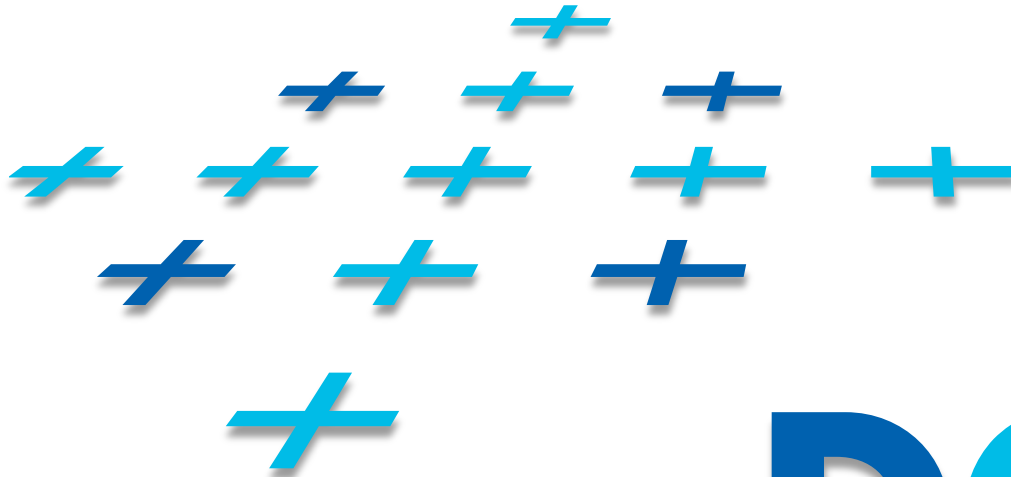


CESCG 2011

Jakub Hušek

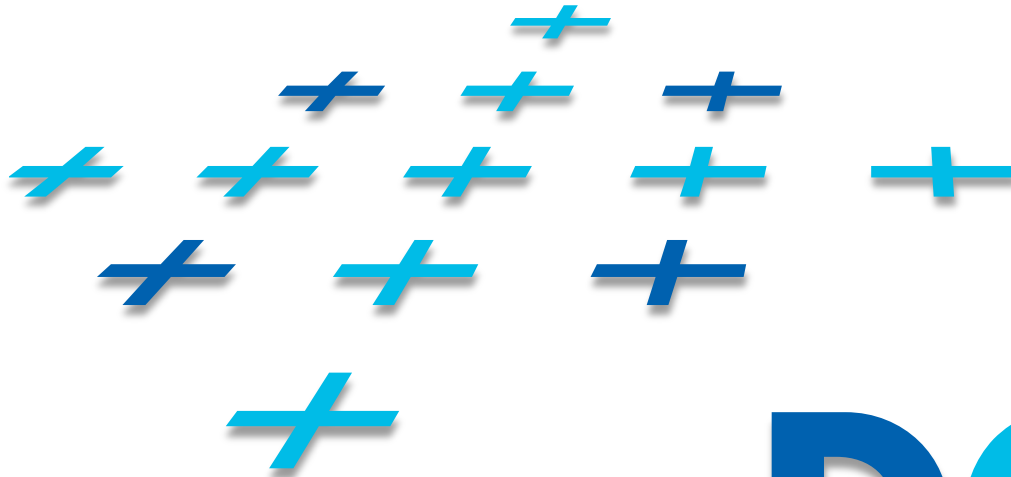


Czech Technical University in Prague
Faculty of Electrical Engineering



DCGI
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**DEPARTMENT OF COMPUTER GRAPHICS
AND INTERACTION**

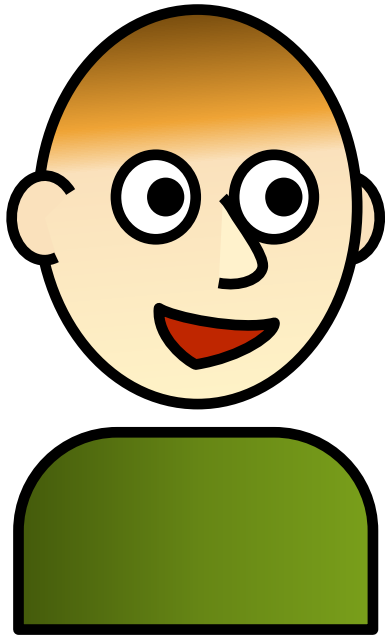


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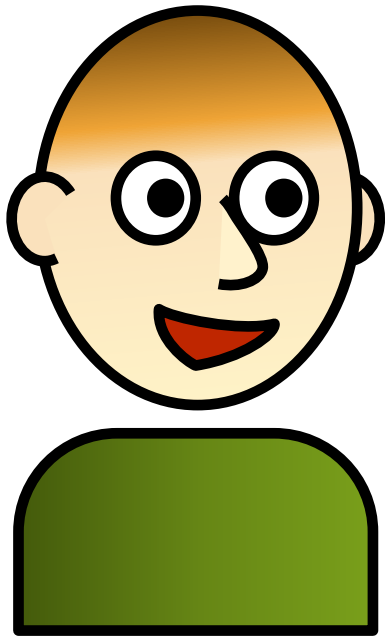
**DEPARTMENT OF COMPUTER GRAPHICS
AND INTERACTION**

Interaction

Interaction



Interaction

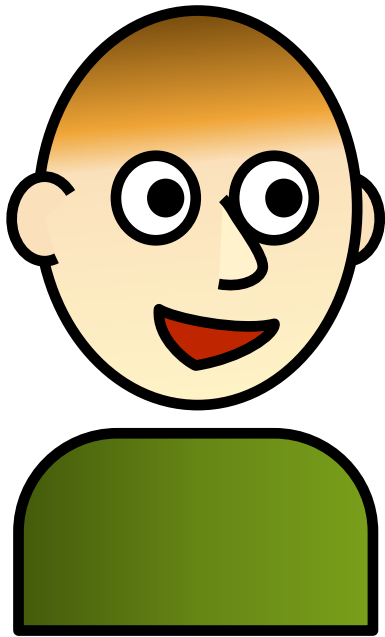


Human

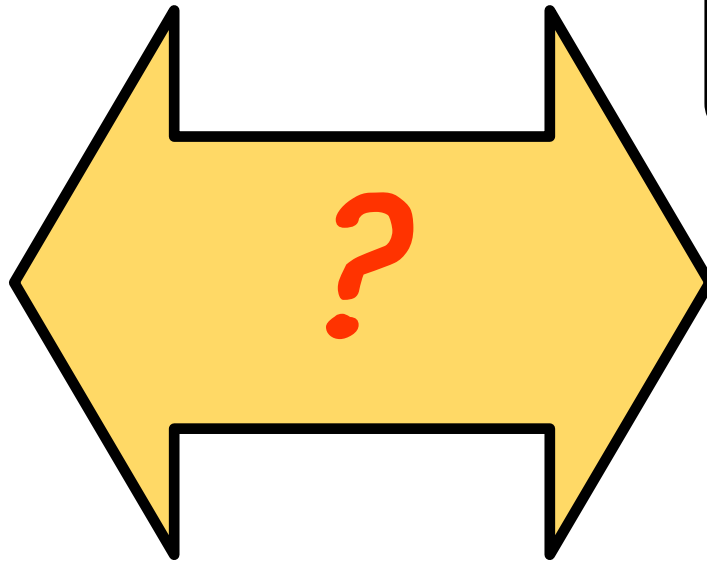


Computer

Interaction



Human



Computer

Try it!


Prototype

SCREEN

TOUCH SCREEN

MULTITOUCH SCREEN

MULTITOUCH SCREEN WITH IMAGE CAPTURING



*It may
be good...*



It **may**
be good...

Try it!

Prototype

Is this possible?

How?

(MULTI-)TOUCH TECHNOLOGIES

Resistance

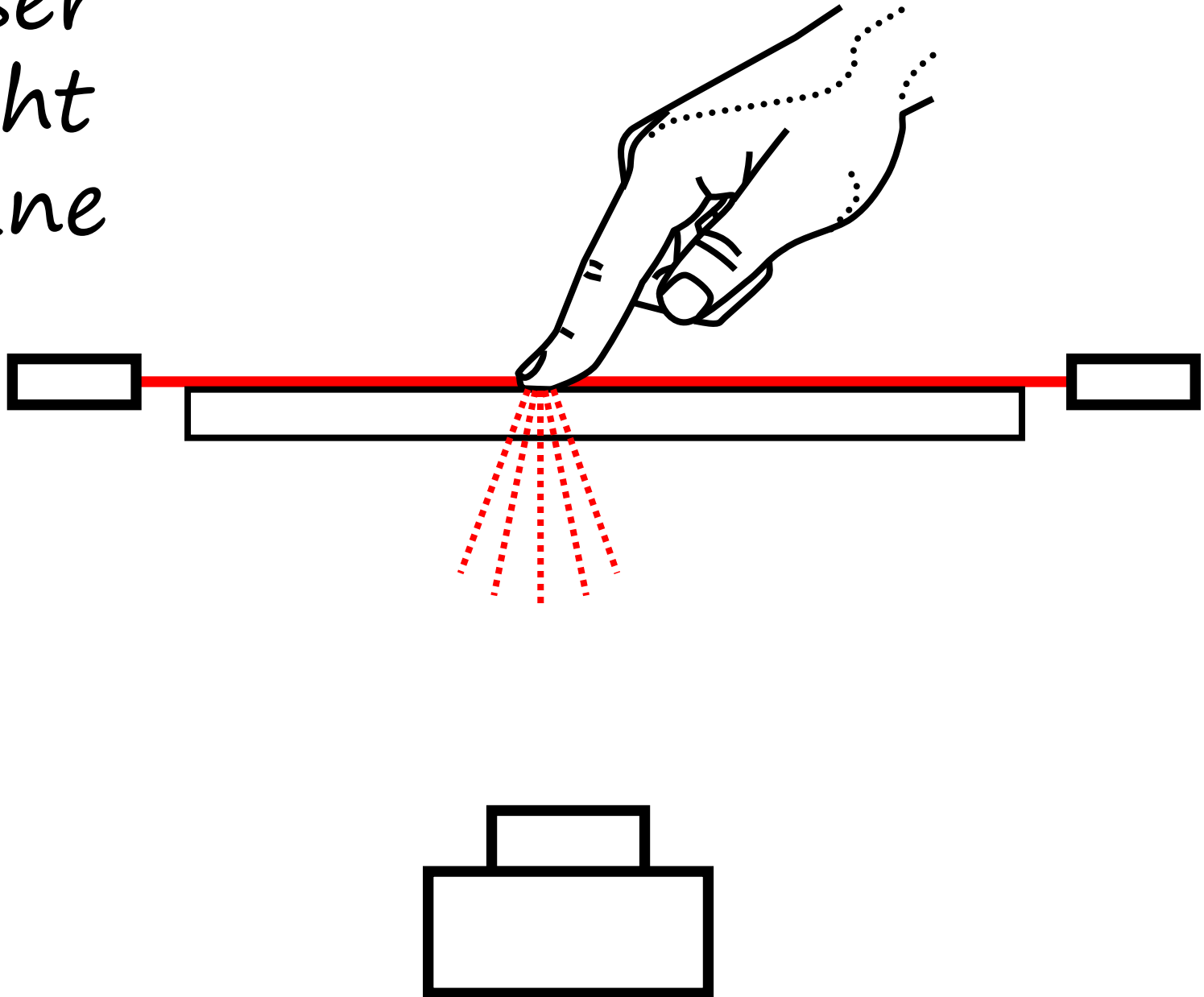
Capacitance

Optical

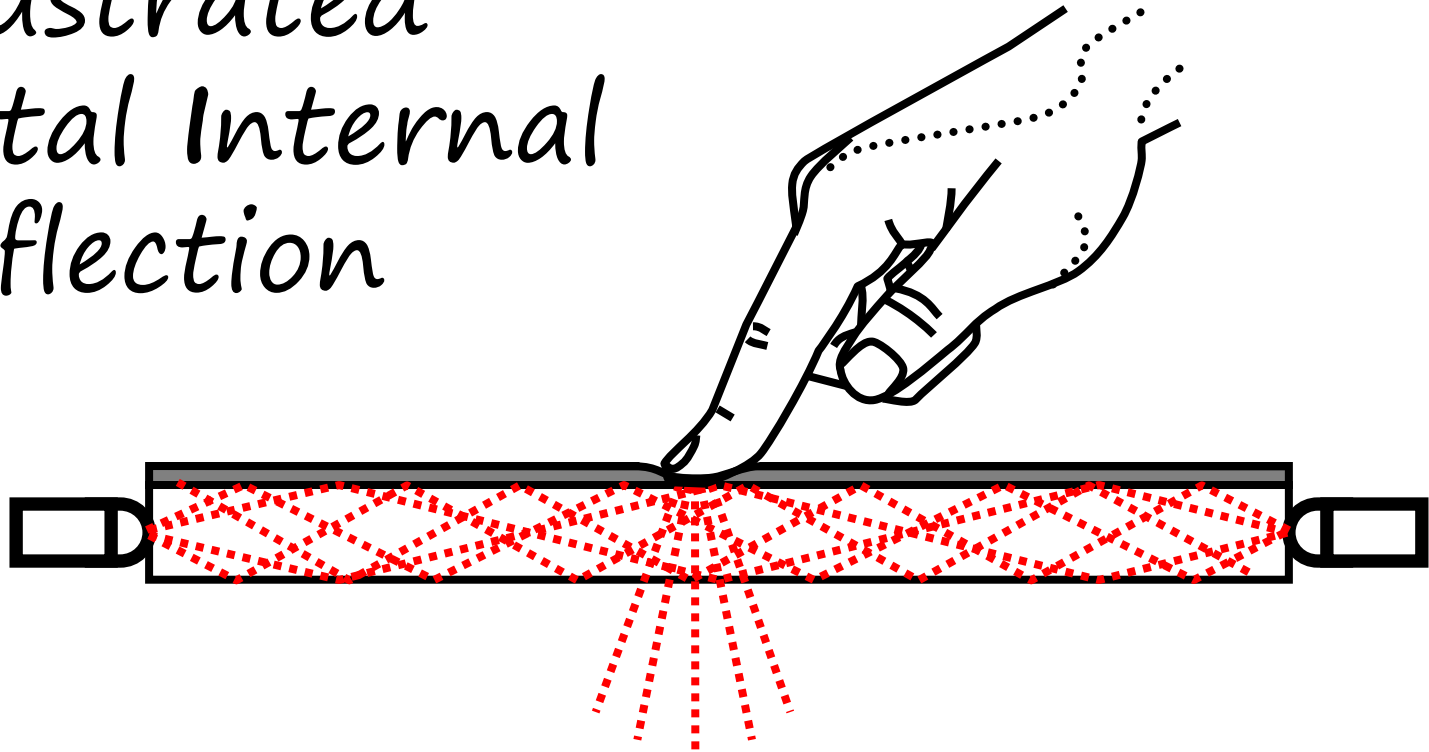
(infrared light)

