Successful Collaboration

Full plastic molding responsibility to meet critical milestones on a challenging project.

eNeura®

HIGHLIGHTS

- Close partnership
- Successful collaboration
- Early involvement
- Challenging part design
- High-level support
- Design for Manufacturability
- Mold Flow Analysis
- High-level design aesthetic
- Design vs. moldability
- Nominal wall vs. flow fronts
- Alternative gate locations
- Strenuous ISO 13485:2003 validation
- Full plastic molding responsibility

Founded in 1953, PTA Plastics is an employee owned plastics injection molding solutions provider for complex industrial design products. PTA Plastics provides our strategic partners with Design & Engineering Assistance, In-House Mold-Making, Specialty Molding Processes, Injection Molding, Process Validation and Value-Added Services. PTA Plastics has facilities in Oxford, CT and Longmont, CO.

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To bring its second generation device to market, eNeura chose PTA Plastics as its plastics manufacturing partner. PTA worked in close partnership with both eNeura and LUNAR, a premier design firm engaged by eNeura, with whom PTA has had a long history of successful collaboration.

This tight partnership, and specifically PTA's early involvement in the design of challenging parts, led to the critical success of eNeura's new product: the sTMS mini™--a clinically proven, non-drug option for the treatment and prevention of migraine headaches. This smaller, more ergonomic version of eNeura's technology is a portable delivery system for single-pulse Transcranial Magnetic Stimulation with a world-class design.

PTA Plastics was involved at the front-end, providing a high level of support including design for manufacturability and assembly (DFMA), mold flow analysis and design options to achieve a high level design aesthetic. PTA advised on areas to ensure a high quality of parts where surface appearance was sink-free, avoiding blush, mismatch, flash and knit lines. PTA reviewed design vs. moldability, nominal wall vs. flow fronts, and alternative gate locations, all with significant impact on part aesthetics. All this while also completing strenuous ISO 13485:2003 validation to meet stringent FDA medical regulatory requirements.

The sTMS mini's user interface was especially challenging, calling for a magical white "dead front", where lighted icons magically appear only when needed. Many design challenges were confronted and solved to allow for maximum light transmission from the LEDs through the nominal wall of logos to achieve the dead front effect. Considerations included analysis of gate location, flow, and pack to determine the impact and risk to this primary user interface.

Internal molded part-tolerances were essential to allow the electronics to fit in a critically negotiated mechanical and electrical space volume. eNeura and LUNAR created CAD models that were finalized down to every screw and electrical component to ensure proper clearance between plastic and electrical components, achieving device robustness in a high magnetic field environment. Both companies worked closely with PTA to ensure tolerances could be held in high volume production.

To summarize, eNeura sought a manufacturing partner able to assume full plastic molding responsibility for the project who was committed to meeting critical milestones on a challenging project, and PTA is proud to have provided this service. The outcome of the successful partnership between client, design firm, and manufacturer is a device we are all proud of, the patented sTMS mini providing safe and clinically proven treatment for migraine sufferers.