

How to qualify a safety light curtain as a solution for your application.

Safety Light Curtains provide a non-separating barrier which will detect operators attempting to access hazardous areas of machines. Choosing a safety light curtain for your point of operation or perimeter guarding application is not complicated once you examine the application.

Here are some questions to help qualify Safety Light Curtain applications:

Has a risk assessment been performed on the machine?

A risk assessment is always the first step in determining if an area is hazardous and needs to be guarded. This will also help determine if you need a Type 2 or Type 4 device (IEC 61496).

Is the safety light curtain going to be used for point of operation guarding or for perimeter guarding?

This can affect the choice in the resolution, or the distance between adjacent beams. Point of operation applications would require a 14 mm for finger detection, 30 mm for hand detection, or 50 mm for arm detection. Light curtains can be used in place of doors in perimeter guards on certain applications, and may only need a 2, 3 or 4 beam safety light grid.

What is the size of the opening that needs to be guarded?

This will determine the protection height (distance between the first and last beams) and the range (distance between the emitter and receiver) you will need. There are minimum and maximum distances that light curtains are capable of monitoring.

Can the safety light curtain be placed far enough away to have the hazard stop in time?

Since there is no physical barrier, light curtains must be installed such that enough time is allowed between beam interruption and reaching the hazardous points of the machine, to bring the machine to safe state. The stopping time for the machine and all safety components used need to be known. The stopping time is used in calculating the safety distance.

Do we need to add other physical guards to ensure workers cannot reach over, under, or walk around the light curtain protection field?

A light curtain measure should not be easily defeated by reaching over, under, through or around the monitored infrared beams. In some applications the light curtain may have to be quite some distance from the hazard. To prevent such bypassing, additional measures may need to be taken such as additional light curtains or hard guards, to frame a limited opening for the protection field to cover.

Can someone remain inside the hazardous area, without interrupting the light curtain, and allowing it to be reset?

For a point of operation application this answer must be no. But for a perimeter guard this is expected. In either case, the machine should not be able to be reset from within the hazardous area.

Can the entire hazardous area be seen from the place the machine will be reset?

This is an additional concern for perimeter guarding. Reset controls should be located in a place which provides full line of sight of the entire hazardous area. If there is the possibility of operators being unseen in the hazardous area, then additional measures, such as a double acknowledgement reset, should be used.

Are there any environmental factors such as heat/cold, dust, moisture, vibrations, or required cleaning methods that may adversely affect light curtain performance?

Special accessories may be available to solve some of these issues, such as a vibration dampeners or housings for applications needing IP69 rating. A multi-scan function could solve nuisance trips from dust or debris that temporarily pass through the field.

Will any special operating functions be needed, like blanking or muting?

With the light curtains in place, you may still need to get material through the protected field. Blanking and muting can aid in this while still limiting operators from passing.

PRODUCT SPOTLIGHT



Schmersal Safety Light Curtains

Schmersal offers several series of Safety Light curtains. They feature a compact rectangular profile 28 mm x 33 mm, 4-sided extruded housing for added durability, and LED illuminated endcaps for signaling.

We have a unique Bluetooth interface which provides secure data transmission up to 5 meters to smartphones and tablets. The operational data displayed in the SLC Assist app can help with alignment during installation, troubleshooting faults, and planning service and maintenance.

Our light curtains are available with functions such as start/restart interlock, fixed or floating blanking, contactor control, double reset/acknowledgement, beam coding, muting, cyclic operation, and multi-scan. Selection and configuration of the various integrated functions are made via a simple pushbutton and does not require costly set-up devices or separate software.

We also have a full set of accessories, such as vibrational dampeners, deflection mirrors, mounting posts, and protective housings, including an IP69 rated housing.

Learn more in our [Product Showcase: Safety Light Curtains](#) on our website.

RESOURCES

Here is a collection of reference documents relating to Safety Light Curtains



BROCHURE
Optoelectronic
Safety Devices



ARTICLE
Selection Guidelines for
Safety Light Curtains



ARTICLE
Calculating
Safety Distances

This brochure provides background information on optoelectronic safety devices and highlights our lines of Safety light Curtains, Safety light grids, safety light barriers, and various related accessories. 32 pages.