Acoustic

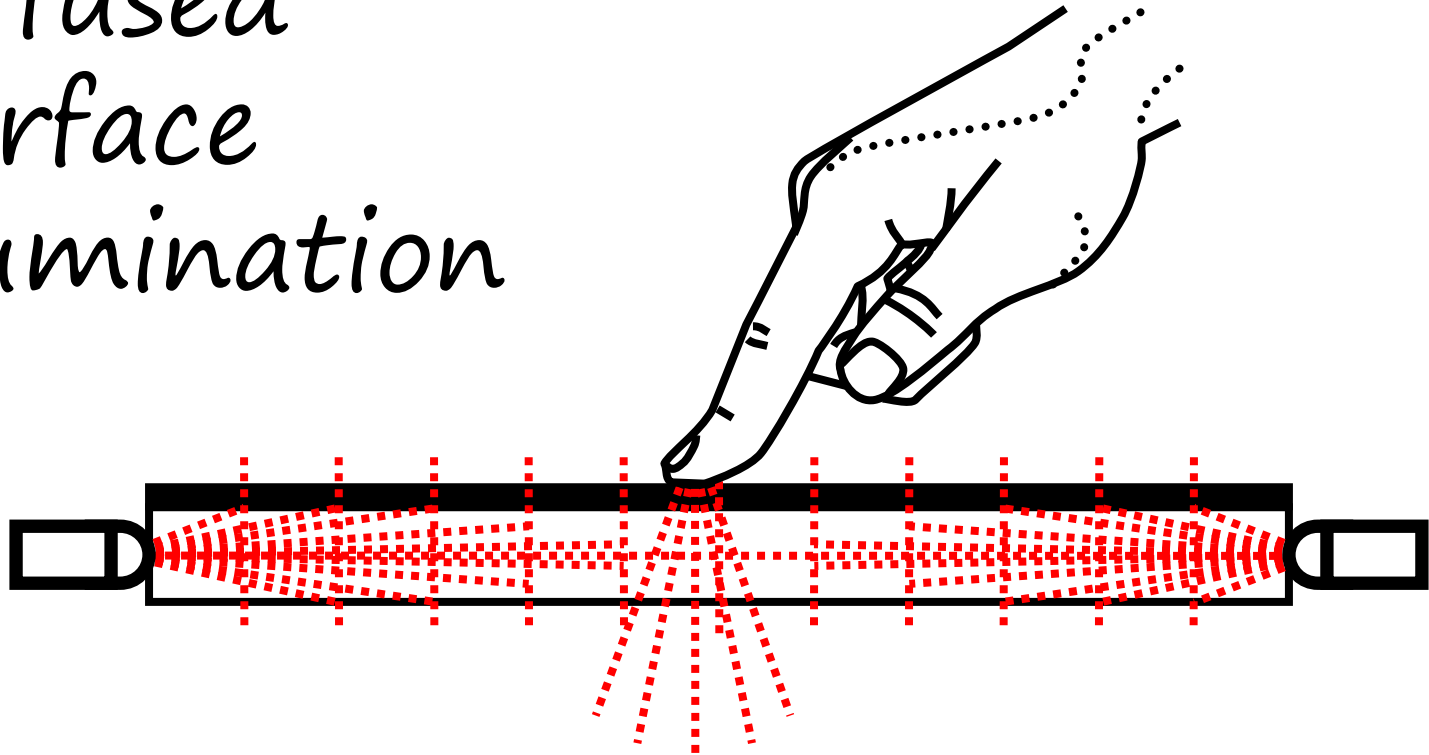
Laser Light Plane



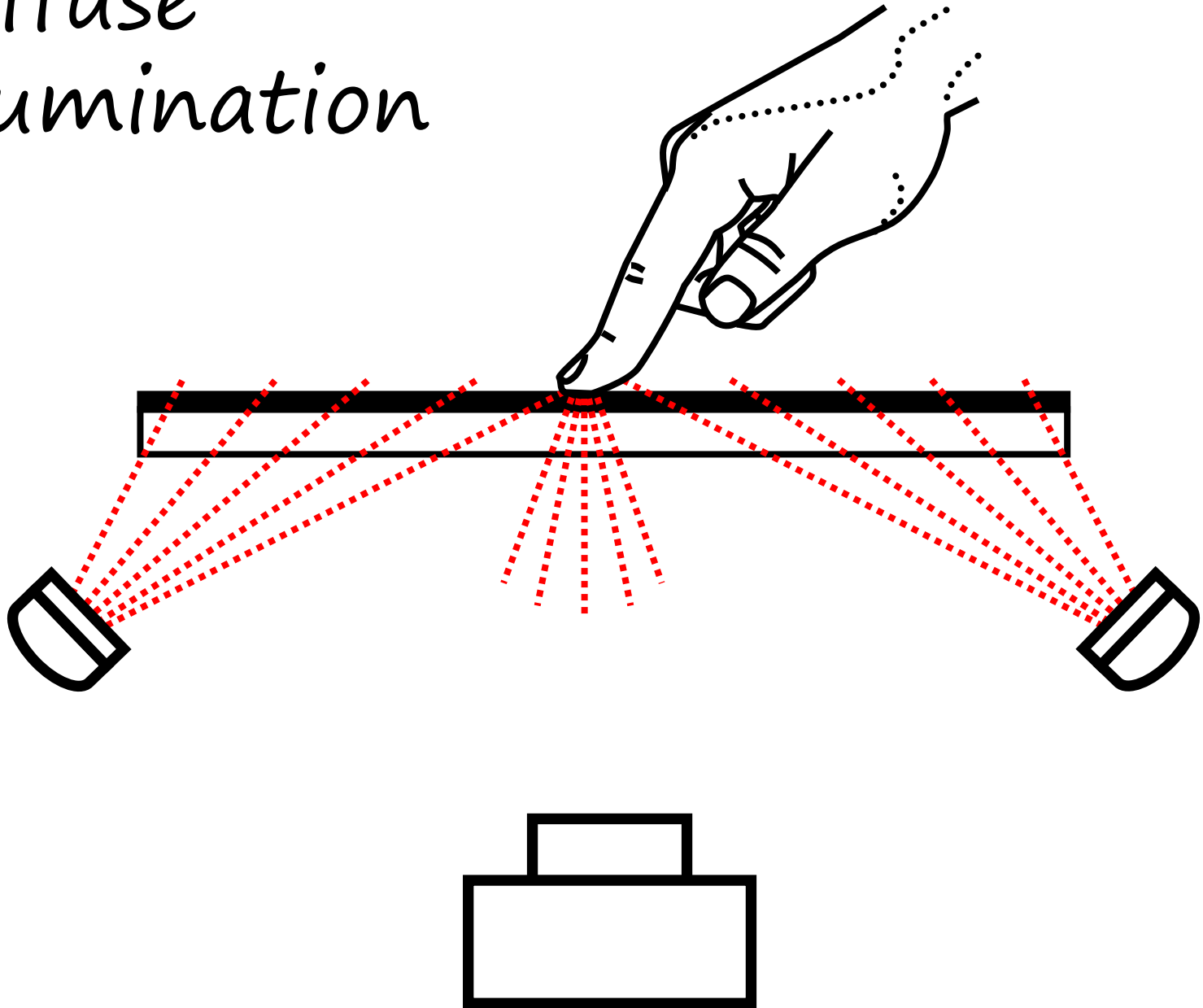
Frustrated Total Internal Reflection



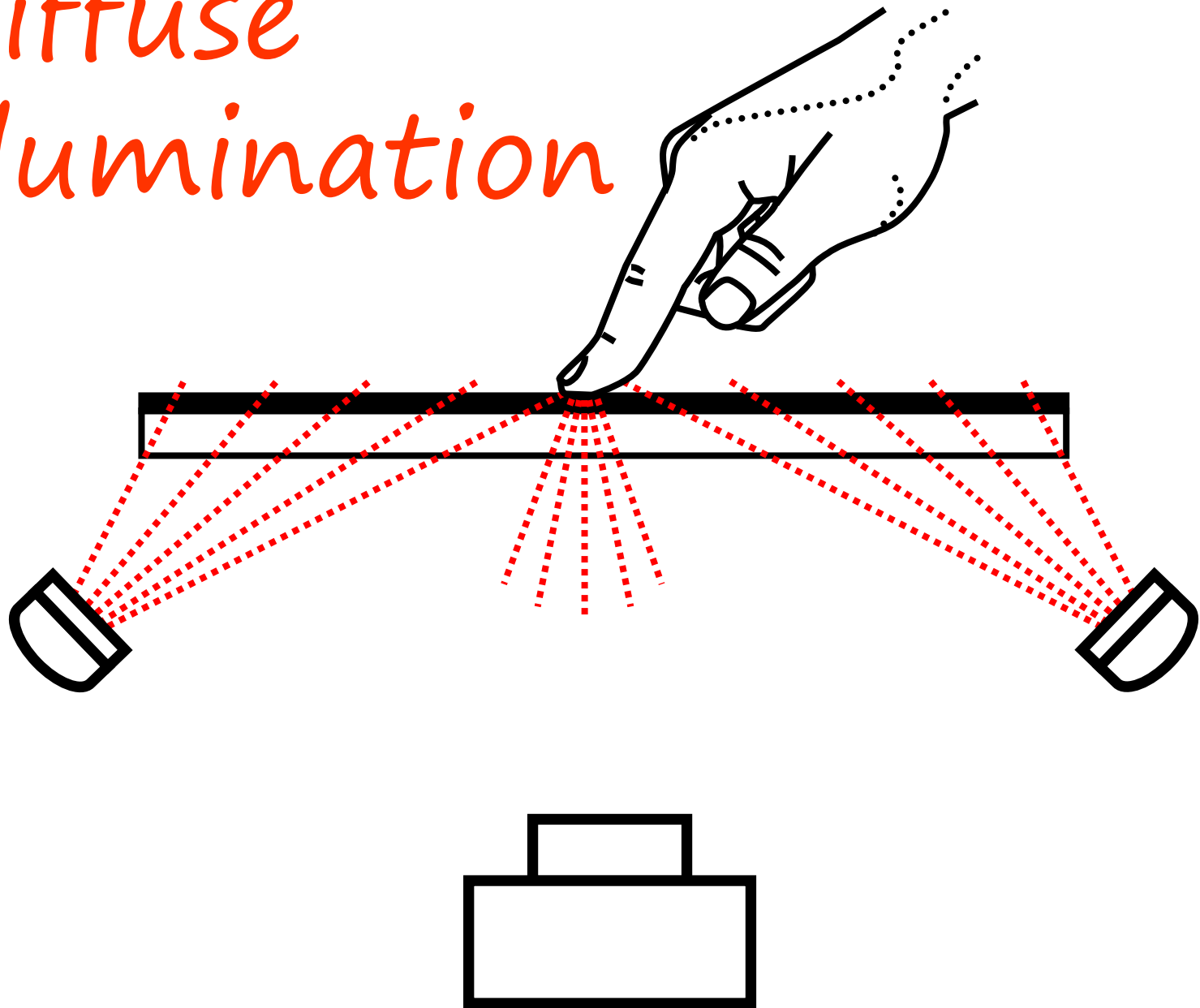
Diffused Surface Illumination

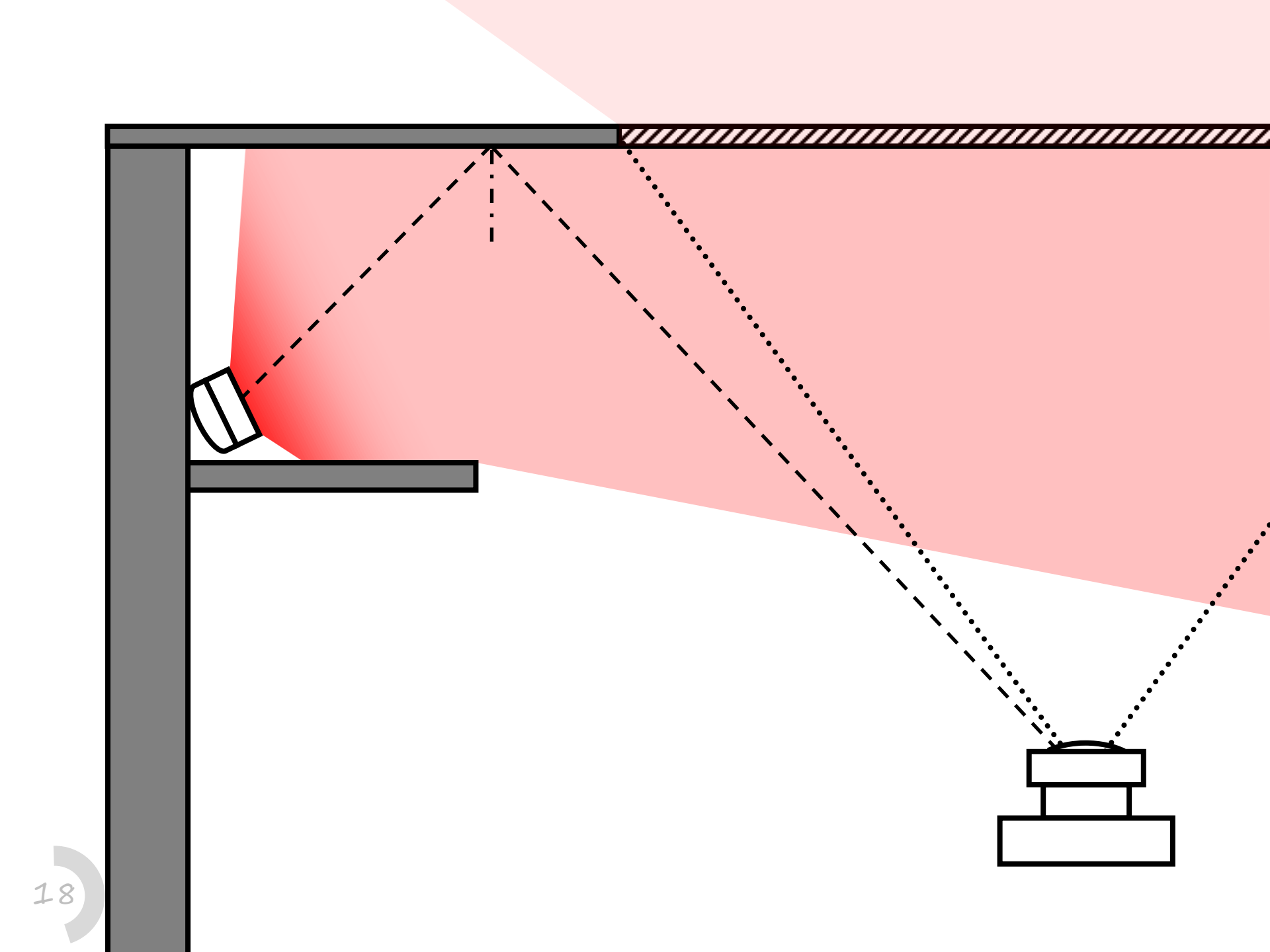


Diffuse Illumination



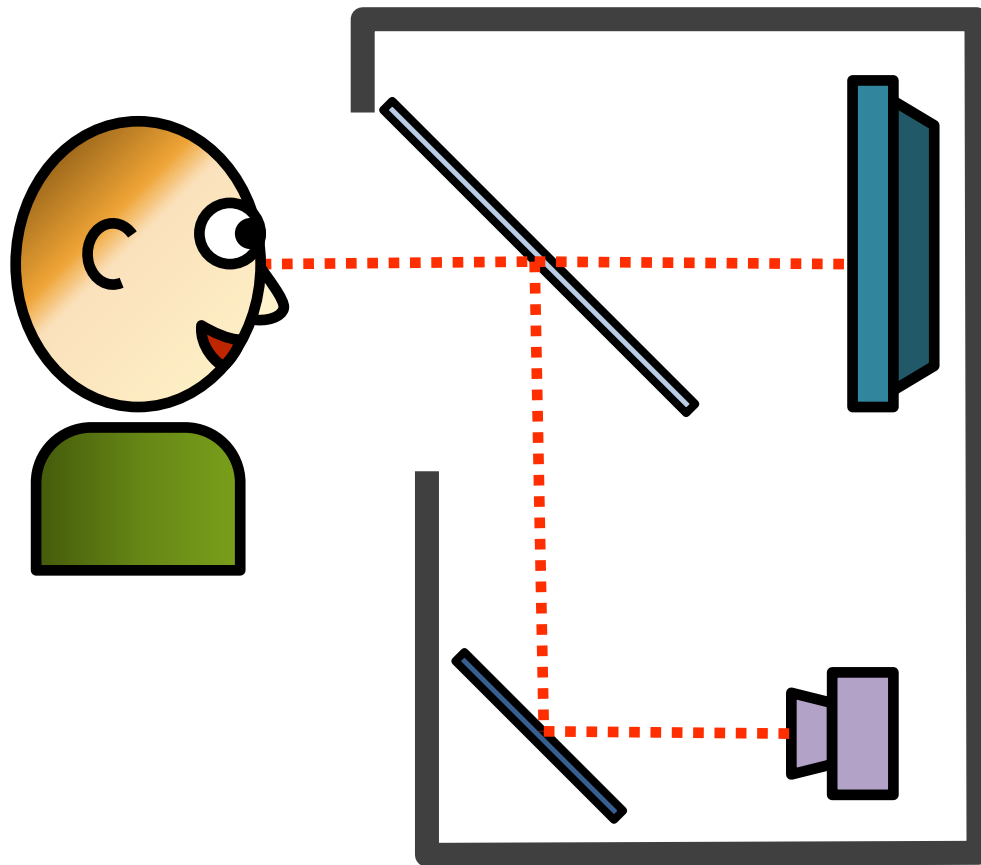
Diffuse Illumination



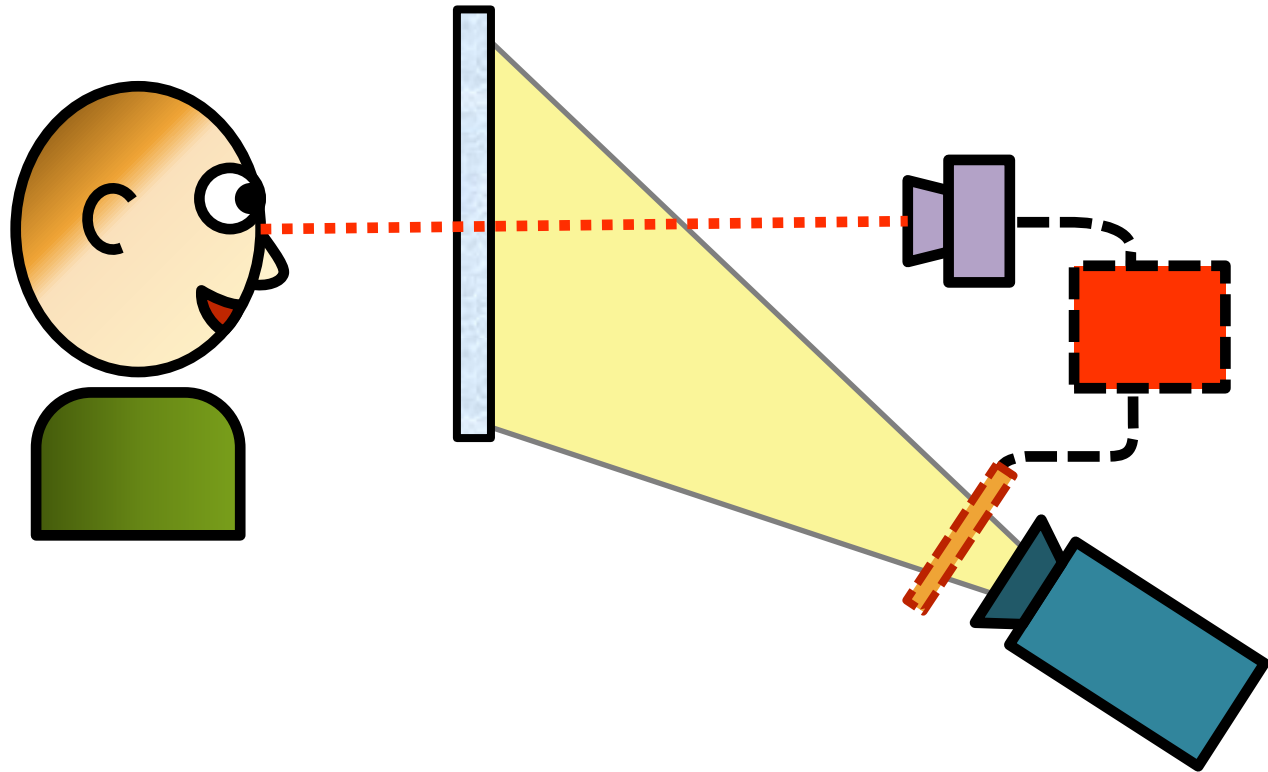


