

Antireflection coating

- ◆ **Coating model** High reliability AR coating
 Both sides multi-layer (three-layer) coat
 Composition of coating material : $Al_2O_3 + TiO_2 + SiO_2$ from glass surface

◆ **Testing item and condition**

Item	Condition
High temperature and high humidity storage test	A 95°C, 85%RH
	B 85°C, 85%RH
	C 75°C, 85%RH
Heat cycle test	-40°C(0.5h) ⇄ +100°C(0.5h) <Temperature rise time : 1.3Hr> <Temperature down time : 1.6Hr>
Pressure-cooker test	100°C, 110%RH

◆ **Confirmation sample**

Substrate of glass material as same as lens

◆ **Confirmation item and method**

Item	Method
Transmissivity	Substrate is setted in parallel rays from Laser Diode. The ray which passed the substrate is received with the sensor. And the power is measured
Peeling strength of AR coating	Pencil hardness test (JIS K5401) at the substrate

◆ **Result of confirmation**

High temperature and high humidity storage test		After 200H	After 500H	After 1000H	After 2000H	After 3000H	Judge
A	Transmissivit	+0.05%	+0.37%	±0.00%	-0.20%	-0.19%	OK
	Peeling strength	9H <	9H <	9H <	9H <	9H <	
B	Transmissivit	+0.14%	+0.34%	+0.17%	+0.04%	+0.06%	OK
	Peeling strength	9H <	9H <	9H <	9H <	9H <	
C	Transmissivit	-0.02%	+0.18%	+0.15%	-0.04%	+0.02%	OK
	Peeling strength	9H <	9H <	9H <	9H <	9H <	

Heat cycle test		After 10 cycle		Judge
Transmissivity	+0.05%	9H <	OK	
Peeling strength	9H <	9H <	OK	

Pressure-cooker test		After 240H	After 480H		Judge
Transmissivity	-0.01%	-0.12%	9H <	9H <	OK
Peeling strength	9H <	9H <	9H <	9H <	OK

Note

Transmissivity is amount of change from initial characteristic.
Initial peeling strength of AR coating is grater than 9H.