

SewGlo™ ILLUMINATED THREAD

SEWING GUIDE

The SewGlo™ HD sewing thread is 0.48mm in diameter (slightly larger than the 0.3mm embroidery variant), providing greater break strength for machine sewing applications. This guide covers settings for sewing machines, tension specifications, fabric compatibility, and critical handling notes from production experience. Use as a reference; variables across machine makes and fabric types will require some calibration.

SEWING MACHINE SETTINGS

- 1 Needle Type:** #140/22 or larger. Use a slant hole needle for leather applications on industrial machines.
- 2 Tension: lower is better.** Measured values on industrial machines: 3.5 (still state), 0.5 (while sewing). Always start at the lowest tension setting and increase only as needed.

- 3 Speed: low to medium.** For leather on an industrial machine, run in first gear. High-speed passes increase thread tension, which can cause breakage.
- 4 Automatic Cutting:** OFF. Manual cutting is required to leave sufficient lead length (10-20cm) for connections.

TENSION REFERENCE

Tension should be adjusted based on fabric texture and density. The values below were measured on soft woven fabric using an industrial sewing machine tension gauge.

Measurement	Value
Still state (not sewing)	3.5
Active sewing state	0.5

When pulling the thread manually, it should move smoothly with low resistance. The back side of the seam should display: upper thread (2 passes) over bottom thread (1 pass).

FABRIC AND BOTTOM YARN

Recommended Fabrics

TPU film, woven fabrics, and artificial leather are compatible. Artificial leather is easier to work with than natural leather. For natural leather, use SewGlo™ HD (sewing thread) rather than the embroidery variant, as the higher tensile strength handles the pull of dense materials.

For very dense or hard leathers, pre-stitching with standard thread first, removing it, then sewing with SewGlo™ can help establish a clean path and reduce breakage risk.

Bottom Yarn

Use standard yarns such as cotton. Match the bottom yarn fineness to SewGlo™ thread at approximately 0.4mm for best stitch balance.

Stitch Type

Zigzag stitch is recommended for most fabric applications; it secures the thread to the surface without requiring the needle to pierce through the fiber itself. This is the most reliable approach for avoiding short circuits.

CRITICAL NOTES

- 1 Do not let the needle pierce the SewGlo™ fiber.** A needle passing through the conductor creates a short circuit and the thread will not illuminate. The needle should travel alongside the fiber, not through it.
- 2 Single continuous thread under 10m for uniform luminance.** Parallel connections (within 10m per segment) are suitable for complex patterns requiring multiple passes.
- 3 Leave 10-20cm of thread at each connection end.** Do not trim flush. The exposed tail is needed to strip back and connect to the power lead.
- 4 Thread can be rewound onto standard sewing cones for use with industrial or production-volume sewing equipment.**

CONNECTING

For step-by-step connection instructions covering lead preparation, conductor separation, soldering, and insulation, visit our Learning Center. Video guides are available alongside written instructions.

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Full guides, connection videos, and integration tips: ellumiglow.com/pages/el-guide