Filter: Red Horizontal

A **horizontal filter** allows light to enter from either the left or right side.   Any light hitting a horizontal filter from the top or bottom will be absorbed.

A **red filter** will pass only the red component of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	Red
Green	-----
Blue	-----
Cyan	-----
Violet	Red
Yellow	Red
White	Red

Filter: Green Horizontal

A **horizontal filter** allows light to enter from either the left or right side.   Any light hitting a horizontal filter from the top or bottom will be absorbed.

A **Green filter** will pass only the red component of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	-----
Green	Green
Blue	-----
Cyan	Green
Violet	-----
Yellow	Green
White	Green

Filter: Blue Horizontal

A **horizontal filter** allows light to enter from either the left or right side.   Any light hitting a horizontal filter from the top or bottom will be absorbed.

A **blue filter** will pass only the blue component of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	-----
Green	-----
Blue	Blue
Cyan	Blue
Violet	Blue
Yellow	-----
White	Blue

Filter: Cyan Horizontal

A **horizontal filter** allows light to enter from either the left or right side.   Any light hitting a horizontal filter from the top or bottom will be absorbed.

A **Cyan filter** will pass the blue and green components of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	-----
Green	Green
Blue	Blue
Cyan	Cyan
Violet	Blue
Yellow	Green
White	Cyan

Filter: Violet Horizontal

A **horizontal filter** allows light to enter from either the left or right side.   Any light hitting a horizontal filter from the top or bottom will be absorbed.

A **violet filter** will pass the red and blue components of any light entering it.   Its color pass chart is as follows:

Input	**Output**
Red	Red
Green	-----
Blue	Blue
Cyan	Blue
Violet	Violet
Yellow	Red
White	Violet

Filter: Yellow Horizontal

A **horizontal filter** allows light to enter from either the left or right side.   Any light hitting a horizontal filter from the top or bottom will be absorbed.

A **yellow filter** will pass the red and green components of any light entering it.   Its color pass chart is as follows:

Input	**Output**
Red	Red
Green	Green
Blue	-----
Cyan	Green
Violet	Red
Yellow	Yellow
White	Yellow

 Filter: Red Vertical

A **vertical filter** allows light to enter from either the top or bottom.   Any light hitting a vertical filter from the left or right will be absorbed.

A **red filter** will pass only the red component of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	Red
Green	-----
Blue	-----
Cyan	-----
Violet	Red
Yellow	Red
White	Red

Filter: Green Vertical

A **vertical filter** allows light to enter from either the top or bottom.   Any light hitting a vertical filter from the left or right will be absorbed.

A **Green filter** will pass only the red component of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	-----
Green	Green
Blue	-----
Cyan	Green
Violet	-----
Yellow	Green
White	Green

Filter: Blue Vertical

A **vertical filter** allows light to enter from either the top or bottom.   Any light hitting a vertical filter from the left or right will be absorbed.

A **blue filter** will pass only the blue component of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	-----
Green	-----
Blue	Blue
Cyan	Blue
Violet	Blue
Yellow	-----
White	Blue

Filter: Cyan Vertical

A **vertical filter** allows light to enter from either the top or bottom.   Any light hitting a vertical filter from the left or right will be absorbed.

A **Cyan filter** will pass the blue and green components of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	-----
Green	Green
Blue	Blue
Cyan	Cyan
Violet	Blue
Yellow	Green
White	Cyan

Filter: Violet Vertical

A **vertical filter** allows light to enter from either the top or bottom.   Any light hitting a vertical filter from the left or right will be absorbed.

A **violet filter** will pass the red and blue components of any light entering it.   Its color pass chart is as follows:

Input	Output
Red	Red
Green	-----
Blue	Blue
Cyan	Blue
Violet	Violet
Yellow	Red
White	Violet

Filter: Yellow Vertical

A **vertical filter** allows light to enter from either the top or bottom.   Any light hitting a vertical filter from the left or right will be absorbed.

