Claims

1. Device comprising at least one heat sink having at least one boundary surface facing a room, said boundary surface being configured to have a temperature being lower than a heat load inside said room, wherein at least one surface element is arranged between the boundary surface and the room, said surface element being at least partially permeable to heat radiation, wherein
the surface element is spaced apart from the boundary surface, thereby forming a gap between the surface element and the boundary surface and
the at least one surface element and the heat sink are surrounded by an edge compound, which is configured to seal the gap against the surrounding, wherein
said device comprises further at least one dehumidifying apparatus being configured to expel water from the gap between the surface element and the boundary surface.

2. Device according to claim 1, wherein the surface element has an optical transmission of more than about 50 % or more than about 70 % or more than about 80 % at at least one wavelength being selected from an interval between 3 µm and about 30 µm or between about 6 µm and 20 µm.

3. Device according to claim 1, wherein the heat sink (10) comprises any of a pipe register and a plate heat exchanger.

4. Device according to claim 1, comprising further an apparatus being configured to fill the gap with a protective gas or being configured to evacuate the gap.

5. Device according to claim 1, wherein said dehumidifying apparatus comprises any of at least one sorbent and at least one micro-pump and at least one heating apparatus and at least one valve and at least one fan and a porous material and a non-woven fabric.

6. Device according to claim 1, wherein the at least one surface element comprises at least one polymer or

7. Device according to claim 6, wherein the at least one polymer is selected from any of polyethylene and polymethyl metacrylate and polyvinyl chloride and polypropylene and polyethylene terephthalate and polyester and cellulose acetate butyrate and cellulose acetate.

8. Device according to claim 1, wherein the edge compound comprises at least one sealing element, comprising any of polyisobutylene and silicone and butyl rubber.

9. Device according to claim 1, wherein the edge compound is obtainable by forming a weld between the at least one surface element and the heat sink

10. Device according to claim 1, wherein the edge compound has at least one magnetic or mechanical lock being configured to couple the at least one surface element and the heat sink.

11. Device according to claim 1, comprising further at least one reflector being configured to guide heat radiation emerging from the heat load onto at least one boundary surface.

12. Device according to claim 1, wherein the boundary surface is at least partially covered with a non-woven fabric.

13. Device according to claim 12, wherein the non-woven fabric extends beyond the edge compound to the rear side of a heat insulation being arranged adjacent to said heat sink and on the opposite side of said boundary surface facing the room.

14. Method for air-conditioning a room, comprising the following steps
providing at least one heat sink having at least one boundary surface facing the room
bringing said boundary surface to a temperature being lower than a temperature of at least one heat load,
arranging at least one surface element between the boundary surface and the room, said surface element being at least partially permeable to heat radiation and forming a gap between said surface element and said boundary surface,
removing humidity from said gap by means of a dehumidifying apparatus.

15. Method according to claim 14, wherein the surface element has an optical transmission of more than about 50 % or more than about 70 % or more than about 80 % at at least one wavelength being selected from an interval between about 3 µm and 30 µm or between about 6 µm and 20 µm.

16. Method according to claim 14, wherein said gap is filled with a protective gas or said gap is evacuated.

17. Method according to claim 14, wherein said dehumidifying apparatus comprises any of at least one sorbent and at least one micro-pump and at least one heating apparatus and a gas flow (39).

18. Method according to claim 14, wherein said dehumidifying apparatus comprises at least one non-woven fabric covering said boundary surface at least partially, wherein
the non-woven fabric extends to the rear side of a heat insulation being arranged adjacent to said heat sink and on the opposite side of said boundary surface.

19. Method according to claim 14, wherein heat radiation emerging from the heat load is guided by means of at least one reflector onto the at least one boundary surface.