Safety light curtains are a viable safeguarding option for point of operation or perimeter guarding. This article highlights the four main options to consider in selecting the right Safety Light Curtain for your application.

Applying safeguards to equipment and machines may lead to a false sense of safety if not applied correctly. This paper explores the requirements for the proper placement of safety guards and presence sensing devices.

[Download the brochure](#)

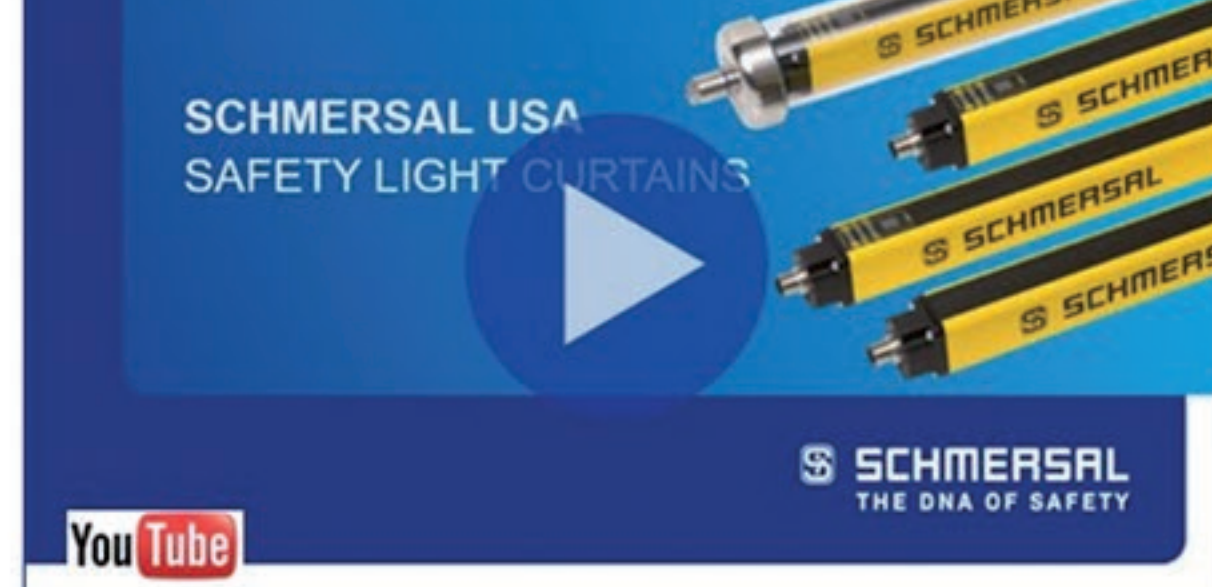
[Download the Article](#)

[Download the Article](#)

VIDEO

Webinar: Safety Light Curtains with Schmersal

Our recent webinar explains how Safety Light Curtains operate, and special functions such as blanking, muting, multi-scan, and double reset. We also review typical applications and what questions to ask to qualify applications. And we conclude with an overview of the Schmersal safety light curtain series, including our Bluetooth communication and SLC Assist App.



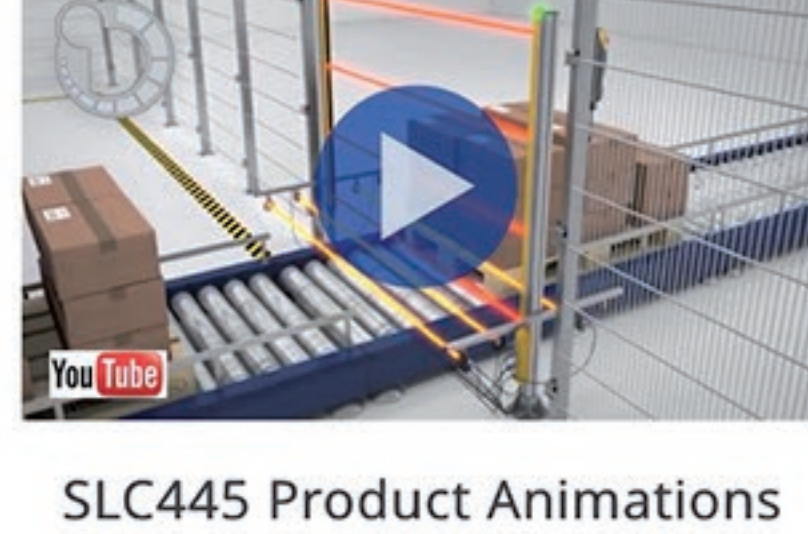
[View on YouTube](#) (Duration 54:02)