VISION THROUGH THE SCREEN TECHNOLOGIES

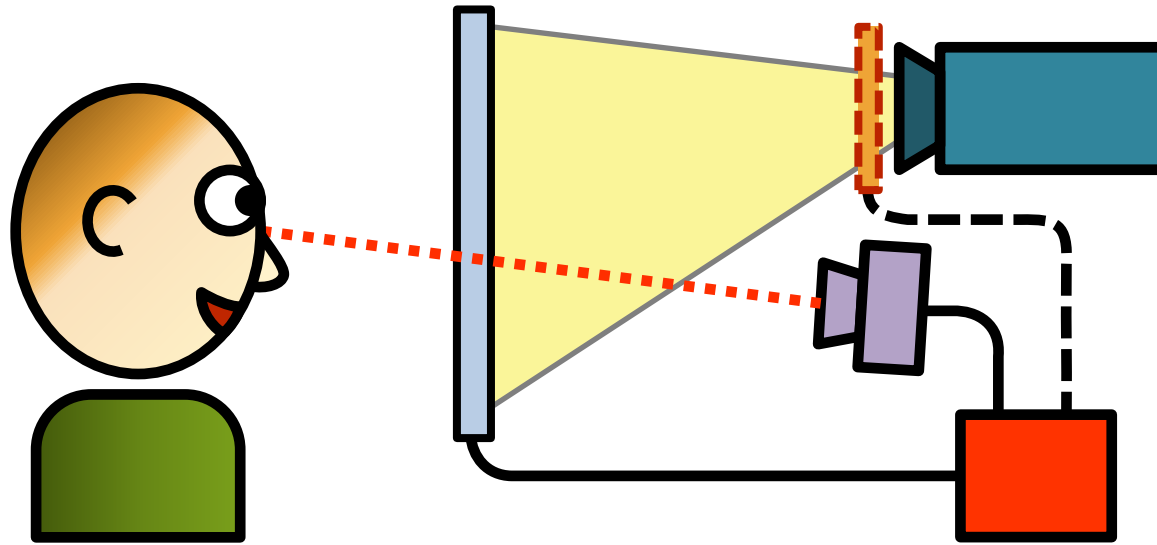
Semi-transparent Mirror



HoloScreen



(PD-LC*) Panel



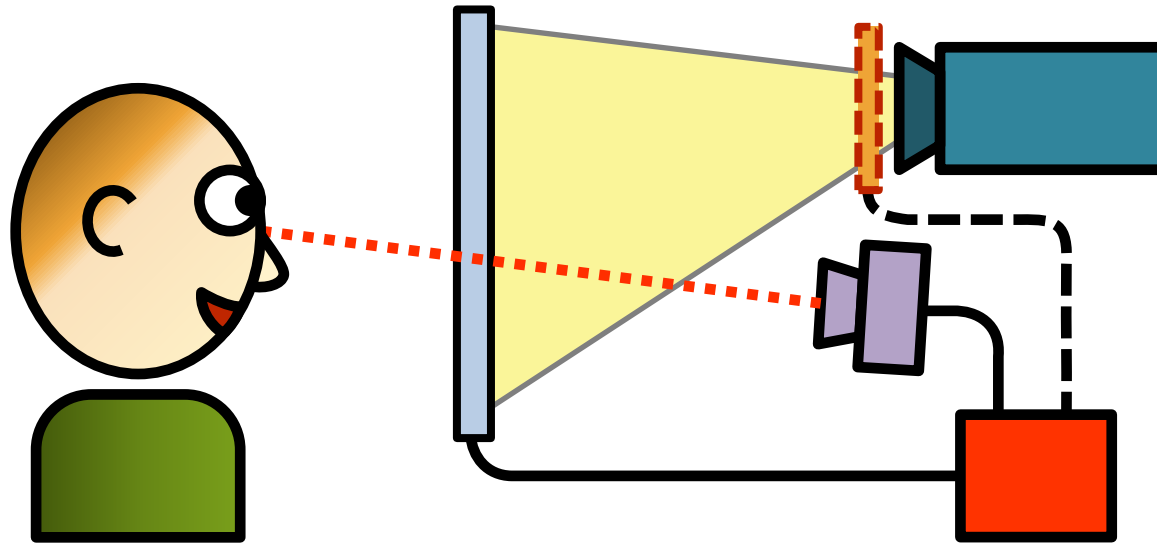
* Polymer Dispersed Liquid Crystal

No voltage
Translucent



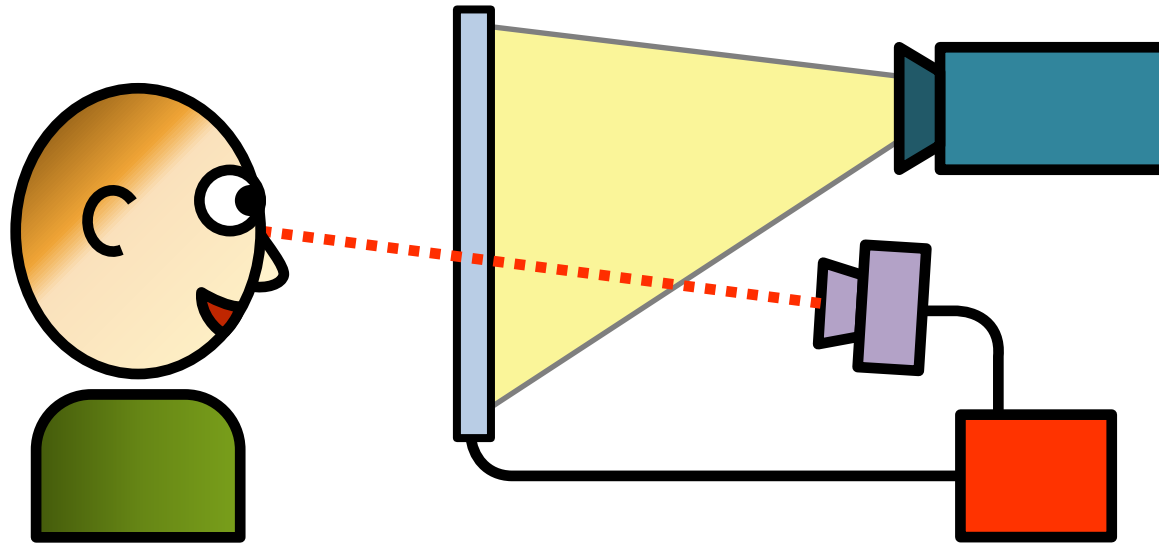
*Voltage attached
Transparent*

(PD-LC*) Panel

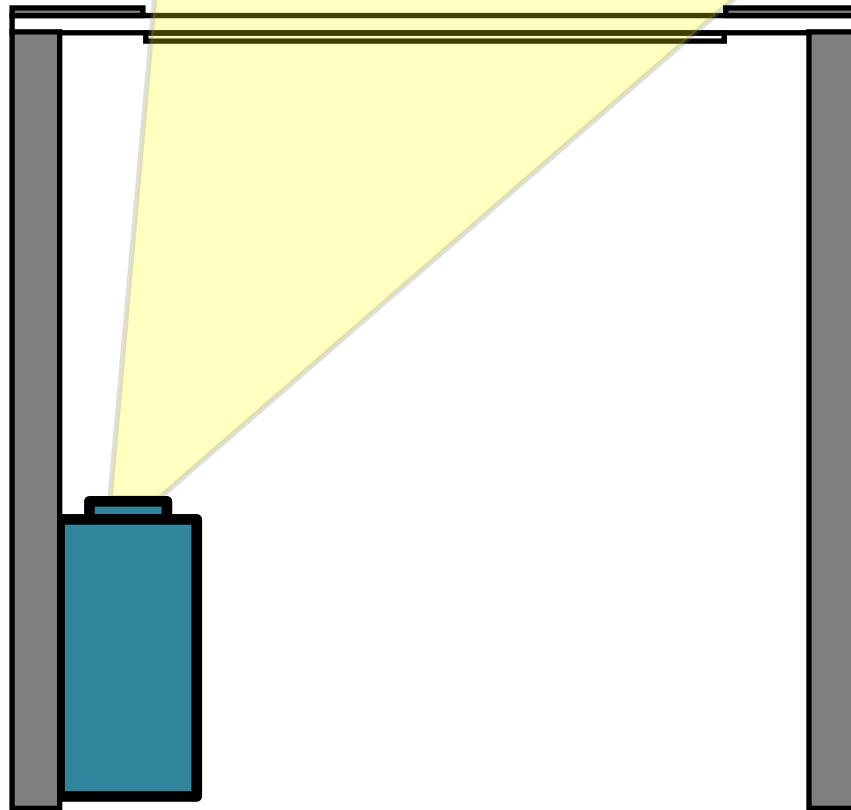
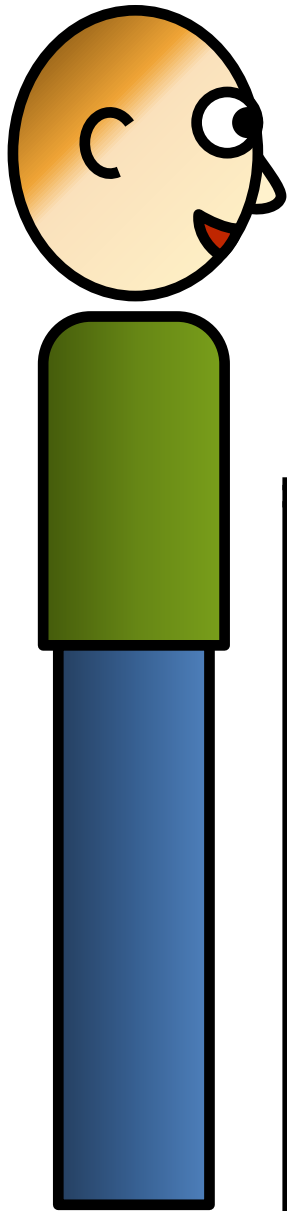