A **yellow filter** will pass the red and green components of any light entering it.   Its color pass chart is as follows:

Input	**Output**
Red	Red
Green	Green
Blue	-----
Cyan	Green
Violet	Red
Yellow	Yellow
White	Yellow

Phosphor: Red, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **red phosphor** will accept any color light at its input and will emit red light (a primary) from its output.

Phosphor: Green, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **green phosphor** will accept any color light at its input and will emit green light (a primary) from its output.

Phosphor: Blue, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **blue phosphor** will accept any color light at its input and will emit blue light (a primary) from its output.

Phosphor: Cyan, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **cyan phosphor** will accept any color light at its input and will emit cyan light (blue + green) from its output.

Phosphor: Violet, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **violet phosphor** will accept any color light at its input and will emit violet light (red + blue) from its output.

Phosphor: Yellow, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **yellow phosphor** will accept any color light at its input and will emit yellow light (red + green) from its output.

Phosphor: White, Right-Firing

A **right-firing phosphor** will accept light only on its left side and will emit light from its right side.   Any light hitting the right-firing phosphor from the top, bottom, or right will be absorbed.

A **white phosphor** will accept any color light at its input and will emit white light (red + blue + green) from its output.

Phosphor: Red, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **red phosphor** will accept any color light at its input and will emit red light (a primary) from its output.

Phosphor: Green, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **green phosphor** will accept any color light at its input and will emit green light (a primary) from its output.

Phosphor: Blue, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **blue phosphor** will accept any color light at its input and will emit blue light (a primary) from its output.

Phosphor: Cyan, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **cyan phosphor** will accept any color light at its input and will emit cyan light (blue + green) from its output.

Phosphor: Violet, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **violet phosphor** will accept any color light at its input and will emit violet light (red + blue) from its output.

Phosphor: Yellow, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **yellow phosphor** will accept any color light at its input and will emit yellow light (red + green) from its output.

Phosphor: White, Left-Firing

A **left-firing phosphor** will accept light only on its right side and will emit light from its left side.   Any light hitting the left-firing phosphor from the top, bottom, or left will be absorbed.

A **white phosphor** will accept any color light at its input and will emit white light (red + blue + green) from its output.

Phosphor: Red, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **red phosphor** will accept any color light at its input and will emit red light (a primary) from its output.

 Phosphor: Green, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **green phosphor** will accept any color light at its input and will emit green light (a primary) from its output.

Phosphor: Blue, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **blue phosphor** will accept any color light at its input and will emit blue light (a primary) from its output.

Phosphor: Cyan, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **cyan phosphor** will accept any color light at its input and will emit cyan light (blue + green) from its output.

Phosphor: Violet, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **violet phosphor** will accept any color light at its input and will emit violet light (red + blue) from its output.

Phosphor: Yellow, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **yellow phosphor** will accept any color light at its input and will emit yellow light (red + green) from its output.

Phosphor: White, Downward-Firing

A **downward-firing phosphor** will accept light only on its top and will emit light from its bottom.   Any light hitting the downward-firing phosphor from the bottom, left, or right will be absorbed.

A **white phosphor** will accept any color light at its input and will emit white light (red + blue + green) from its output.

Phosphor: Red, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **red phosphor** will accept any color light at its input and will emit red light (a primary) from its output.

Phosphor: Green, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **green phosphor** will accept any color light at its input and will emit green light (a primary) from its output.

Phosphor: Blue, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **blue phosphor** will accept any color light at its input and will emit blue light (a primary) from its output.

Phosphor: Cyan, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **cyan phosphor** will accept any color light at its input and will emit cyan light (blue + green) from its output.

Phosphor: Violet, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **violet phosphor** will accept any color light at its input and will emit violet light (red + blue) from its output.

Phosphor: Yellow, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **yellow phosphor** will accept any color light at its input and will emit yellow light (red + green) from its output.

Phosphor: White, Upward-Firing

An **upward-firing phosphor** will accept light only on its bottom and will emit light from its top. Any light hitting the upward-firing phosphor from the top, left, or right will be absorbed.

A **white phosphor** will accept any color light at its input and will emit white light (red + blue + green) from its output.

Combiner: Left-Firing

Light is accepted at the right, top, and bottom inputs and re-transmitted through the left output.

