

# DIY or Lightguide Manufacturer:

Which is Right for Your  
Custom Lighting Needs?



**01**

**Introduction**

# Introduction

One of the toughest decisions businesses face across all industries is whether to tackle a project internally with a do-it-yourself attitude, or to work with a partner, contracting out a project to ensure the quality of the result.

There are advantages and disadvantages on both sides of the fence, so it's not always an easy "yes" or "no" situation. What makes sense for someone else might not make sense for you, and vice versa. That's why it's essential to consider the pros and cons of both DIY projects and working with manufacturers.

In this guide, we'll walk through all the arguments, and hopefully you'll come away with a better understanding of what may be the best course of action for you.



02

**D.I.Y. Pros**

# D.I.Y Pros

There are plenty of upsides to handling a lightguide project in house. Here are some of the most notable ones to consider:

## Less Expensive

Designing and manufacturing a lightguide internally will likely produce a less expensive upfront cost. This is because there's no markup from the manufacturer and overall costs are often already embedded in the bottom line.

## Own the Design

If you design something internally, then the final product is yours. That means there's no need to sign nondisclosure agreements (NDAs), or to share a product or design with an outside party. The design and the tooling are yours and yours alone.

## Quick Completion

Handling lightguide production in house likely speeds up the process. Communication is managed internally, and there's no interference from a partner company. Further, a partner may be busy or backed up, or otherwise be unable to prioritize your project adequately. Keeping a project internal means you control and schedule everything yourself. Another timesaving attribute is that you can skip the process of factory inspections and vetting out vendors.

## Improving In-House Capabilities

Even if there are some growing pains along the way, if you take on a new project in house and successfully achieve your end result, you've made your company stronger. You've developed a new capability, and have invested in the tools, technology, staff, and other resources, to continue meeting that need in the future.

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**D.I.Y. Cons**

# D.I.Y. Cons

While weighing all of the pros of DIY, it's also important to consider the potential downsides. Keep the following in mind:

## Possible IP Issues

We mentioned the upside of avoiding supplier IP constraints above as a positive. However, you may run afoul of another company's IP if you produce something in house that is too similar to someone else's design or technology. That could result in repercussions including IP infringement lawsuits, cease-and-desist orders, fines, and/or delays.

## Lack of Experience

Anytime you're dealing with an unfamiliar form of technology, there's going to be a steep learning curve. You may have a certain level of knowledge and capabilities, but may not have the full scope of expertise that a manufacturer who specializes in the field would.

## Lack of Proper Tools

Those specialists are also equipped with all the latest and greatest tools at their disposal. This includes design software, as well as molding machines, and injection-molding tools that can produce high-end optical grade finishes. Further, optical inspection requires additional equipment, including dark rooms, and other machinery may require clean rooms for proper quality control.

## Lack of Scale

Even if some measure of the correct machines, tools, software and so forth is all on hand, can you scale it up to meet the scope of your project? Major manufacturers will be able to handle increased loads, while still producing efficient and effective results. Costs even go down with higher quantities. However, if you go DIY, you may quickly max out your internal capabilities and be unable to meet demand.

# D.I.Y. Cons

Continued...

## Experienced Staff

Ultimately, due to the above issues, including potential shortcomings of experience, tools, software, and the like, final product quality could be diminished. If any part of the production process fails or produces a less than perfect result, the end product isn't going to work as originally intended. Properly maximizing light extraction, efficiency, and distribution requires great precision at every step.

## Reduced Training & Investment

Training, software, and development of new processes and tools may increase the cost of DIY far beyond the cost of sourcing from a specialized supplier



**04**

**Manufacturer Pros**

# Manufacturer Pros

Now that the in-house side has been considered, let's shift perspectives and consider the advantages of deciding to work with a lightguide manufacturer. Here are some of the biggest benefits:

## Proven Expertise

Expertise, along with a proven track record, need to be at the top of the list. This does more than provide peace of mind, although that helps, too. Ultimately, it results in efficient, reliable and high quality manufacturing, with superior yield rates and end results.

## Design & Development

Having access to the best software and tools is a huge part of the design and development process. For an in-house team, you could simply be priced out of access to the best products. For instance, OptisWorks can cost \$30,000 or more for a single user license. That level of upfront investment makes getting started on an in-house project cost prohibitive for many companies.