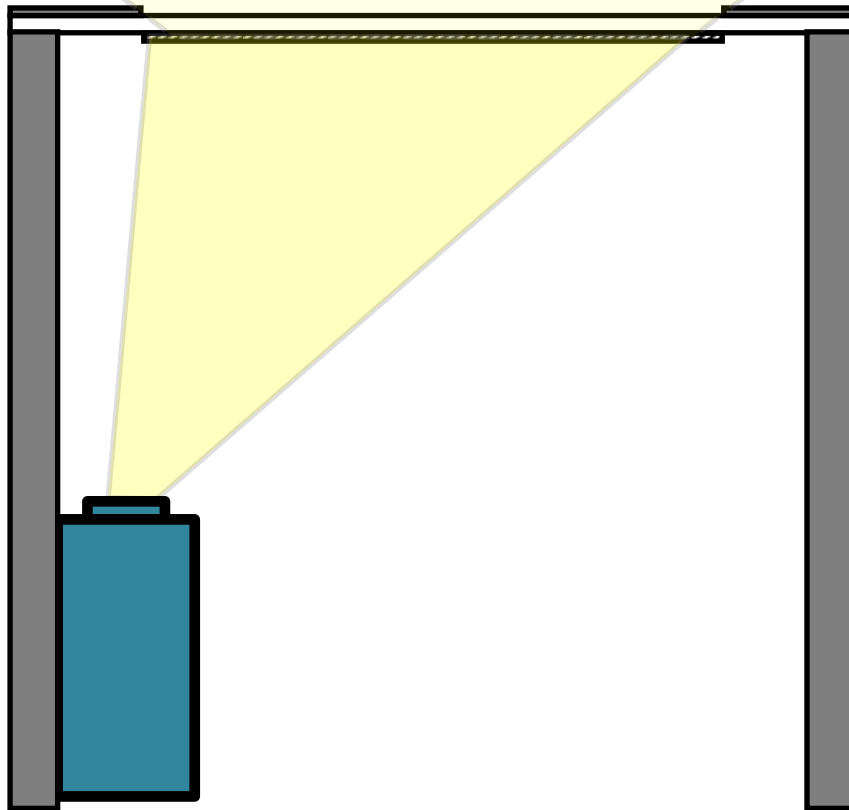
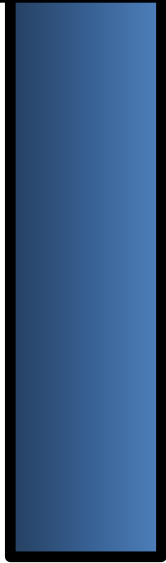
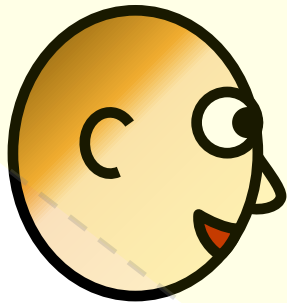
* Polymer Dispersed Liquid Crystal

