

## Advancing Precision and Speed Transitioning to Fully Automated Visual Inspection in Contact Lens Manufacturing

In the dynamic landscape of contact lens manufacturing, optimizing efficiency and maintaining uncompromising quality standards are paramount for success. This case study delves into the journey of a large contact lens manufacturer as they transition from manual inspection processes to the integration of a fully automated visual inspection system. By embracing cutting-edge technology, the company aimed to enhance production speed, increase throughput, and uphold the highest standards of product quality.



### Background

The contact lens producer manufacture, distribute, and sell a wide range of contact lenses designed to correct vision impairments, including myopia, hyperopia, astigmatism, and presbyopia. Due to increasing volumes required, the manufacturer wanted to move to more automated vision systems for inspection of their lenses.



### Challenges Faced

1

#### Manual Inspection Constraints

The limitations of the current manual inspection, include human error, variability in results, and constraints on production speed.

2

#### Production Bottlenecks

The manual inspection process was beginning to create serious bottlenecks in production speeds, hindering throughput and scalability.

3

#### Quality Assurance Imperatives

The contact lens manufacturer had to adhere to stringent quality control measures to meet regulatory requirements and maintain brand reputation.

### The Solution

The adoption of an IVS fully automated visual inspection system emerged as the optimal solution to address the challenges faced by the contact lens manufacturer. This system utilizes advanced non-contact imaging technology, artificial intelligence, and machine learning algorithms to conduct precise and rapid inspections of every contact lens produced, at high speed.

## Key Benefits



### Accelerated Production Speed

The automated visual inspection system enhances production speed by swiftly analyzing each lens, minimizing downtime, and increasing throughput.



### Enhanced Accuracy and Consistency

The system can detect even the minutest lens defects with unparalleled accuracy, ensuring consistent quality across all lenses.



### Scalability and Flexibility

The automated system facilitates seamless integration into existing production lines, enabling scalability to meet fluctuating demand and adaptability to evolving lens manufacturing processes.



### Regulatory Compliance

The system helps ensure compliance with FDA/GAMP regulatory and validation standards, reducing the risk of non-conformance and potential product recalls. All data and images of lenses can be saved automatically.



## Return on Investment

### Increased Production Efficiency

The IVS system provides a substantial gain in production efficiency through higher throughput, reduced cycle times, and minimized production bottlenecks. According to a report by Deloitte, automation can improve productivity by 20% to 30%.

### Cost Savings

The contact lens manufacturer saved in labor costs, scrap reduction, and operational expenses associated with manual inspection processes. Research by PwC suggests that automation can reduce maintenance costs by 5% to 15%.

### Error Reduction Savings

Automation minimizes human error, leading to fewer lens defects and the need for less rework. Research by McKinsey & Company suggests that automation can reduce errors by up to 90%, resulting in substantial savings associated with rework and waste.

### Market Competitiveness

The improved production speed and enhanced product quality translate into a competitive edge, attracting more customers and driving revenue growth.

## Conclusion

The transition to a fully automated visual inspection system has revolutionized the contact lens manufacturing process for our customer, enabling them to achieve unprecedented levels of precision, speed, and quality. This case study exemplifies the transformative impact of embracing IVS automated contact lens inspection to propel efficiency, innovation, and market leadership in the dynamic landscape of contact lens manufacturing.



Go online to find out more about our extensive range of products and services.  
[www.industrialvision.co.uk](http://www.industrialvision.co.uk)

IVS-CSN-2401

Copyright 2024 Industrial Vision Systems Ltd.  
IVS is a registered trademark of Industrial Vision Systems Ltd.