All colors are "added" to produce the resultant light.   For instance, if only red is sent to ine or more inputs, red will come from the output.   If red and blue are sent into the combiner, violet will come out.   Sending red, blue, and green into the combiner will result in white output.

Combiner: Right-Firing

Light is accepted at the left, top, and bottom inputs and re-transmitted through the right output.

All colors are "added" to produce the resultant light.   For instance, if only red is sent to ine or more inputs, red will come from the output.   If red and blue are sent into the combiner, violet will come out.   Sending red, blue, and green into the combiner will result in white output.

Combiner: Upward Firing

Light is accepted at the left, right, and bottom inputs and re-transmitted through the top output.

All colors are "added" to produce the resultant light.   For instance, if only red is sent to ine or more inputs, red will come from the output.   If red and blue are sent into the combiner, violet will come out.   Sending red, blue, and green into the combiner will result in white output.

Combiner: Downward Firing

Light is accepted at the left, right,and   top inputs and re-transmitted through the bottom output.

All colors are "added" to produce the resultant light.   For instance, if only red is sent to ine or more inputs, red will come from the output.   If red and blue are sent into the combiner, violet will come out.   Sending red, blue, and green into the combiner will result in white output.

Light Source: Red, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **red light source** produces red (primary) light.

Light Source: Green, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **green light source** produces green (primary) light.

Light Source: Blue, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **blue light source** produces blue (primary) light.

Light Source: Cyan, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **cyan light source** produces cyan (blue + green) light.

Light Source: Violet, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **violet light source** produces violet (red + blue) light.

Light Source: Yellow, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **yellow light source** produces yellow (red + green) light.

Light Source: White, Left-Firing

A **left-firing light source** will emit light from an output on its left side.   It will absorb any light that hits it on any of its four sides.

A **white light source** produces yellow (red + green + blue) light.

Light Source: Red, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **red light source** produces red (primary) light.

Light Source: Green, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **green light source** produces green (primary) light.

Light Source: Blue, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **blue light source** produces blue (primary) light.

Light Source: Cyan, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **cyan light source** produces cyan (blue + green) light.

Light Source: Violet, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **violet light source** produces violet (red + blue) light.

Light Source: Yellow, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **yellow light source** produces yellow (red + green) light.

Light Source: White, Right-Firing

A **right-firing light source** will emit light from an output on its right side.   It will absorb any light that hits it on any of its four sides.

A **white light source** produces yellow (red + green + blue) light.

Light Source: Red, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **red light source** produces red (primary) light.

Light Source: Green, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **green light source** produces green (primary) light.

Light Source: Blue, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **blue light source** produces blue (primary) light.

Light Source: Cyan, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **cyan light source** produces cyan (blue + green) light.

Light Source: Violet, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **violet light source** produces violet (red + blue) light.

Light Source: Yellow, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **yellow light source** produces yellow (red + green) light.

Light Source: White, Upward-Firing

A **upward-firing light source** will emit light from an output on its top.   It will absorb any light that hits it on any of its four sides.

A **white light source** produces yellow (red + green + blue) light.

 Light Source: Red, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb
any light that hits it on any of its four sides.

A **red light source** produces red (primary) light.

Light Source: Green, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb any light that hits it on any of its four sides.

A **green light source** produces green (primary) light.

Light Source: Blue, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb any light that hits it on any of its four sides.

A **blue light source** produces blue (primary) light.

Light Source: Cyan, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb any light that hits it on any of its four sides.

A **cyan light source** produces cyan (blue + green) light.

Light Source: Violet, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb any light that hits it on any of its four sides.

A **violet light source** produces violet (red + blue) light.

Light Source: Yellow, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb any light that hits it on any of its four sides.

A **yellow light source** produces yellow (red + green) light.

Light Source: White, Downward-Firing

A **downward-firing light source** will emit light from an output on its bottom.   It will absorb any light that hits it on any of its four sides.

A **white light source** produces yellow (red + green + blue) light.

