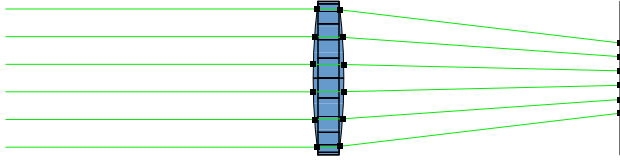


```

sys = {LineOfRays[45, NumberOfRays -> 6],
      Move[SphericalLens[{rr1, 200}, {rr2, -200}, 50, 10], {x, 100}],
      Move[Screen[50], 200]};
turbosys = TurboPlot[sys, PlotType -> TopView];

```



?OptimizeSystem

OptimizeSystem[system, options] optimizes the performance of an optical system for a specified set of input parameters.

OptimizeSystem first calls ConstructMeritFunction to create a RayTraceFunction according to the MeritType option setting and then calls a minimization algorithm according to the MinimizationType option. MeritType is internally converted into particular settings for the ReportedParameter and ReportedFunction options. As an alternative to using the MeritType option, the user can instead work directly with the ReportedParameters and ReportedFunction options. In addition to accepting an optical system of light sources and components, one or more previously calculated results from ConstructMeritFunction may be directly passed to OptimizeSystem. If more than one ConstructMeritFunction result is passed, OptimizeSystem uses the combined merit results to perform the minimization.

See also: ConstructMeritFunction, MeritType, MinimizationType, TurboTrace, and RayTraceFunction.

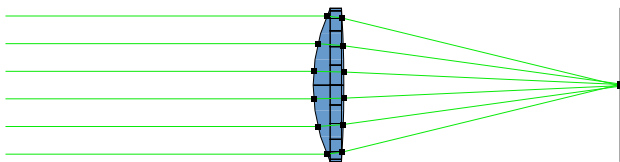
```

soln = OptimizeSystem[sys, SequentialTrace -> True]

{SymbolicValues -> {r1 -> 59.3988, r2 -> -392.903}, NumberOfCycles -> 437, FinalMerit -> 0.264563}

TurboPlot[turbosys, PlotType -> TopView, soln];

```



(* Drag Red Locator buttons to move the lens or screen. Use the sliders to change the radii of lens. Click on the Optimize button to optimize the system

*)

```
ManipulateSystem[{LineOfRays[45, NumberOfRays -> 6],
  Move[SphericalLens[{rr1, 200}, {rr2, -200}, 50, 10], {x, 100}],
  Move[Screen[50], {xscreen, 200}], {{rr1, 200}, 50, 900}, {{rr2, -200}, -100, -900},
  {DynamicFrame[PlotType -> TopView, Axes -> True], DynamicFrame[PlotType -> OptimizeSystem]}]
```

rr1

rr2

753.

-134.

TopView

Optimize

rr1

rr2

x

xscreen

using FindMinimum at Last e

rr1	rr2	x	xscreen	Cycles	Merit
753.	-134.	66.7582	289.623	24	0.165609

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