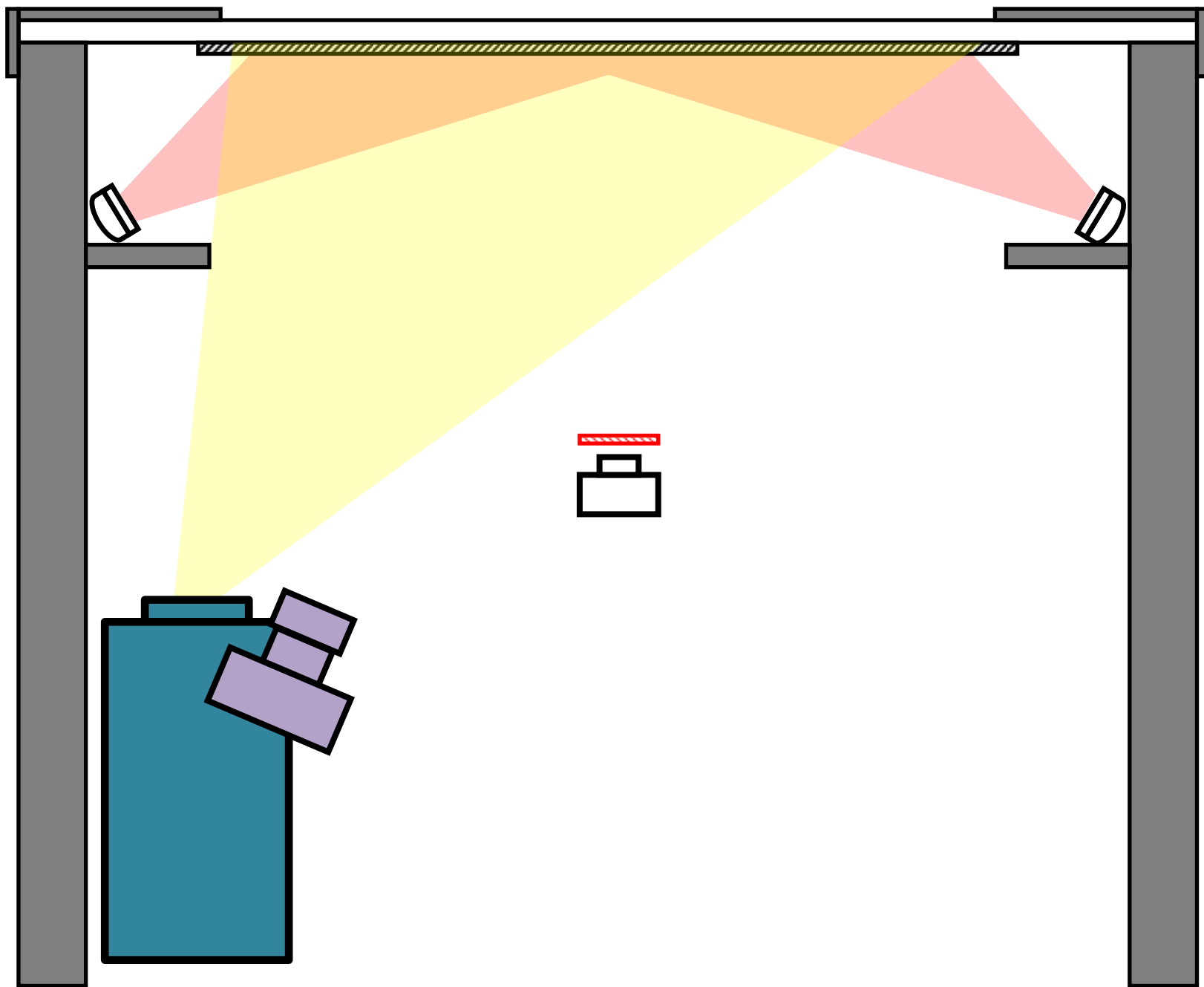
(PD-LC*) Panel

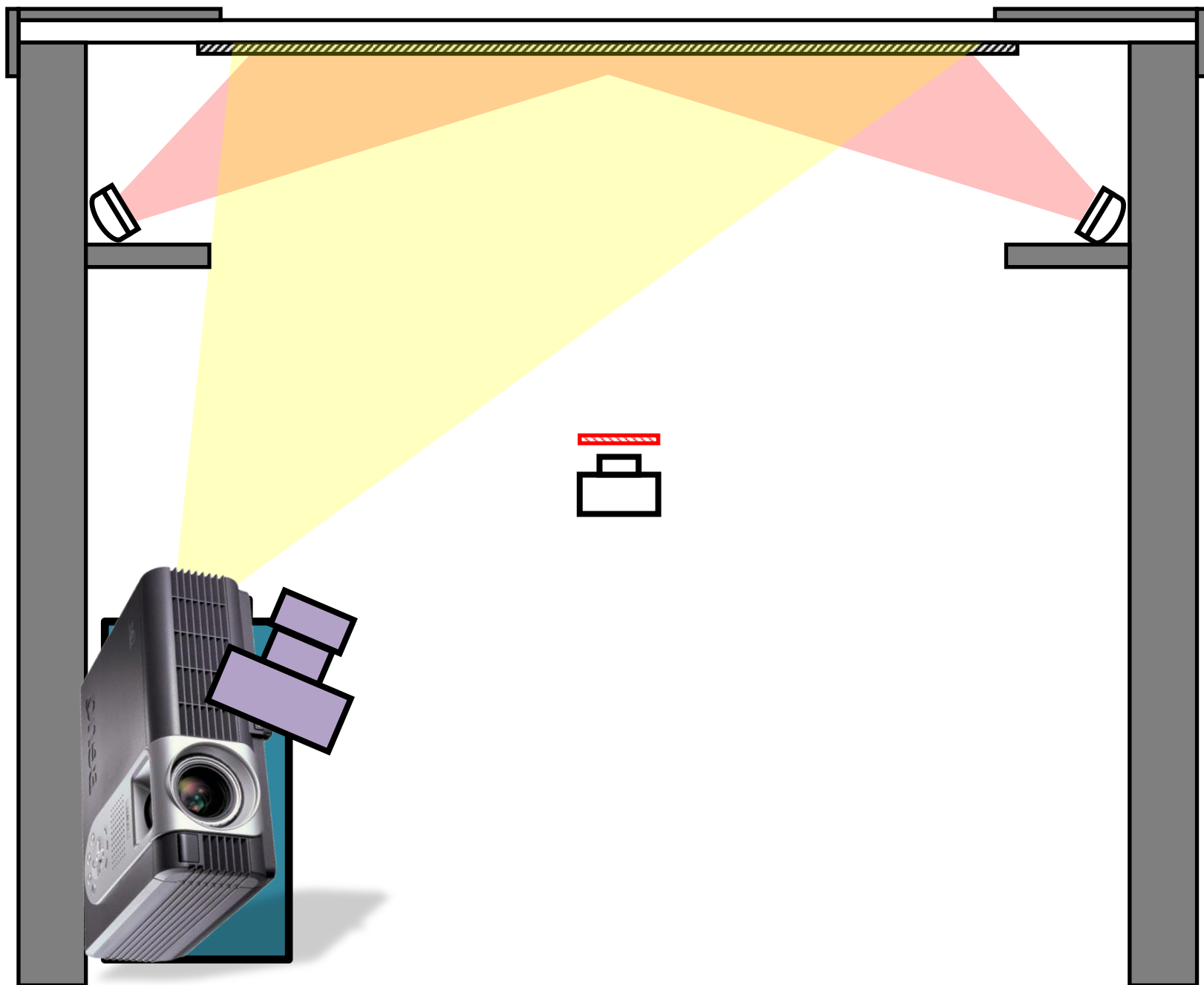


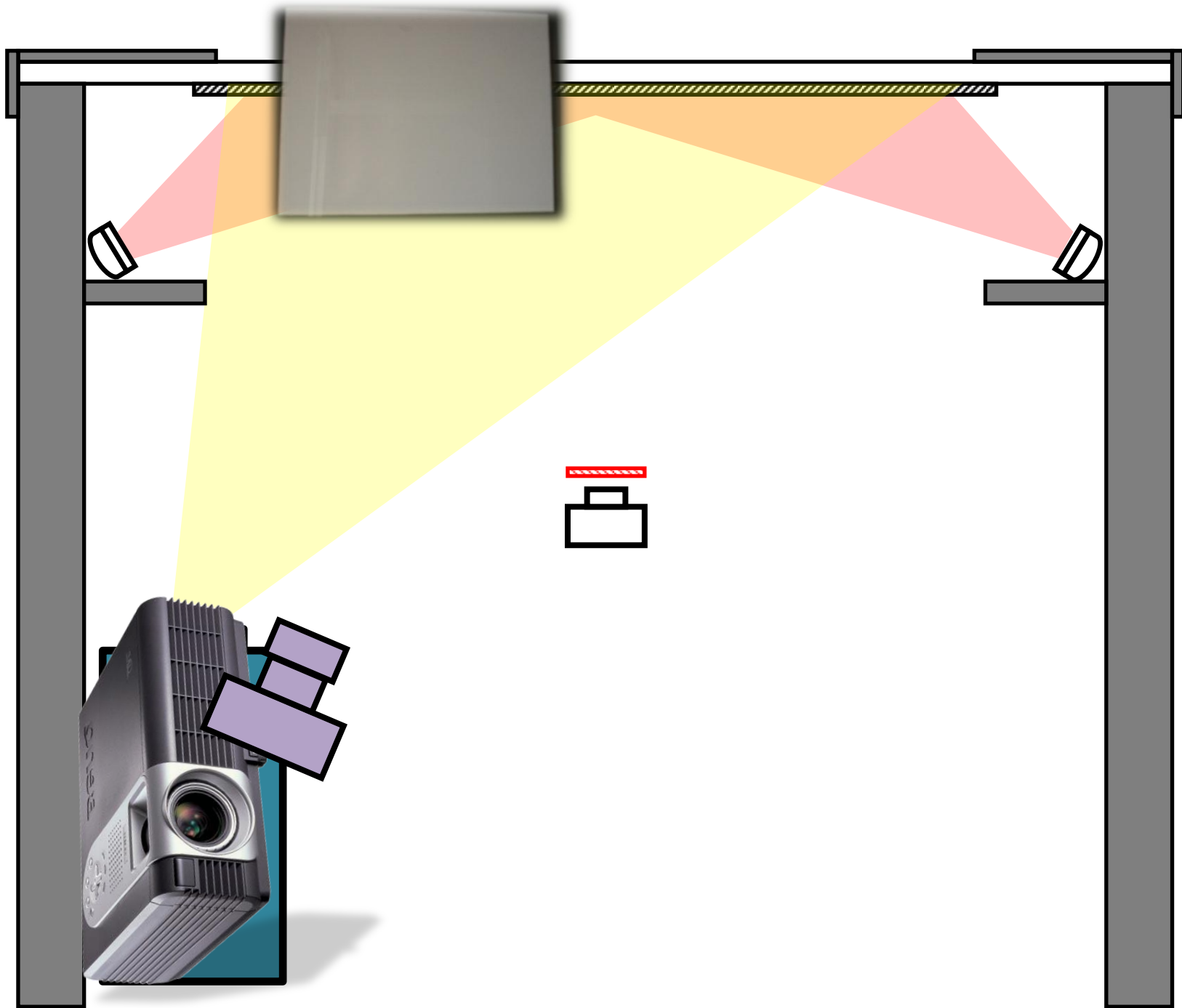
* Polymer Dispersed Liquid Crystal

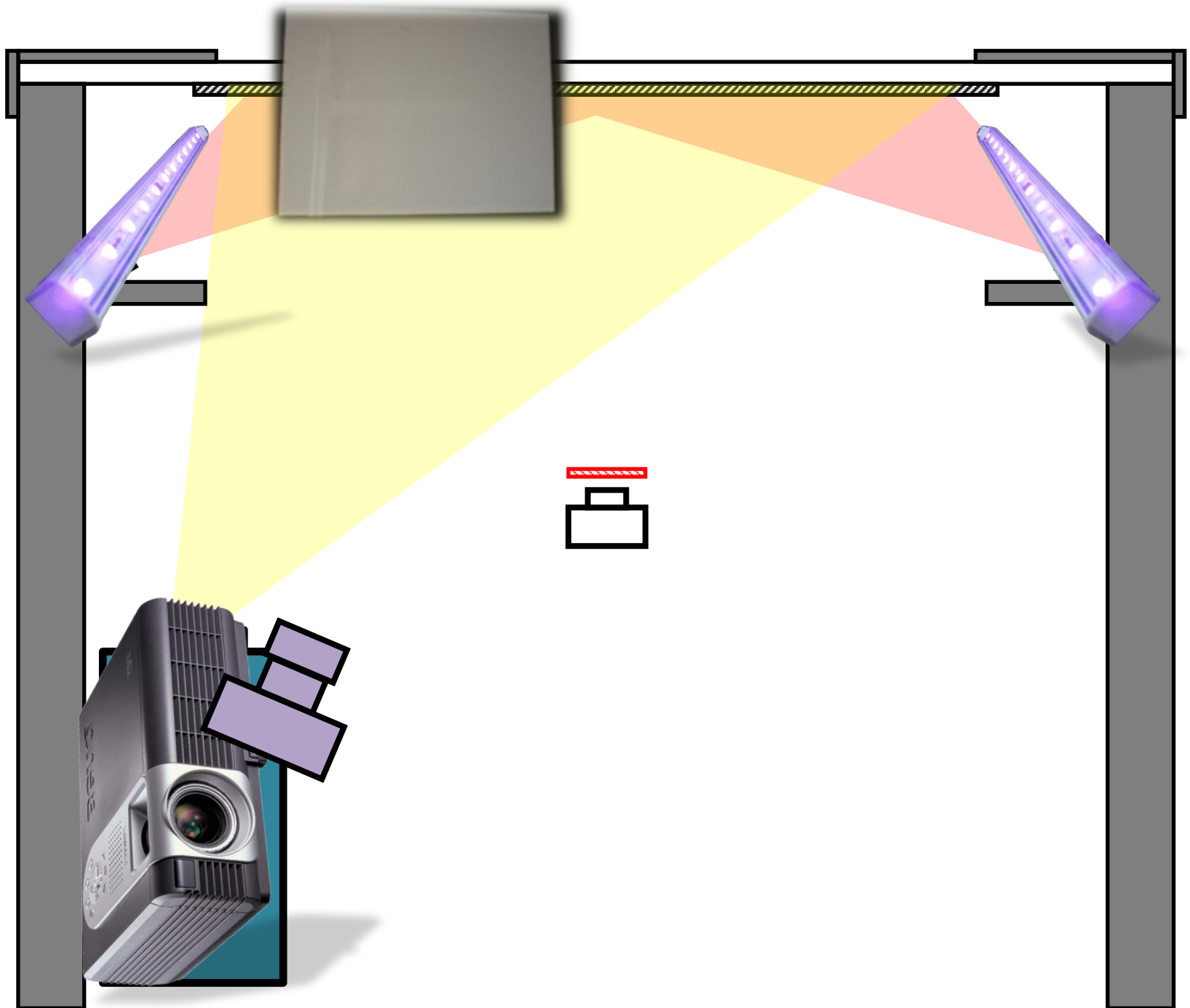


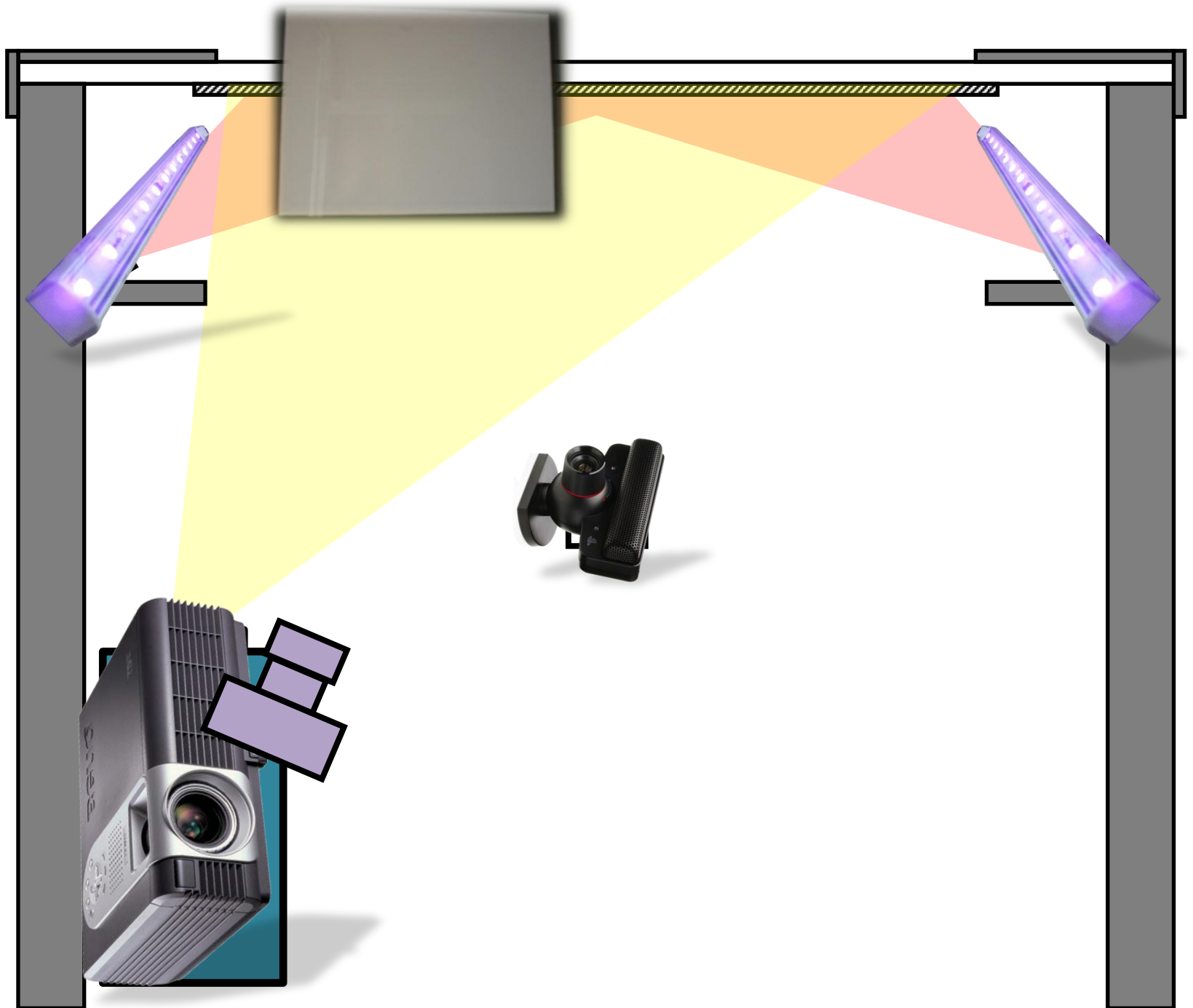


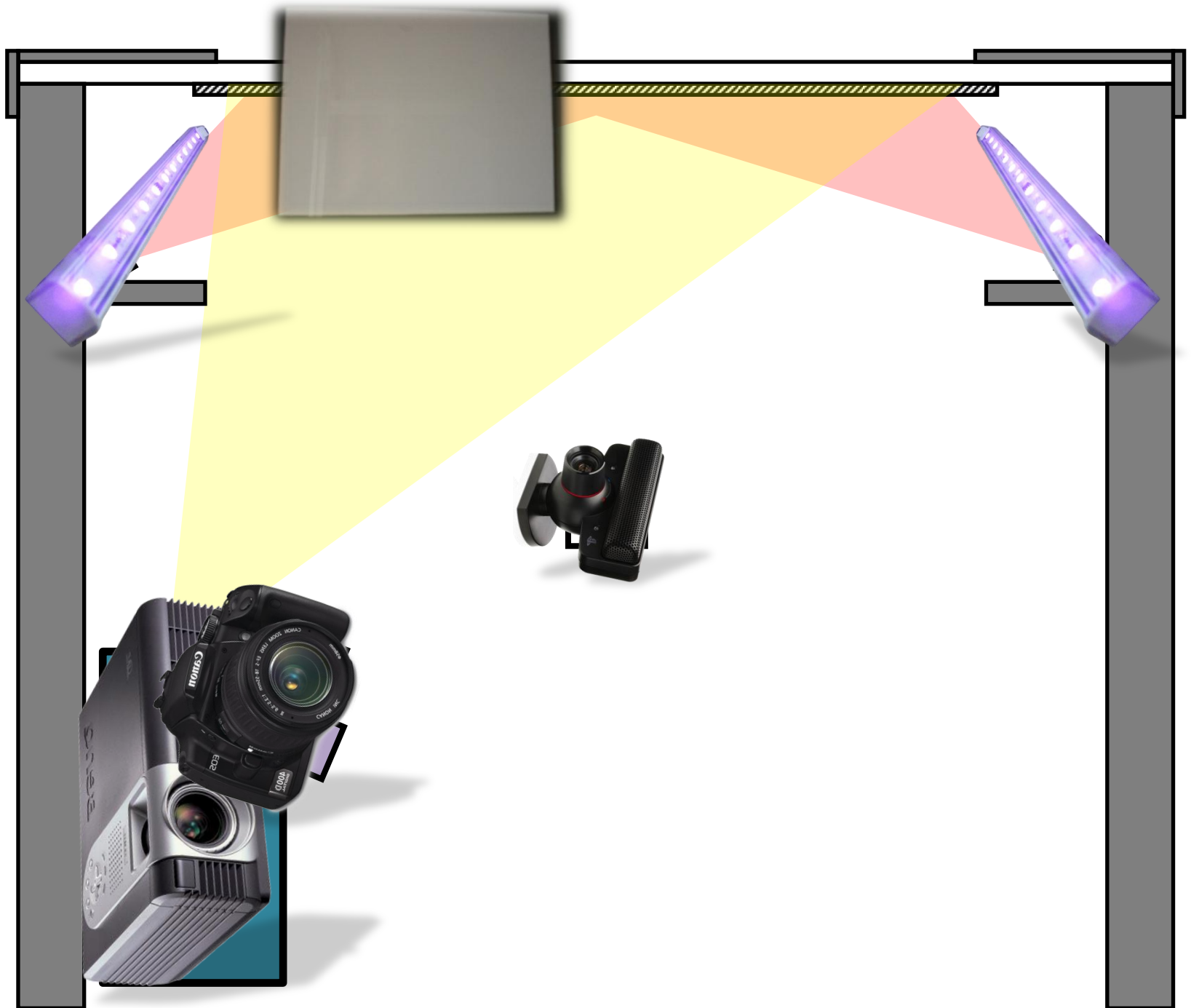


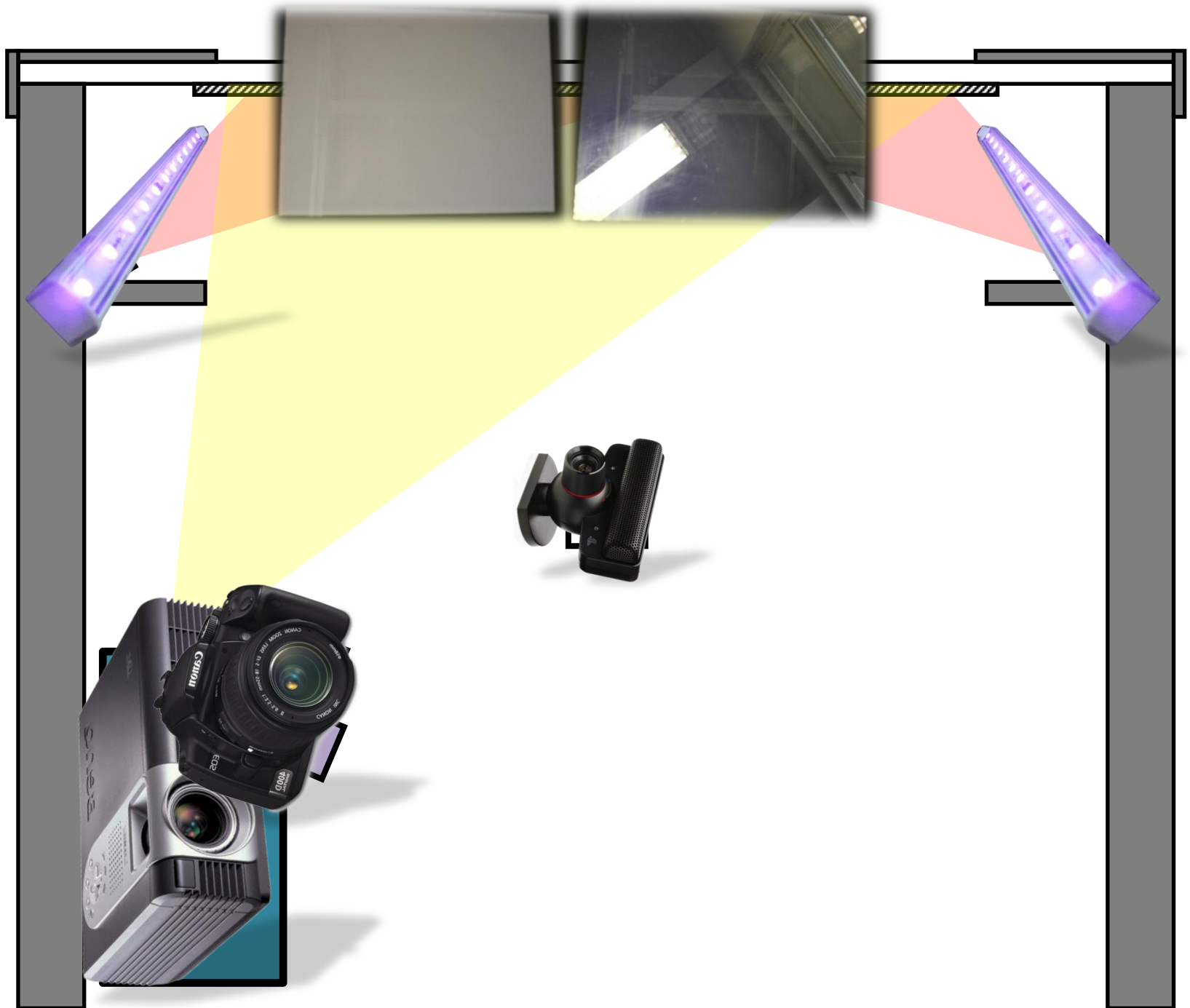


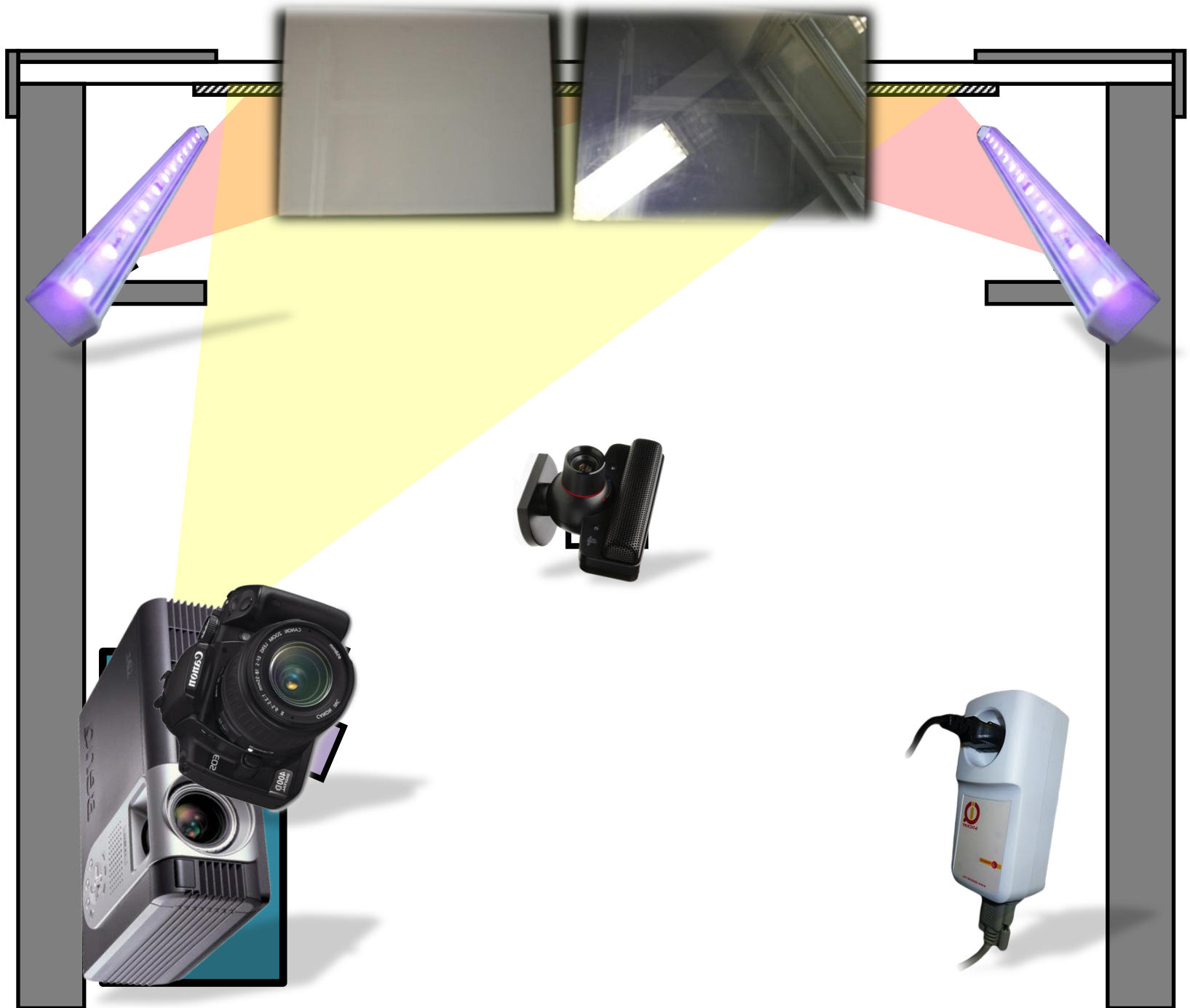
















Software



Sony PS3 Eye
(altered to capture IR light only)

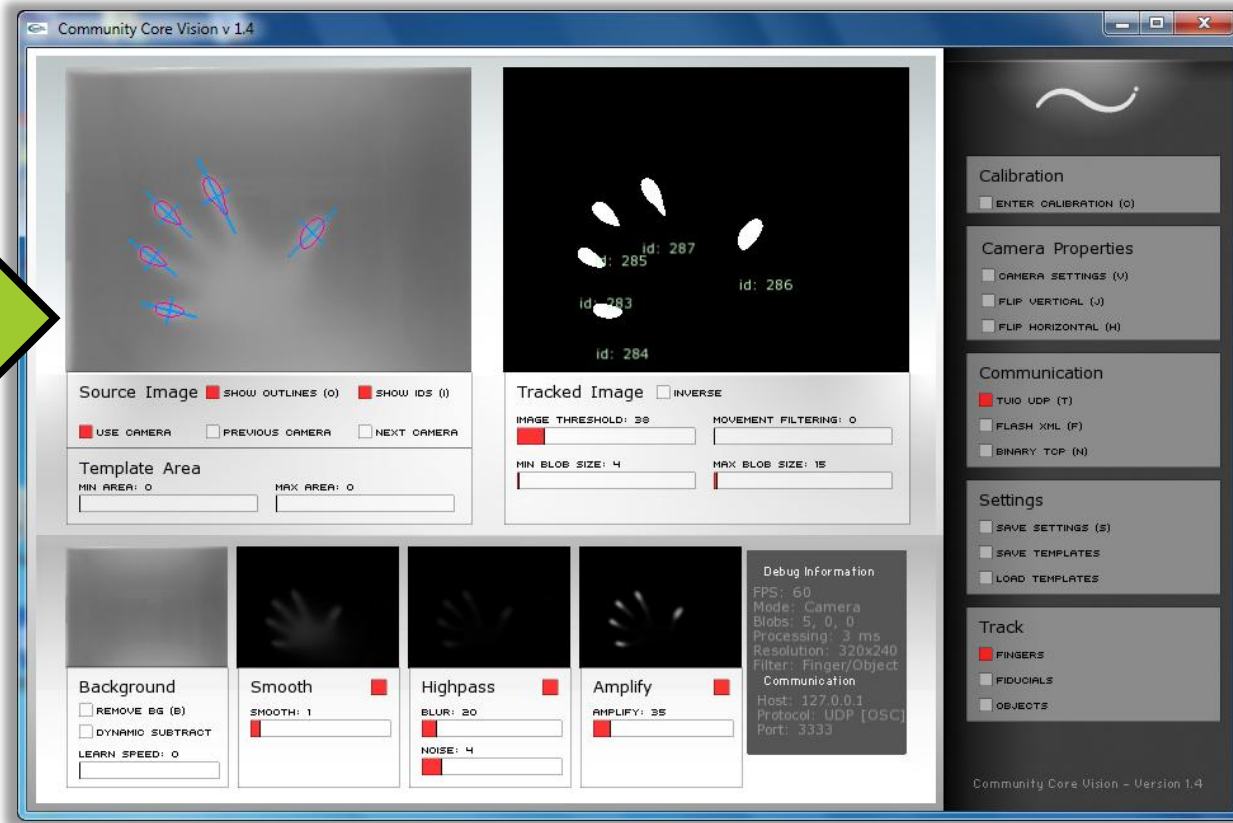


PS3 Eye Driver & SDK
by CodeLabs

