CLAIMS

1. A vacuum pump comprising:
a housing and a cooling element, the cooling element comprising

a base element, wherein by the base element an internal void is defined,

an inlet connected to the base element and in fluid connection with the internal void and

an outlet connected to the base element and in fluid connection with the internal void such that a coolant can flow from the inlet through the internal void to the outlet to dissipate heat,

wherein the base element is connected to the housing of the vacuum pump,

characterized in that

the internal void has a flat shape such that the width of the internal void is more than twice as large as the height of the internal void, and the height of the internal void is less than 3mm; and in that
the internal void comprises at least one corrugated surface to create turbulent flow within the internal void, wherein the at least one corrugated surface provides grooves or ribs which are arranged perpendicular to the direction of flow through the internal void.

2. The vacuum pump according to claim 1, characterized in that the base element has a flat shape.

3. The vacuum pump according to any of claims 1 or 2, characterized in that the base element comprises a bottom surface directly attached to a surface of the housing of the vacuum pump.

4. The vacuum pump according to claim 3, characterized in that a material thickness between the bottom surface and the internal void is less than 3mm, preferably less than 2mm and more preferably less than 1mm.

5. The vacuum pump according to any of claims 1 to 4, characterized by a turbulator element disposed within the internal void to create turbulent flow within the internal void.

6. The vacuum pump according to any of claims 1 to 5, characterized in that the base element is one piece.

7. The vacuum pump according to any of claims 1 to 2, characterized in that the base element is surrounded by a connecting element is directly connected to the housing of the vacuum pump.

8. The vacuum pump of claim 7, characterized in that the connection element is made from aluminum.

9. The vacuum pump according to any of claims 1 to 8, characterized in that the base element is made of stainless steel.