SLC Bluetooth App demo



SLC Alignment 101 demo



SLC445 Product Animations

A demonstration of the SLC Assist App for the Safety Light Curtains with Bluetooth.

Steve Lange explains several methods of aligning safety light curtains.

Set-up, muting and multi-scan functions are shown of the SLC445 Safety Light Curtain.

[Watch \(YouTube\)](#)

[Watch \(YouTube\)](#)

[Watch \(YouTube\)](#)

SCHEDULE

Upcoming Machine Safety Webinar: "Why Machine Safety Is Not Complete Without Validation"

Many believe that once a machine is upgraded to meet the requirements issued by a machine safety risk assessment, the system is safe and ready to use in production. However, many fail to test the system to ensure it functions as outlined in the Risk Assessment to keep personnel safe. Following our machine safety mindset and our fundamental building blocks, this webinar will explore why Validation is needed to ensure we are designing, installing, and testing safety systems correctly, along with the steps associated with completing a successful Validation.



Date: April 27, 2021

Time: 2 PM Eastern
11 AM Pacific

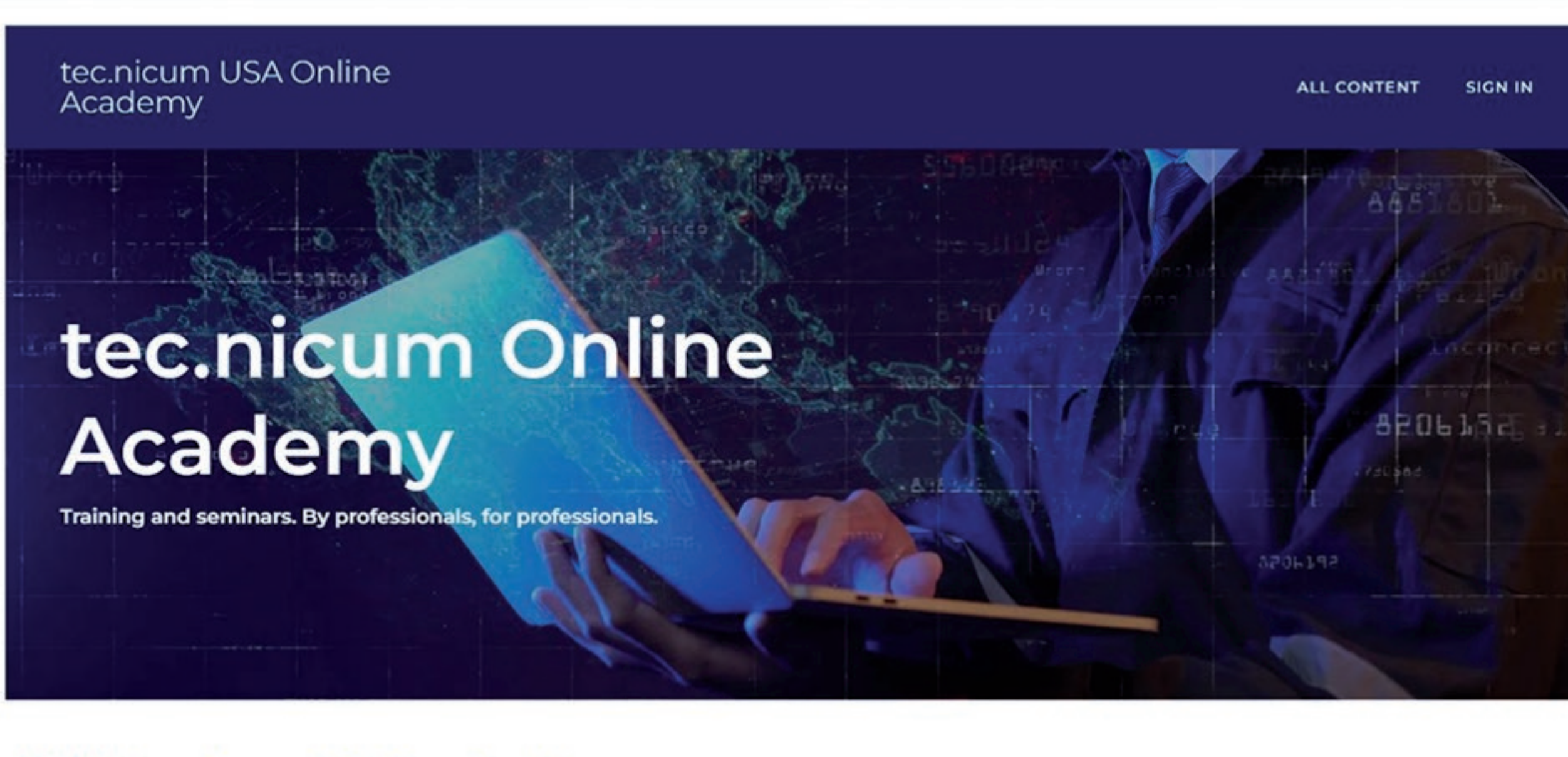
Duration: 1 hour

Presenter: Peter Rigakos



[REGISTER NOW](#)

tec.nicum ENGINEERING SERVICES



NEW: tec.nicum Online Academy

tec.nicum is proud to announce that our online academy is now open.

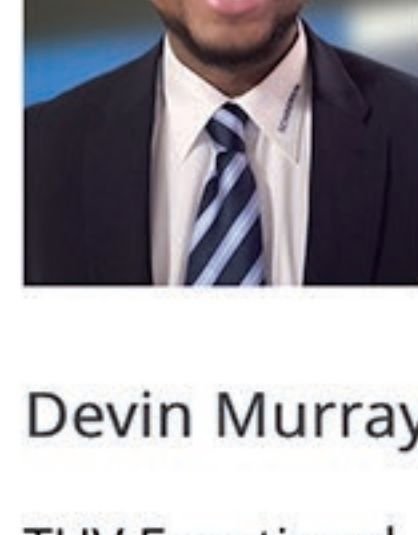
The tec.nicum online academy is a self-paced learning platform, which features versions of our flagship trainings, such as the one-day General Machine Safety course. Additionally, there are self-paced courses on topics of general industrial safety, such as lockout/tagout, confined space, electrical safety, and fall protection. More courses will be added regularly.