Community Core Vision by NUI Group



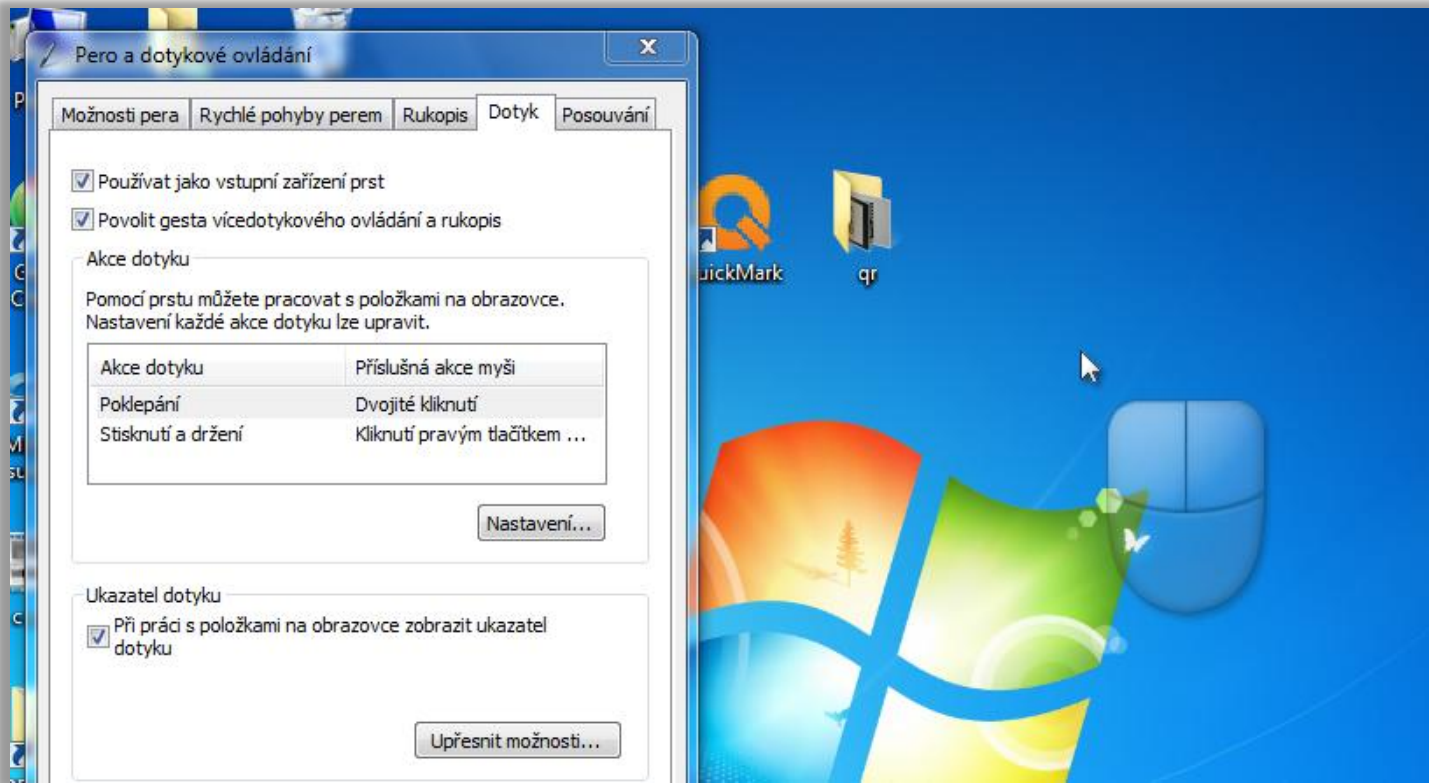
video



TUJO



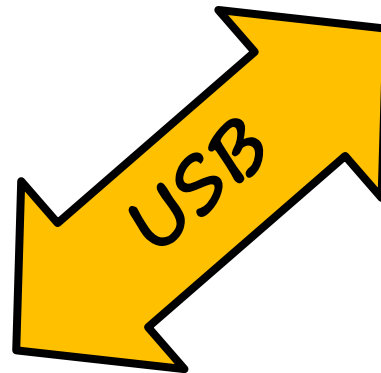
Multitouch Driver by Daniel Danilin



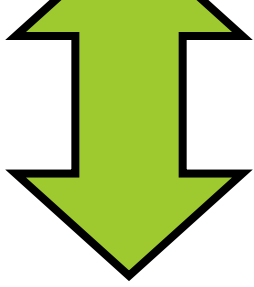
Windows 7
by Microsoft



Canon EOS 400D

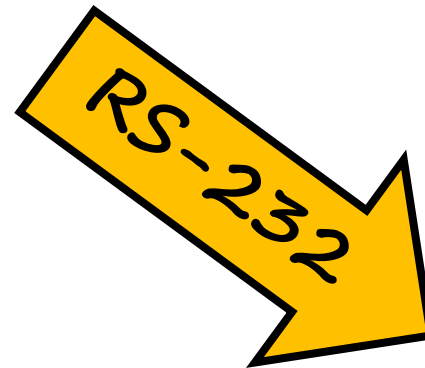


*Canon SDK
by Canon*



Diffuser Switching & Synchronization

by me (a prototype)



diffused

*RS-232
command*

(not in a proper scale)

diffused

<i>RS-232 command</i>	<i>Socket on</i>
---------------------------	----------------------

(not in a proper scale)

