Basic Application

• Example 1: Triplet
• Example 2: Beam Expander
• Example 3: Prism
Example 1: Triplet

- From ZEMAX/Cooke.zmax

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Example 1: Triplet

- Import to TracePro

![Model: Cooke](Model.png)
Example 1: Triplet

- Set grid raytrace then do raytrace
Example 1: Triplet

• By **Ray Sorting**, we can trace for individual surface
Example 1: Triplet

- See more rays
Example 1: Triplet

- Irradiance/ Illuminance Maps
Example 1: Triplet

- Candeala Plots
Example 2: Beam Expander

• 5X laser beam expander (OSLO)

![Diagram of 5X Galilean Laser Beam Expander]
Example 2: Beam Expander

- Imported to TracePro
Example 2: Beam Expander

- Grid source setting and tracing
Example 2: Beam Expander

- Set AR coating for two lenses
Example 2: Beam Expander

- Do the raytrace again
Example 2: Beam Expander

- Put a "NCKU" aperture before the first lens
Example 2: Beam Expander

- See the result
Example 2: Beam Expander

- Focusing type of beam expander
Example 2: Beam Expander

- Imported to TracePro
Example 2: Beam Expander

- Do the raytrace
Example 2: Beam Expander

- Put a "NCKU" aperture before the first lens
Example 2 : Beam Expander

- Trace again
Example 3: Prism
Example 3 : Prism

- How to create prisms in TracePro?
  - Take five thin sheets to make a prism

![Prism Diagram]

**Example 3 : Prism**

- How to create prisms in TracePro?
  - Take five thin sheets to make a prism

![Prism Diagram]

**Example 3 : Prism**

- How to create prisms in TracePro?
  - Take five thin sheets to make a prism

![Prism Diagram]

**Example 3 : Prism**

- How to create prisms in TracePro?
  - Take five thin sheets to make a prism

![Prism Diagram]
Example 3: Prism

• Boolean Operators -- Unite
Example 3: Prism

• How to create prisms in TracePro?
  – Boolean Operators -- Subtract
Example 3: Prism

- Set material of prism
Example 3: Prism

- What can prism do?
  - To separate the light pattern
Example 3: Prism

- Set multi-wavelength
- Do the raytrace
Example 3: Prism

- See the result
Example 3: Prism

- What can prism do?
  - To change direction of the ray
Example 3: Prism

- What can prism do?
  - To make a shift of ray
Example 3: Prism

- What can prism do?
  - To change the polarization direction

![Prism Diagram]

Optical System Design
http://www.phys.ncku.edu.tw/optics/

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2001/12/9
Example 3: Prism

• What can prism do?
  – Laser Beam Corrector