Every course allows for group discussions to dive deeper into any of the topics which have been presented. Once enrolled, you will have unlimited access to all current content and all additional content released thereafter, as well as discounts on selected live trainings.

Also offered with the enrollment is access to the online forum where you will have the opportunity to communicate with peers and subject matter experts throughout the industry.

Visit the tec.nicum Online Academy and enroll today: <https://tecnicumacademy.thinkific.com/>

ASK THE EXPERT



Devin Murray

TUV Functional
Safety Engineer
ID-No. 4274/11

Question: What are the key steps involved within the risk assessment?

The first steps within the risk assessment process are to assemble a team knowledgeable of the machine and identify the machine limits, including the tasks required for direct interaction with the equipment.

Then, identify reasonable and foreseeable hazards of the machine, and quantify their associated risks. With this calculated hazard rating number (HRN), you can decide what, if any, technically feasible actions need to be taken to reduce this risk.

If machine designs or processes need to be modified, or if engineering control measures need to be added, the next steps would be the development and implementation of these changes.

Next, a re-evaluation of the risk is required to ensure no additional hazards and risks have been created, and that an acceptable HRN has been achieved.

If an engineering control measure is used, the last step would be validation to confirm the safety system is physically wired correctly.

Do you have a question? Ask Devin: dmurray@schmersal.com