vec3< T >
#normal
#position
OpticalSurface< T, U >
+ OpticalSurface(const vec3< T > &position, const vec3< T > &normal)
+ virtual ~OpticalSurface ()=default
+ const vec3< T > & getNormal () const
+ void setPosition(const vec3< T > &newPosition)
+ virtual vec3< T > getIntersection Point(const Ray< T, U > &ray) const =0
+ virtual std::pair< bool, vec3< T > > intersects (const Ray< T, U > &ray) const =0
+ virtual void generatePoints (std::ofstream &outFile) const =0
-heightDirection
-widthDirection
PlanarSurface< T, U >
+ PlanarSurface(const vec3< T > &position, const vec3< T > &normal)
+ virtual ~PlanarSurface ()=default
+ vec3< T > getIntersection Point(const Ray< T, U > &ray) const override
+ virtual std::pair< bool, vec3< T > > intersects (const Ray< T, U > &ray) const =0
+ virtual void generatePoints (std::ofstream &outFile) const =0
T
-height
-width
PlanarRectangle< T, U >
+ PlanarRectangle(const vec3< T > &position, const vec3< T > &normal, T width, T height, const vec3< T > &widthDirection)
+ T getWidth() const
+ T getHeight() const
+ const vec3< T > & getHeight Direction() const
+ const vec3< T > & getWidth Direction() const
+ std::pair< bool, vec3 < T > > intersects(const Ray< T, U > &ray) const override
+ void generatePoints (std::ofstream &outFile) const override