

List of Challenged Claims – USP 9,997,660

Claims 1-14	Claims 15-22
<p>1. [1.1] A light blocking sheet, comprising:</p> <p>[1.2] a first outer layer comprising a first opening;</p> <p>[1.3] a second outer layer comprising a second opening;</p> <p>[1.4] an inner substrate layer disposed between the first outer layer and the second outer layer, wherein the inner substrate layer connects the first outer layer to the second outer layer, and the inner substrate layer comprises a substrate opening; and</p> <p>[1.5] a central axis coaxial with the first opening, the second opening and the substrate opening;</p> <p>[1.6] wherein a minimum diameter of the substrate opening is Φ_{smin}, a diameter of the first opening is Φ_1, a diameter of the second opening is Φ_2, and the following conditions are satisfied:</p> <p>$2.0\ \mu m < (\Phi_{smin} - \Phi_1)/2 < 200\ \mu m$; and</p> <p>$2.0\ \mu m < (\Phi_{smin} - \Phi_2)/2 < 200\ \mu m$.</p>	<p>15. [15.1] A light blocking sheet, comprising:</p> <p>[15.2] a first outer layer comprising a first opening;</p> <p>[15.3] a second outer layer comprising a second opening;</p> <p>[15.4] an inner substrate layer disposed between the first outer layer and the second outer layer, wherein the inner substrate layer connects the first outer layer to the second outer layer, and the inner substrate layer comprises a substrate opening;</p> <p>[15.5] an air layer located between the first outer layer and the second outer layer, wherein the air layer is close to the first opening and the second opening; and</p> <p>[15.6] a central axis coaxial with the first opening, the second opening and the substrate opening;</p> <p>[15.7] wherein a length parallel to the central axis of the air layer is d, a minimum diameter of the substrate opening is Φ_{smin}, a diameter of the first opening is Φ_1, a diameter of the second opening is Φ_2, and the following conditions are satisfied:</p> <p>$5\ \mu m < d < 50\ \mu m$;</p> <p>$2.0\ \mu m < (\Phi_{smin} - \Phi_1)/2 < 200\ \mu m$; and</p> <p>$2.0\ \mu m < (\Phi_{smin} - \Phi_2)/2 < 200\ \mu m$.</p>

2. The light blocking sheet of claim 1, wherein the inner substrate layer is made of a plastic material, and each of the first outer layer and the second outer layer is made of a black carbon-containing material.	16. The light blocking sheet of claim 15, wherein the inner substrate layer is made of a plastic material, and each of the first outer layer and the second outer layer is made of a black carbon-containing material.
	17. The light blocking sheet of claim 16, wherein a thickness of each of the inner substrate layer, the first outer layer and the second outer layer is uniform.
3. The light blocking sheet of claim 1, wherein the minimum diameter of the substrate opening is Φ_{smin} , the diameter of the first opening is Φ_1 , the diameter of the second opening is Φ_2 , and the following conditions are satisfied: $3.0\ \mu m < (\Phi_{smin} - \Phi_1)/2 < 85\ \mu m$; and $3.0\ \mu m < (\Phi_{smin} - \Phi_2)/2 < 85\ \mu m$.	18. The light blocking sheet of claim 16, wherein the minimum diameter of the substrate opening is Φ_{smin} , the diameter of the first opening is Φ_1 , the diameter of the second opening is Φ_2 , and the following conditions are satisfied: $3.0\ \mu m < (\Phi_{smin} - \Phi_1)/2 < 85\ \mu m$; and $3.0\ \mu m < (\Phi_{smin} - \Phi_2)/2 < 85\ \mu m$.
4. The light blocking sheet of claim 1, further comprising: an air layer located between the first outer layer and the second outer layer, wherein the air layer is close to the first opening and the second opening.	
5. The light blocking sheet of claim 4, wherein a length parallel to the central axis of the air layer is d , and the following condition is satisfied: $5\ \mu m < d < 49\ \mu m$.	
6. The light blocking sheet of claim 4, wherein a thickness of the light blocking sheet is t , and the following condition is satisfied: $5\ \mu m < t < 49\ \mu m$.	
7. The light blocking sheet of claim 4, wherein a length parallel to the central axis of the air layer is d , a thickness of	19. The light blocking sheet of claim 16, wherein the length parallel to the central axis of the air layer is d , a thickness of the light blocking sheet is

the light blocking sheet is t, and the following condition is satisfied: $0.12 < d/t < 0.67$.	t, and the following condition is satisfied: $0.12 < d/t < 0.67$.
8. The light blocking sheet of claim 1, wherein the diameter of the first opening is $\Phi 1$, the diameter of the second opening is $\Phi 2$, and the following condition is satisfied: $0.93 < \Phi 1/\Phi 2 < 1.07$.	
9. The light blocking sheet of claim 1, wherein a maximum outer diameter of the light blocking sheet is Φ , a thickness of the light blocking sheet is t, and the following condition is satisfied: $1 < 1000t/\Phi < 50$.	
10. [10.1] An imaging lens module, comprising: [10.2] a barrel; [10.3] an optical lens assembly disposed in the barrel; and [10.4] the light blocking sheet of claim 1 disposed in the barrel.	20. [20.1] An imaging lens module, comprising: [20.2] a barrel; [20.3] an optical lens assembly disposed in the barrel; and [20.4] the light blocking sheet of claim 15 disposed in the barrel.
11. The imaging lens module of claim 10, wherein the first outer layer of the light blocking sheet further comprises a first surface corresponding to an object-side surface of the imaging lens module, the second outer layer of the light blocking sheet further comprises a second surface corresponding to an image-side surface of the imaging lens module, and at least one of the first surface and the second surface comprises an anti-reflection film coated thereon.	21. The imaging lens module of claim 20, wherein the first outer layer of the light blocking sheet further comprises a first surface corresponding to an object-side surface of the imaging lens module, the second outer layer of the light blocking sheet further comprises a second surface corresponding to an image-side surface of the imaging lens module, and at least one of the first surface and the second surface comprises an anti-reflection film coated thereon.

12. The imaging lens module of claim 11, wherein the anti-reflection film comprises a silicon dioxide material layer.	
13. The imaging lens module of claim 11, wherein only one of the first surface and the second surface comprises the anti-reflection film coated thereon.	
14. [14.1] An electronic apparatus, comprising: [14.2] the imaging lens module of claim 10; and [14.3] an image sensor disposed on an image surface of the imaging lens module.	22. [22.1] An electronic apparatus, comprising: [22.2] the imaging lens module of claim 20, and [22.3] an image sensor disposed on an image surface of the imaging lens module.