Target: Red, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **red target** will respond to red (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Green, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **green target** will respond to green (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Blue, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **blue target** will respond to blue (primary) light.

A target will only respond to a beam of light of *exactly* the right color. A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Cyan, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **cyan target** will respond to cyan (blue + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Violet, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **violet target** will respond to violet (red + blue) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Yellow, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **yellow target** will respond to yellow (red + green) light.

A target will only respond to a beam of light of *exactly* the right color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: White, Left-Entry

A **left-entry target** will respond only to the appropriately-colored light entering the left side. Any light hitting the top, right, or bottom sides will be absorbed.

A **white target** will respond to white (red + blue + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Red, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **red target** will respond to red (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Green, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **green target** will respond to green (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Blue, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **blue target** will respond to blue (primary) light.

A target will only respond to a beam of light of *exactly* the right color. A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Cyan, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **cyan target** will respond to cyan (blue + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Violet, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **violet target** will respond to violet (red + blue) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Yellow, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **yellow target** will respond to yellow (red + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: White, Right-Entry

A **right-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the top, bottom, or left sides will be absorbed.

A **white target** will respond to white (red + blue + green) light.

A target will only respond to a beam of light of *exactly* the right color. A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Red, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **red target** will respond to red (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Green, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **green target** will respond to green (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Blue, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **blue target** will respond to blue (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Cyan, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **cyan target** will respond to cyan (blue + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Violet, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **violet target** will respond to violet (red + blue) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Yellow, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **yellow target** will respond to yellow (red + green) light.

A target will only respond to a beam of light of *exactly* the right color. A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: White, Top-Entry

A **top-entry target** will respond only to the appropriately-colored light entering the right side. Any light hitting the bottom, left, or right sides will be absorbed.

A **white target** will respond to white (red + blue + green) light.

A target will only respond to a beam of light of *exactly* the right color. A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Red, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **red target** will respond to red (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Green, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **green target** will respond to green (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Blue, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **blue target** will respond to blue (primary) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Cyan, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **cyan target** will respond to cyan (blue + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Violet, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **violet target** will respond to violet (red + blue) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: Yellow, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **yellow target** will respond to yellow (red + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Target: White, Bottom-Entry

A **bottom-entry target** will respond only to the appropriately-colored light entering the right side.   Any light hitting the top, left, or right sides will be absorbed.

A **white target** will respond to white (red + blue + green) light.

A target will only respond to a beam of light of *exactly* the right   color.   A beam simply *containing* the target's required color as one of its components will not activate the target.

Blocker

All light hitting the blocker will be absorbed.

Mirror: Left-Up

Any light that hits this mirror from the left will be reflected upward.   Any light hitting from the right will be reflected downward.   Any light hitting from the top will be reflected to the left. Any light hitting from the bottom will be reflected to the right.   Both sides of the mirror can be used at once.

Mirror: Left-Down

Any light that hits this mirror from the left will be reflected downward.   Any light hitting from the right will be reflected upward.   Any light hitting from the top will be reflected to the right. Any light hitting from the bottom will be reflected to the left.   Both sides of the mirror can be used at once.
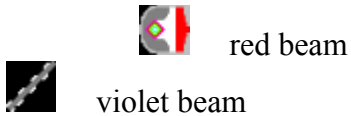
Half-Mirror: Left-Up

Amy beam of light that hits the half-mirror will be split.   One beam will be reflected like a similar standard mirror.   Another beam will pass straight through the mirror.   For instance, assume a beam of light hits the half-mirror from the left.   The two resulting beams will emerge from the top and the right side.

The half-mirror can also be used as a simple combiner.   Note this example:

violet beam

red beam

violet beam

blue beam

The red and blue beams are both reflecting and passing through the half-mirror.   This results in both red and blue mixing in the out-going beams.   THe result of (red + blue) is violet.

![icon] **Half-Mirror:** Left-Down

Amy beam of light that hits the half-mirror will be split.   One beam will be reflected like a similar standard mirror.   Another beam will pass straight through the mirror.   For instance, assume a beam of light hits the half-mirror from the left.   The two resulting beams will emerge from the bottom and the right side.

