

General Recommendations

If possible, leave the original masking on the sheet during cutting operations. In addition, cover working surfaces with a soft, clean cloth to prevent scratching. Use sharp, clean blades, holding the sheet securely in place. Bring the blade to full speed before starting the cut and use compressed air to cool the blade and remove chips. Wear proper safety equipment including safety glasses, gloves, and protective clothing as required by local regulations.

Most saws commonly used for wood or metal should satisfactorily cut sheets made by Lumicor. These include circular saws, band saws, saber saws, jigsaws, hacksaws, or handsaws. However, circular saws and band saws usually produce smoother, cleaner, faster cuts. Routing is also a common technique.

For the highest quality cut, use a triple-chip style carbide-tipped blade commonly used for plastics. *Otherwise, chipping and irregular cuts may result.* Use a slow and consistent feed rate.

Several sheets made by Lumicor can only be cut by a wet saw or water-jet cutter; these are Lumicor's Industrial and Natural families, including encapsulated glass, seashells, or other hard materials.

Circular Saws

- Number of teeth—2 to 4 teeth per 25 mm (per in.).
- Blade thickness— 2.5 mm (3/32 in.) for single sheets in thicknesses of 1 to 10 mm (0.040 to 0.375 in.) ; 3 mm (1/8 in.) blade should be used for cutting thicker sheet.
- Blade tooth rake angle—5 to 10 degrees.
- Depth of cut—for best results, allow the blade to protrude through the piece by no more than 3 mm (1/8 in.) This will minimize the chance of creating a chipped edge.
- For circular saws, the following blade speeds are recommended:

Blade Diameter, mm (in.)	Blade Speed, rpm
100 (3.5-4) Trimming Saw use Wood Combination Blade	10,000
180 (7.25)	5,000
200 (8)	4,300
250 (10)	3,400
300 (12)	2,900
350 (14)	2,500

Jigsaws

Always hold your work securely in place. This is especially important when using a saber saw or jigsaw. Excessive vibration can cause cracking and/or possible injury.

- A blade with 6 to 10 teeth per 25 mm (per in.) works well with the orbital action setting at zero.
- A scroll-type blade with 12 to 20 teeth per 25 mm (per

Routers

Routing with sharp, two-flute, straight cutters produces very smooth edges. Also spiral-cut router bits have been found to work successfully depending on the application. It is especially useful for trimming the edges of flat or formed parts, or parts too large or irregular in shape to cut with a band saw. Portable, overarm, and small table routers work equally well.

- Use router speeds of 16,000 to 25,000 rpm to produce good, clean edges.
- Feed the sheet into the router slowly to avoid excessive frictional heating, shattering, or chipping.
- Use a suitable jig to support the sheet during routing.
- Use compressed air to cool the bit and to aid in chip removal.

Troubleshooting Guide for Cutting Lumicor

Problem	Possible Cause	Possible Solution
Rough or chipped edges	High Feed rate Sheet vibration Blade protrusion Broken teeth Blade too coarse	Reduce feed rate. Secure sheet firmly. Limit to maximum of 3mm (1/8in.). Replace blade. Use more teeth/in. (mm).
Cracking	Blade and fence not parallel Sheet vibration Feed rate too high	Realign blade and fence. Secure sheet firmly. Reduce feed rate.
Surface scratching	No masking Dirty work surface Jigs/fixtures are nicked, burred	If possible, leave masking intact. Clean work surface. File, sand, or polish to remove burrs.
Blade gums up	Dull blade Inconsistent feed rate Feed rate too slow Improper blade	Sharpen or replace blade. Use steady, even feed rate. Increase feed rate. Use blade specified.
Dust buildup	Dull blade Clogged blade Static charge on sheet Masking removed	Sharpen or replace blade. Clean or replace blade. Wipe with damp cloth. Leave masking in place.

Do

- Practice on pieces of scrap before cutting parts.
- Use recommended saw blades.
- Use slow, consistent feed rate.
- Hold sheet firmly while cutting to minimize vibration.
- Use compressed air to minimize heat buildup, especially for sheet more than 5 mm (0.195 in.) thick.
- Use just enough clamp pressure to prevent vibration.
- Feed against the rotation of the blade or tool.

Don't

- Cut Lumicor sheet without wearing proper safety equipment.
- Cut Lumicor sheet with a dull blade or cutter.
- Apply excessive clamping pressure.
- Use a blade with side-set teeth.
- Scribe-break sheet.
- Remove safety guards from equipment.

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