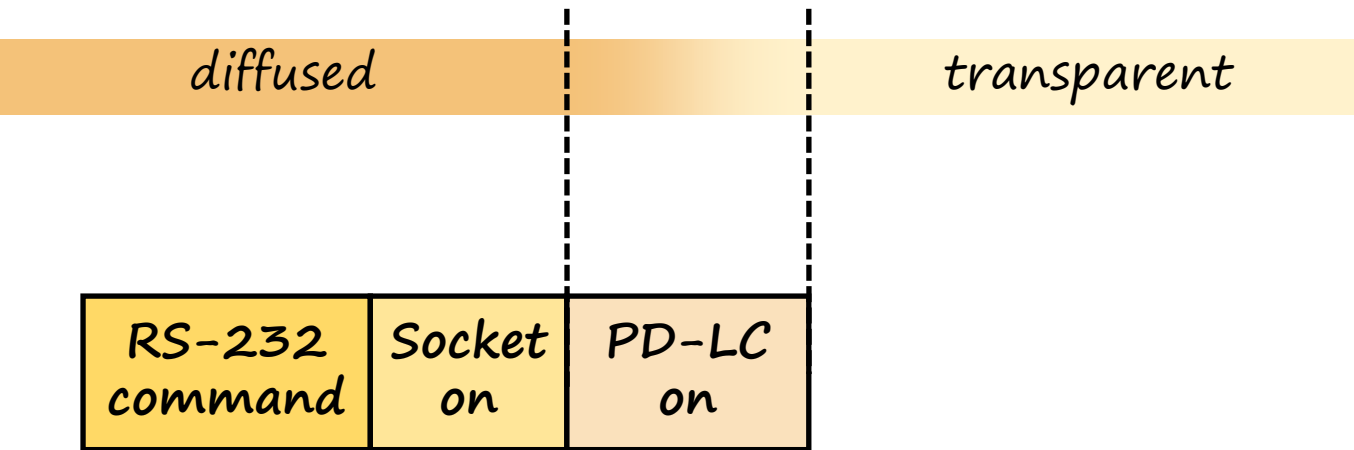
diffused

*RS-232
command*

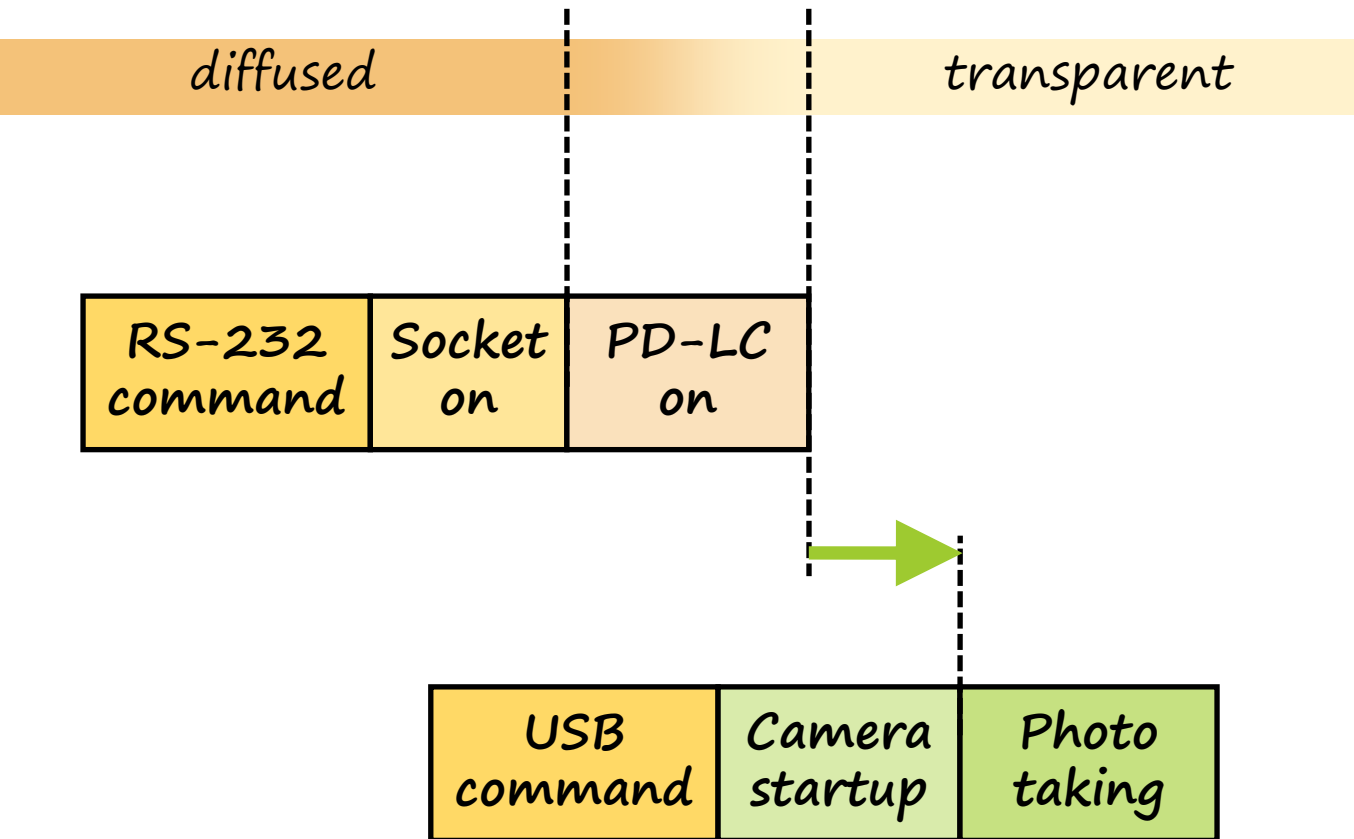
*Socket
on*

*PD-LC
on*

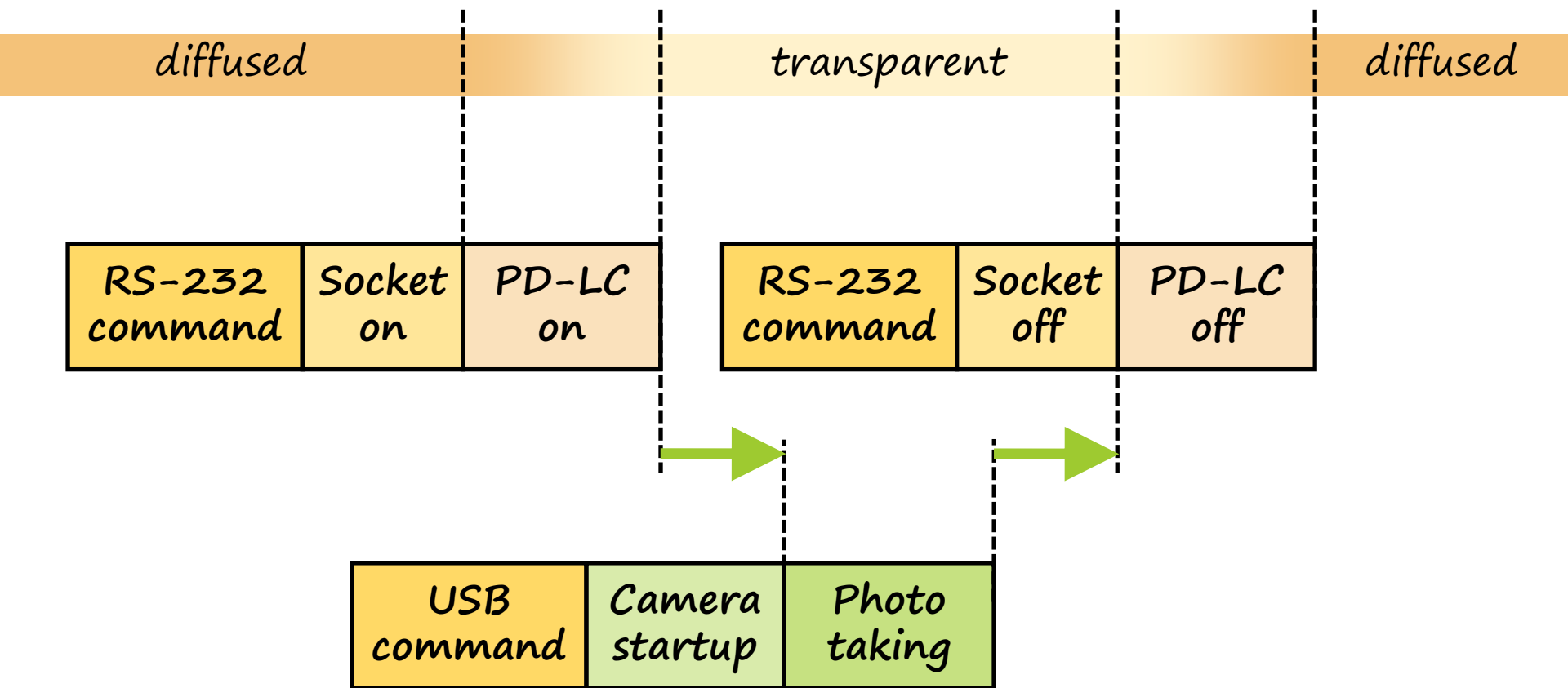
(not in a proper scale)



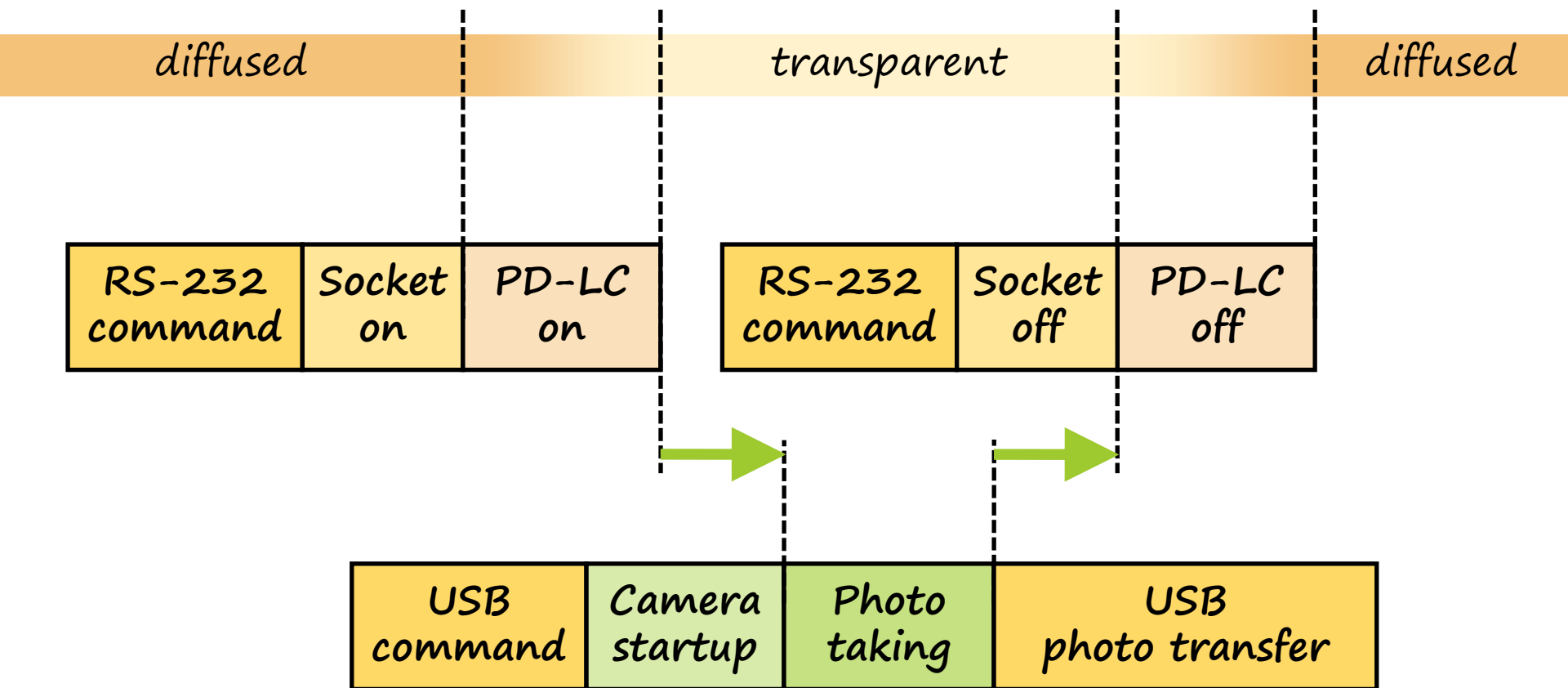
(not in a proper scale)



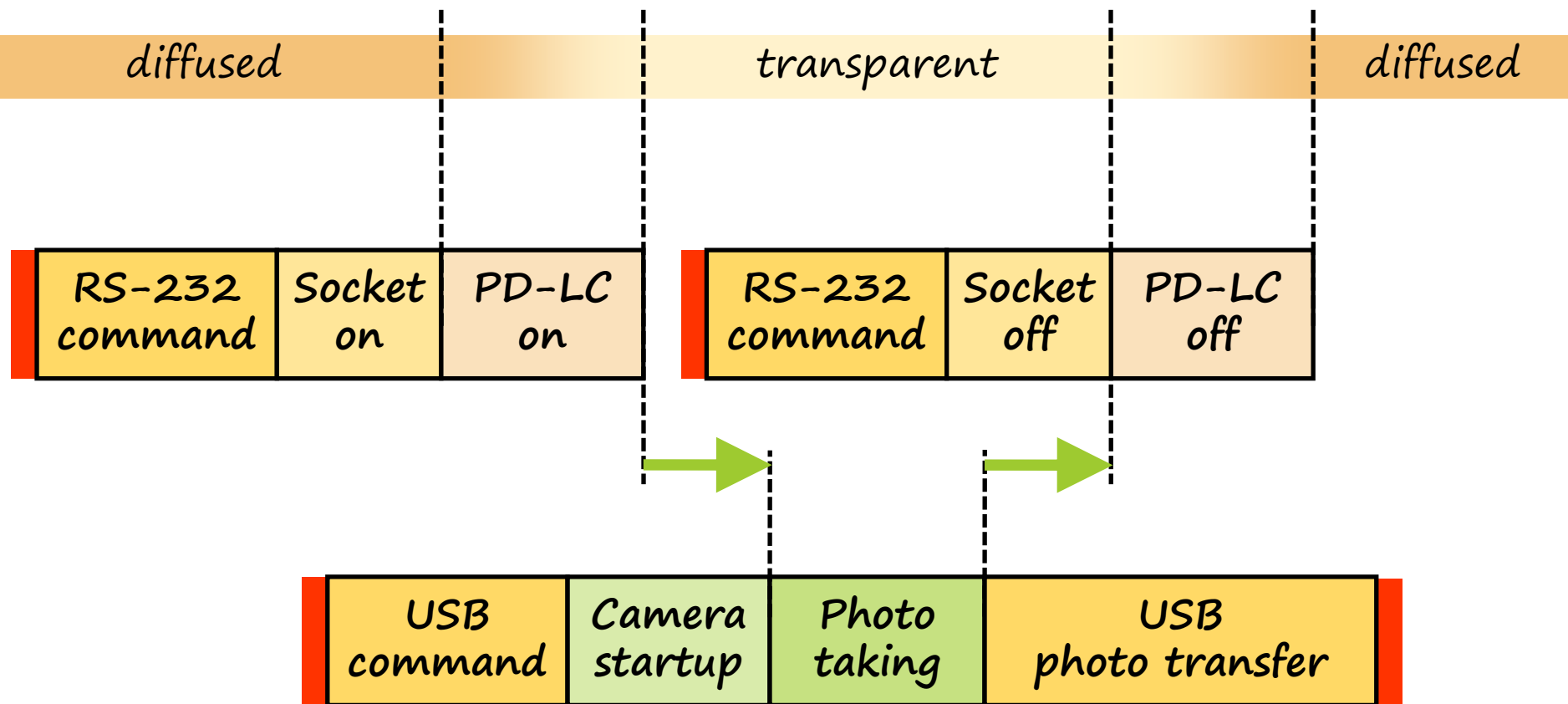
(not in a proper scale)



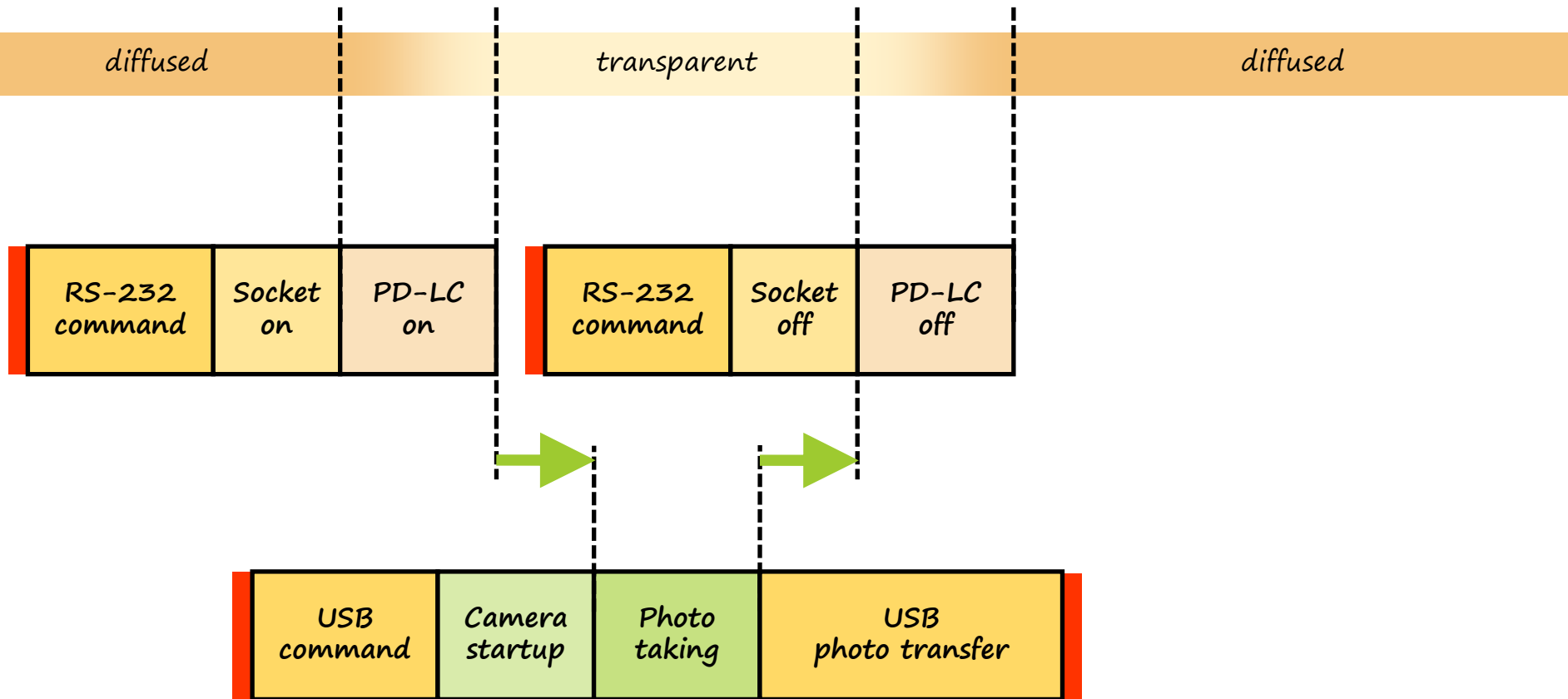
(not in a proper scale)



