalusa.com).

MISSION STATEMENT

To provide the most accurate and consistent gemological grading, with uncompromising integrity and unparalleled customer service.

GEMPRINT®

Having a traceable, unique “fingerprint” of your lab grown diamond adds future protection to your investment, as well as peace of mind. GCAL by Sarine™ records the distinctive Gemprint of every diamond we certify. This patented technology for positive identification is recognized worldwide as forensic evidence and identification. Register your lab grown diamond at [GEMPRINT.com](https://www.gemprint.com)

CERTIFICATE VERIFICATION

You can verify the authenticity of this certificate by entering your GCAL by Sarine™ Certificate Number at [GCALUSA.com](https://www.gcalusa.com). You can also download a complimentary digital copy of this document to send to your insurance company.



GUARANTEED
CERTIFICATE



LAB GROWN



8X® is the highest achievement in precision diamond cutting. The **GCAL 8X** Ultimate Diamond Cut Grading System encompasses all aspects of diamond CUT quality assessment. Your lab Grown diamond has achieved grades of Excellent in all eight aspects of CUT quality assessment. As a result, this lab grown diamond is recognized for its extraordinary brilliance and beauty.

PHYSICAL EXCELLENCE

The first three of the 8X grading factors analyze the exactness of the physical surface, the facet shapes, as well as the angles. This includes the Polish, External Symmetry and Proportions.

Decades of meticulous mathematical calculations have determined the narrow proportion ranges required to produce superior cut diamonds. Each shape has been studied individually to find the most aesthetically pleasing parameters. Some of the factors considered are listed below.

To view the proportions specifications for each shape, please visit our website [GCALUSA.COM](https://www.gcalusa.com)

Table %	Lower Girdle Facet Length
Depth %	Star Length
Crown Angle/Height	Girdle Thickness
Pavilion Angle/Height	Culet Size

LIGHT PERFORMANCE EXCELLENCE

The next three of the 8X grading factors are Brilliance, Fire and Scintillation, which analyze the light handling ability of your lab grown diamond. The combination of these factors is the essence of what makes any diamond visibly shine, dance and sparkle from across a room. Fire and Scintillation are graded while the diamond is in motion and interacting with light. View the Fire and Scintillation videos of this lab grown diamond at [GCALUSA.com](https://www.gcalusa.com) or by scanning the QR code on this certificate.

OPTICAL EXCELLENCE

The last two 8X grading factors consider optical excellence. These factors scrutinize the craftsmanship, the precise alignment of the crown and pavilion facets, the shape outline, and the length to width ratio, ensuring the lab grown diamond achieves aesthetic perfection.

Grading scales for each of the 8X grading factors can be viewed at [GCALUSA.com](https://www.gcalusa.com)

Independently Graded and Guaranteed by GCAL by Sarine™