The half-mirror can also be used as a simple combiner.   Note this example:

violet beam

  red beam

  violet beam
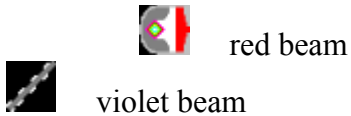
blue beam

The red and blue beams are both reflected and passed through the half-mirror.   This results in both red and blue mixing in the out-going beams.   The result of (red + blue) is violet.

Prism: Left-Entry

Any color light can enter from the left side.   The light will be broken into its red, green, and blue components.   The red light, if any, will exit from the top of this prism.   The green light, if any, will leave from the right side.   The blue light, if any, will leave from the bottom.   Any light that strikes the right, top, or bottom will be absorbed.

Prism: Right-Entry

Any color light can enter from the right side.   The light will be broken into its red, green, and blue components.   The red light, if any, will exit from the bottom of this prism.   The green light, if any, will leave from the left side.   The blue light, if any, will leave from the top.   Any light that strikes the left, top, or bottom will be absorbed.

Prism: Top-Entry

Any color light can enter from the top.   The light will be broken into its red, green, and blue components.   The red light, if any, will exit from the right side of this prism.   The green light, if any, will leave from the bottom.   The blue light, if any, will leave from the left side.   Any light that strikes the left, right, or bottom will be absorbed.

Prism: Bottom-Entry

Any color light can enter from the bottom.   The light will be broken into its red, green, and blue components.   The red light, if any, will exit from the left side of this prism.   The green light, if any, will leave from the top.   The blue light, if any, will leave from the right side.   Any light that strikes the left, right, or top will be absorbed.

Delay Line: 2-cycle

The **2-cycle delay** line is completely transparent.   Anythong   that goes into one side will come out the other.   However, the output will be delayed for two game cycles in the delay line.

 Delay Line: 4-cycle

The **4-cycle delay** line is completely transparent.   Anythong   that goes into one side will come out the other.   However, the output will be delayed for four game cycles in the delay line.

Delay Line: 6-cycle

The **6-cycle delay** line is completely transparent.   Anythong   that goes into one side will come out the other.   However, the output will be delayed for six game cycles in the delay line.

Delay Line: 8-cycle

The **8-cycle delay** line is completely transparent.   Anythong   that goes into one side will come out the other.   However, the output will be delayed for eight game cycles in the delay line.

Vari-Filter

The vari-filter will turn into a filter which can pass the first beam of "colored" light that hits it. For example, if a vari-filter is hit by yellow light moving from left to right, the vari-filter will turn into a horizontal yellow filter.

The exception to this rule is white light.   When the vari-filter is hit by a white beam, it will turn into a blocker.

Once the vari-filter changes into a "solid" object, it will not change again.

Turn Laser Sources On/Off

Toggles the LASER! light sources between On and Off.   When on, this icon will rotate and change colors.

Reset Optics Workbench

When in Puzzle Construction mode, all pieces are removed from the Optics Workbench and Spare Parts shelf.

When in Solve Puzzle mode, all spare parts are removed from the Optics Worknench and returned to the Spare Parts shelff.

Turn Sound On/Off

Turns the Laser and Target Hit sounds on & off.   The button icon represents what pressing the button will do, not what is currently set.   For instance when the sound is ON, the NO SOUND button will be displayed --   since pressing it will result in no sound.

Laser Animation Speed

Sets the laser animation speed -- the speed at which beams progress across the screen -- between 1 and 10, with 10 being the fastest.

The top "spinner" buttons increase or decrease the setting. The botom speed display shows the current setting.

Overview / Normal View

Switches the Optics Workbench screen between Overview and Normal View.

In Normal View, the parts are seen full-size.   The right and bottom scroll bars are used to scroll to various locations on the Optics Workbench

In Overview, the size of the optics bench is reduced so that the entire bench can be seen in the Optics Workbench window.

Dragging Object Box

Whenever you're dragging an object, its picture will appear in this box.

Previous Puzzle In Sequence

When you're running through a sequence of puzzles, this will take you back to the previous puzzle.