## Knowledge of Design Limits

Keep in mind that a manufacturer will also realize what's not possible. A design may look great, but then not be able to be properly built or replicated, which means it's actually worthless. Knowing what's unachievable is as important as knowing what is doable in many instances. This can save you the time and hassle of going down a path that was never going to work, and then needing to start from scratch.

## Technology

An experienced manufacturer and industry leader will be familiar with the latest technological advancements in the field. They'll be employing the best tools and machinery, and will be able to develop their own cutting-edge technology and IP, while staying abreast of important developments elsewhere.

# Manufacturer Pro

Continued...

## Experienced Staff

Having access to experienced staff is just as important as having access to the experienced company as a whole. Large manufacturers will be able to assign you individual engineers who will be responsible for your project, as well as communication along the way. Personnel experience cannot be easily made up for or replaced.

## Reduced Training & Investment

Working with a manufacturer also means there's a reduced need and reduced cost for investment in training. Your manufacturer will already be bringing in the expertise and experience to get the job done. If you're starting on something new internally, you not only need to invest in the software and machinery, but also in its usage. Time is money, and training courses plus man-hours on learning, along with trial and error, quickly add up.

## Scalability

As your needs grow, a large manufacturer should be able to grow with you. They can scale up and continue delivering the finished product on schedule, and with the same quality and outcome.



**05**

**Manufacturer Cons**

# Manufacturer Cons

Now, what about the potential disadvantages of working with a manufacturer? Consider the following before finalizing your decision:

## Potential Higher Cost

In certain instances, working with a manufacturer could be more expensive. Essentially, you're also paying for a service, and a level of expertise, beyond the individual components. Consider a home cooked meal versus eating out at a restaurant. You may be able to buy the same ingredients at a cheaper cost, but were you able to produce the same results, with the same service? Of course, that cost may be equaled out, and in many cases far exceeded, by the savings achieved by the manufacturer's scale, and by avoiding the need to purchase software and tools, and to invest in training and staff.

## The Cost of IP

Another potential added cost is the use of a company's IP. This might deliver to you the exact quality or capability that you've been seeking, but if it's protected IP, it comes with a price tag.

## International Logistics

If a manufacturer has their facilities overseas, as most do, there are a few logistical concerns. This includes the costs of shipping, packaging, and transportation, as well as potential for duties or taxes to import these products. International shipping also adds time to the equation as well. In the current political climate across the world, there's also a level of uncertainty as to what may change in terms of policies and costs looking ahead.

## Co-Development Challenges

Anytime that multiple engineers from different teams have to work on a project together, there's the potential for communication issues. That also means there's the potential for delays. This is particularly true when working with an Asia-based manufacturer with no local representatives, as the time zone challenge alone makes it difficult to get on the same page. That's why it's essential that if you do work with a manufacturer, you select one who's able to provide personal attention and ongoing support, including more locally accessible staff, at every step along the way.

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Summary

# Summary

What have we learned so far? Let's recap our analysis:

## D.I.Y Pros

- Less Expensive
- Own the Design
- Quick Completion
- Improving In-House Capabilities

## Manufacturer Pros

- Proven Expertise
- Design & Development
- Knowledge of Design Limits
- Technology
- Experienced Staff
- Reduced Training & Investment
- Scalability

## D.I.Y. Cons

- Possible IP Issues
- Lack of Experience
- Lack of Proper Tools
- Lack of Scale
- Final Product Quality
- Cost of Development

## Manufacturer Cons

- Potential Higher Cost
- The Cost of IP
- International Logistics
- Co-Development Challenges

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**Conclusion**

# Conclusion

There's clearly a great deal to consider, and ultimately, the course of action you choose will depend on what makes sense for you and your company.

If DIY isn't going to cut it any longer, then download:

***"5 Ways Global Lighting Technologies Can Reinvent Your Custom Lighting Project"***

You'll learn more about how we can take charge of your next project, meet its needs, and exceed your expectations to deliver spectacular, high quality results.

Visit [www.GLThome.com/5-ways](http://www.GLThome.com/5-ways)  
or call 440.922.4584