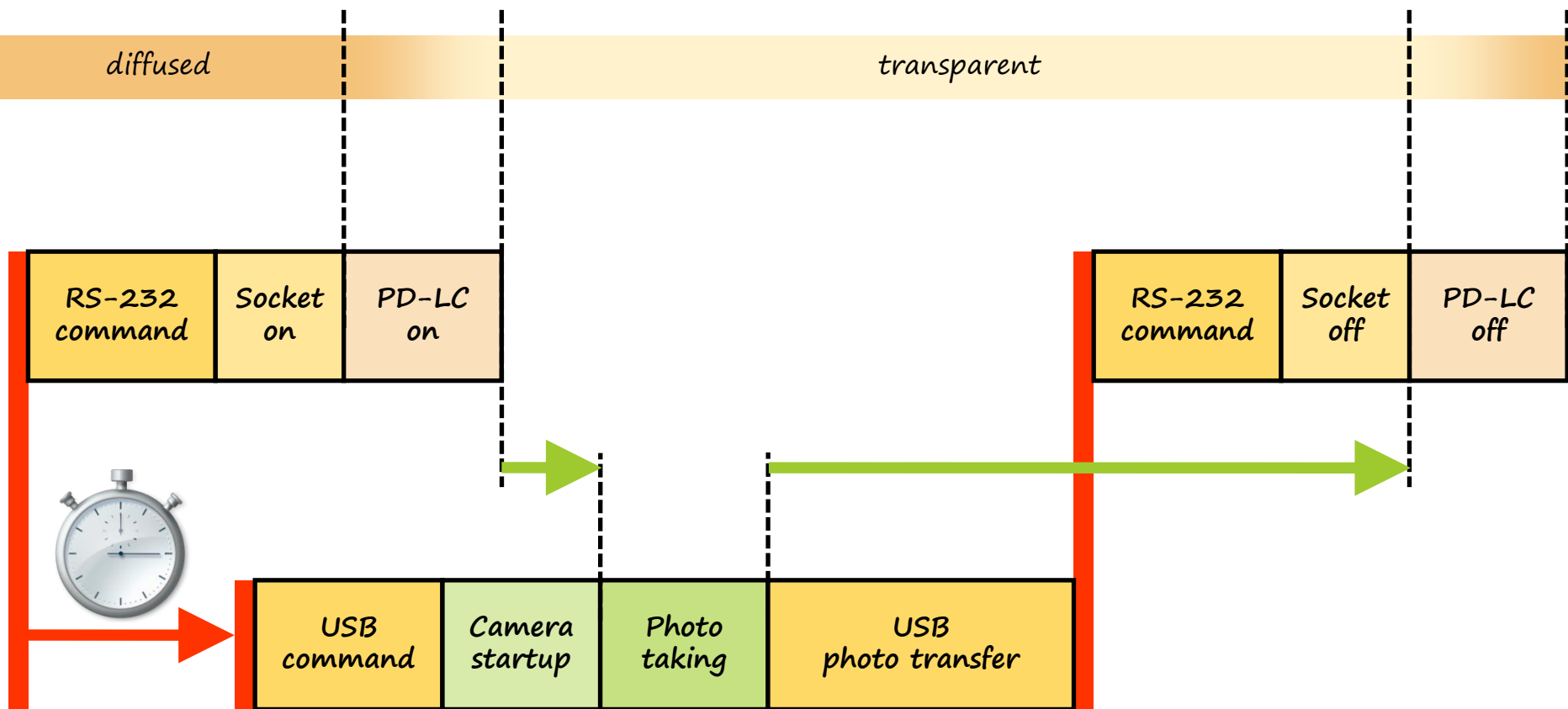
(not in a proper scale)



(not in a proper scale)



(not in a proper scale)



(not in a proper scale)

RESULT



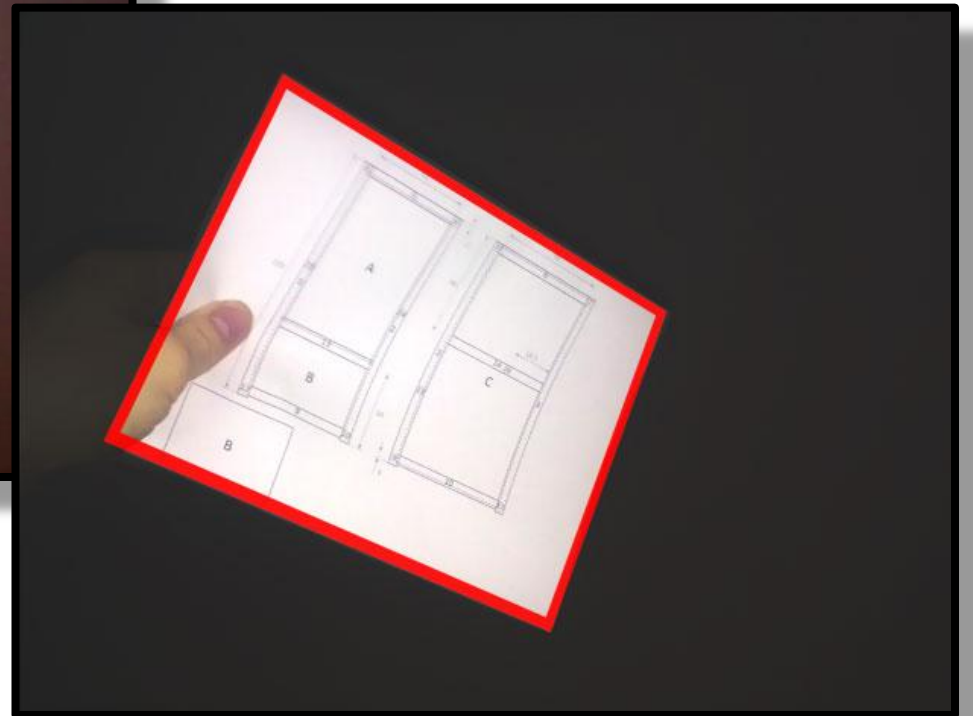
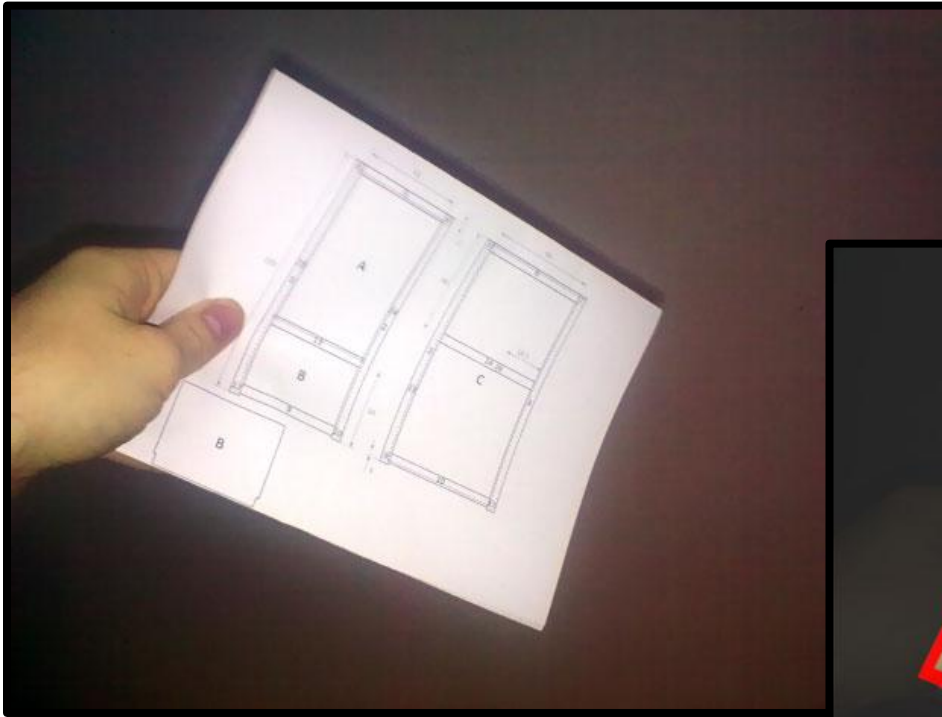
Now, try it!

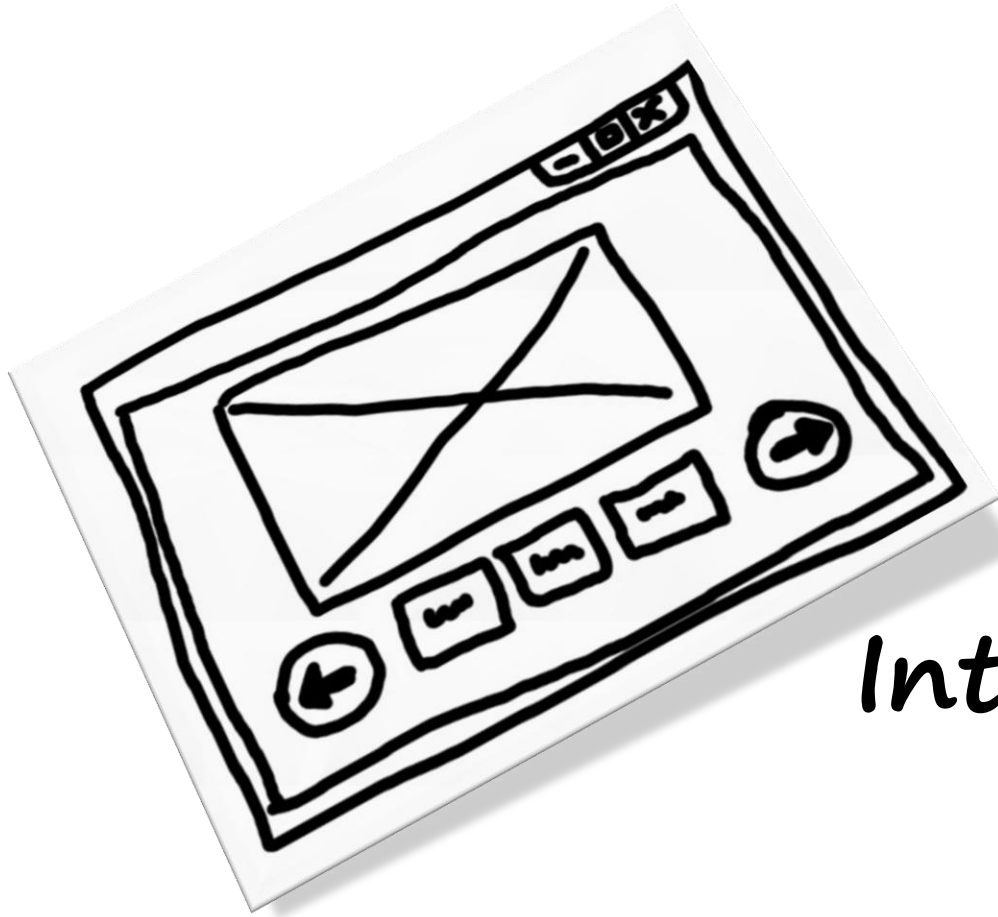
FUTURE WORK

Software optimization



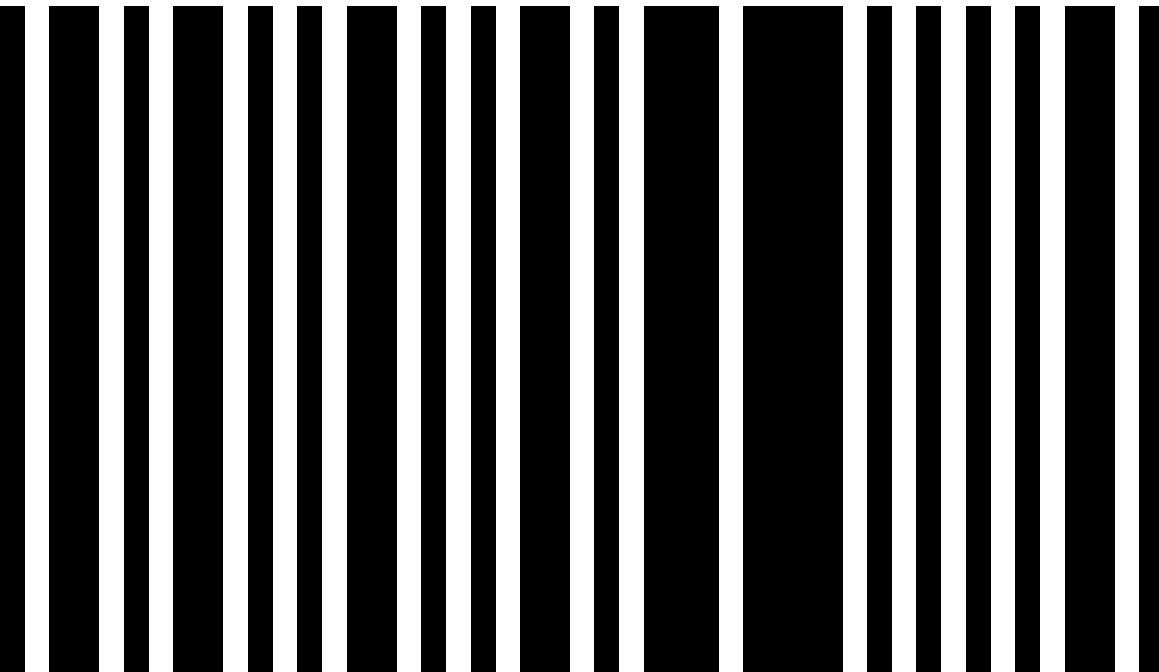
Automatic trimming





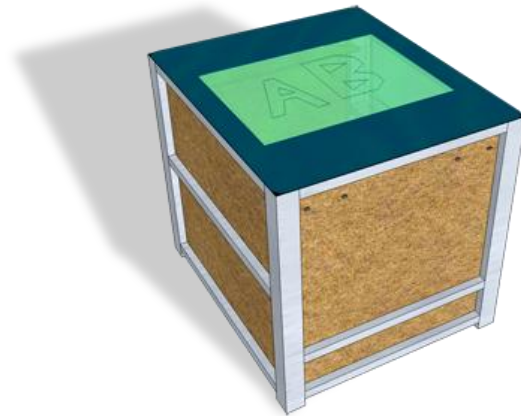
Applications

Interaction design



Barcodes recognition

More compact hardware setups



for **CESCG 2011**

by Jakub Hušek

husekjak@fel.cvut.cz



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