CLAIMS

1. A fan for a climate control outdoor unit comprising:

a plurality of airfoils located around a central hub, wherein each of the airfoils includes:

a leading edge;

a trailing edge opposite the leading edge;

a pressure side surface extending between the leading edge and the trailing edge; and

a suction side surface opposite the pressure side surface and extending between the leading edge and the trailing edge, wherein the leading edge includes a greatest negative deviation from a radial line of greater than 10% of a span of the airfoil and the greatest negative deviation is located at between 45% and 85% of the span of the airfoil wherein the greatest negative deviation defines a convex profile of the leading edge with respect to the pressure side surface and the leading edge includes a concave profile with respect to the pressure side surface located adjacent the central hub.

2. The fan of claim 1, wherein the greatest negative deviation from the radial line is greater than 15% of the span.

3. The fan of claim 2, wherein the greatest negative deviation from the radial line is located at between 60% and 80% of the span.

4. The fan of claim 1, wherein the airfoil at 0% of the span of the airfoil includes a negative deviation from the radial line of between 0% and 5% of the span of the airfoil.

5. The fan of claim 1, wherein the concave profile of the leading edge is centered at between 10% and 30% of the span of the airfoil.

6. The fan of claim 1, wherein the leading edge includes a downstream extending concavity and an upstream extending concavity and the downstream extending concavity is located radially inward of the upstream extending concavity.

7. The fan of claim 6, wherein an inflection point between the downstream extending concavity and the upstream extending concavity is located at between 15% and 50% of the span of the airfoil.

8. The fan of claim 1, wherein the airfoil includes a tip fence extending between the leading edge and the trailing edge of the airfoil having a concave profile extending along the pressure side surface of the airfoil.

9. The fan of claim 1, wherein a tip section located outward of 90% of the span of the airfoil includes a negative deviation of between 5% and 10% of the span from the radial line.

10. A fan housing assembly comprising:

a housing defining an inlet and a diffuser located fluidly downstream of the inlet;

a fan located within the fan housing and having a plurality of airfoils located around a central hub, wherein each of the airfoils includes:

a leading edge;

a trailing edge opposite the leading edge;

a pressure side surface extending between the leading edge and the trailing edge; and

a suction side surface opposite the pressure side surface and extending between the leading edge and the trailing edge, wherein the leading edge includes a greatest negative deviation from a radial line of greater than 10% of a span of the airfoil and the greatest negative deviation is located at between 45% and 85% of the span of the airfoil wherein the greatest negative deviation defines a convex profile of the leading edge with respect to the pressure side surface and the leading edge includes a concave profile with respect to the pressure side surface located adjacent the central hub.

11. The assembly of claim 10, wherein the diffuser is a diverging diffuser and the inlet includes a plurality of lobes separated by a corresponding recessed portion.

12. The assembly of claim 10, further comprising a downstream extending concavity along the leading edge of the airfoil and an upstream extending concavity along the leading edge of the airfoil and the downstream extending concavity is located radially inward of the upstream extending concavity.

13. The assembly of claim 12, wherein the greatest negative deviation from the radial line is greater than 15% of the span.

14. The assembly of claim 13, wherein the greatest negative deviation from the radial line is located at between 60% and 80% of the span.

15. The assembly of claim 10, wherein the airfoil at 0% the span of the airfoil includes a negative deviation from the radial line of between 0% and 5% of the span of the airfoil.

16. The assembly of claim 10, wherein the concave profile of the leading edge is centered at between 10% and 30% of the span of the airfoil.

17. The assembly of claim 10, wherein the airfoil includes a tip fence extending between the leading edge and the trailing edge of the airfoil having a concave profile extending along the pressure side surface of the airfoil.

18. The assembly of claim 10, wherein a tip section located outward of 90% of the span of the airfoil includes a negative deviation of between 5% and 10% of the span from the radial line.