➡ Next Puzzle In Sequence

When you're running through a sequence of puzzles, this will advance you to the next puzzle.

Start / Stop a Puzzle Sequence

To play a puzzle sequence, chick this button.   A File Selection dialog box will appear.   Select the desired sequence to use.

When a sequence is in use, the icon on this button will turn into a stop sign.   Click the stop sign to end the sequence and return to individual puzzle mode to create or solve separate puzzles.

Solve A Puzzle

Select any puzzle to solve.   This button does not work when in a puzzle sequence.

Load A Puzzle for Construction

Load any puzzle into LASER! for construction.   When in construction mode, all pieces an the optics workbench can be moved.   Further, there's a complete parts catalog on the left side of the screen frm which you can get an unlimited supply of anything.

This button does not work while in a puzzle sequence.

Construct a New Puzzle

Put LASER! into construction mode with an empty Optics Workbench.   When in construction mode, all pieces on the workbench can be moved.   Further, there's a complete parts catalog on the left side of the screen frm which you can get an unlimited supply of anything.

Help!

To get help on an optics object, drop it onto this button.   To get help on any piece on the Optics Workbench that can't be moved or any button, press this button the mouse cursor will change to a question mark) and click on whatever you want help on.   If help is available on that object, you'll get it.

 Exit LASER!

Quit LASER!

Parts Catalog Window

This window will be available whenever you're designing a puzzle.   It contains an unlimited supply of every type of object available in LASER!   It'll be your source of new parts to build and modify puzzles.

Optics Workbench

This window is where the "optical system" is built, solved, and tested.   During puzzle construction, any object on the workbench can be moved around, moved to the parts shelf, or returned to the catalog.   When solving a puzzle, only pieces that started on the Parts Shelf can be moved or returned to the parts shelf.   All pieces that started on the workbench are locked there.

Workbench Horizontal Scroll Bar

Scrolls the workbench window horizontally when in normal viewing mode.   The scrollbar isn't needed in Overview mode and is deactivated.

Workbench Vertical Scroll

Scrolls the workbench window vertically when in normal viewing mode.   The scrollbar isn't needed in Overview mode and is deactivated.

Spare Parts Shelf

Wen solving a puzzle, all the spare parts that you need to make the puzzle work are on the Spare Parts Shelf.   You can drag parts between the workbench and the Parts Shelf..

When creating a puzzle, several key parts should be removed from the working puzzle and placed on the Spare Parts Shelf before being saved as a puzzle.

Status Bar FIle Name

File name of the currently open puzzle, if available.   New unsaved puzzles may not yet have a file name and will be called UNNAMED.

Status Bar Group Name

When solving a puzzle group, the name of the group file will appear here.   When not in the group puzzle mode, this box will be empty.

Status Bar Group Puzzle Number

When solving a puzzle group, the number of the current puzzle will appear here.   When not in the group puzzle mode, this box will be empty.

Status Bar Puzzle Status

When solving a puzzle group, this indicator tells you whether or not you already solved the current puzzle.   When not in the puzzle group mode, this box will be empty.

Status Bar Puzzle Title

Displays the title of the currently loaded puzzle.

Status Bar

The status bar displays a variety of information about the current puzzle and puzzle group such as puzzle file name, puzzle title, group file name, current puzzle number, and whether the puzzle was solved yet.

About Registration

The LASER! registration fee is $20.   The registration fee must be in US funds.   Overseas users can send either US currency or a check drawn on a US bank.   I'm not able to cash Eurocheques.

When you register Laser!, you will receive by return mail a registration number to get rid of the opening UNREGISTERED screen and a disk of puzzles.

When you register (or at any time after),   you can order a new set of program disks for $5. Your registration password will unlock all future versions -- or you will be given a new password with the upgrade.

You will also be able to order extra puzzle and parts disks as they become available for my usual $3 -$5 per disk copying and shipping charge.   I also hope to produce a printed and bound manual for about $5- $10.   Before ordering any of these, please write to find out what's available and what the exact price is.

I also plan to offer a 30% discount on the registration fee of   other products I produce.