CLAIMS:

1. A free-draining heat exchanger comprising:

a first heat exchange tube;

a second heat exchange tube spaced from and generally parallel to the first heat exchange tube; and

a fin contacting the first and second heat exchange tubes, the fin comprising:

an opening;

a louver for directing airflow through the opening and around the fin; and

at least one drainage enhancement feature for promoting removal of liquid from external surfaces of the heat exchanger.

2. The free-draining heat exchanger of claim 1, wherein the at least one drainage enhancement feature is selected from the group consisting of a louver angle greater than 45°, a notch, an overhanging edge, a descending lip, a curvature, an angle, a rotated fin structure and combinations thereof.

3. The free-draining heat exchanger of claim 1, wherein the louver has a louver angle between 45° and about 75°.

4. The free-draining heat exchanger of claim 1, wherein the first heat exchange tube comprises a first lateral edge, and wherein the fin further comprises:

a first overhanging edge extending beyond the first lateral edge of the first heat exchange tube.

5. The free-draining heat exchanger of claim 4, wherein the first overhanging edge extends beyond the first lateral edge of the first heat exchange tube by a distance between about 3 mm and about 10 mm.

6. The free-draining heat exchanger of claim 4, wherein the fin further comprises:

a first descending lip extending from the first overhanging edge.

7. The free-draining heat exchanger of claim 6, wherein the first descending lip comprises a cross-section selected from the group consisting of rectangular, trapezoidal, triangular, curved and combinations thereof.

8. The free-draining heat exchanger of claim 6, further comprising:

a third heat exchange tube; and

a second fin contacting the second and third heat exchange tubes, the second fin comprising:

a second overhanging edge extending beyond the first lateral edge of the first heat exchange tube; and

a second descending lip extending from the second overhanging edge, wherein a portion of the first descending lip overlaps with a portion of the second descending lip.

9. The free-draining heat exchanger of claim 6, further comprising:

a third heat exchange tube; and

a second fin contacting the second and third heat exchange tubes, the second fin comprising:

a second overhanging edge extending beyond the first lateral edge of the first heat exchange tube; and

a second descending lip extending from the second overhanging edge, wherein the second descending lip is spaced from the first descending lip by a gap.

10. The free-draining heat exchanger of claim 1, wherein the first heat exchange tube comprises a first lateral edge and a second lateral edge on an opposite side of the first heat exchange tube, and wherein the fin further comprises:

a first overhanging edge extending beyond the first lateral edge of the first heat exchange tube; and

a second overhanging edge extending beyond the second lateral edge of the first heat exchange tube.

11. The free-draining heat exchanger of claim 10, wherein the first overhanging edge extends beyond the first lateral edge of the first heat exchange tube farther than the second overhanging edge extends beyond the second lateral edge of the first heat exchange tube.

12. The free-draining heat exchanger of claim 10, wherein the fin further comprises:

a first descending lip extending from the first overhanging edge; and

a second descending lip extending from the second overhanging edge.

13. The free-draining heat exchanger of claim 1, further comprising:

a second fin contacting the first and second heat exchange tubes; and

a parallel portion connecting the fin and the second fin and substantially parallel to and contacting one of the first or second heat exchange tubes.

14. The free-draining heat exchanger of claim 13, wherein the fin, the second fin and the parallel portion are formed from a continuous piece of material.

15. The free-draining heat exchanger of claim 13, wherein the parallel portion forms a sharp corner with the fin to reduce liquid surface tension.

16. The free-draining heat exchanger of claim 13, wherein the fin comprises a notch on the fin adjacent the parallel portion.

17. The free-draining heat exchanger of claim 16, wherein the notch spans an edge of the fin.

18. The free-draining heat exchanger of claim 16, wherein the notch spans an area of the fin between but not including edges of the fin.

19. The free-draining heat exchanger of claim 16, wherein the notch comprises a cross-section selected from the group consisting of oval, rectangular, trapezoidal, triangular, elliptical, racetrack and combinations thereof.

20. The free-draining heat exchanger of claim 16, wherein the fin comprises between about one notch and about five notches, and wherein each notch has a length between about 3 mm and about 32 mm and a height between about 1 mm and about 5 mm.

21. The free-draining heat exchanger of claim 14, wherein the fin further comprises a first overhanging edge extending beyond a first lateral edge of the first heat exchange tube, and wherein the second fin comprises a second overhanging edge extending beyond the first lateral edge of the first heat exchange tube, and wherein the parallel portion comprises a third overhanging edge extending beyond the first lateral edge of the first heat exchange tube.

22. The free-draining heat exchanger of claim 21, wherein the third overhanging edge comprises a notch.

23. The free-draining heat exchanger of claim 21, further comprising:

a notch located at an intersection of the first and third overhanging edges.

24. The free-draining heat exchanger of claim 21, wherein the first overhanging edge is separated from the fin and bent downward to form a descending lip adjacent the second fin.

25. The free-draining heat exchanger of claim 1, wherein the fin has a curvature.

26. The free-draining heat exchanger of claim 25, wherein the fin comprises a notch adjacent the first or second heat exchange tube.

27. The free-draining heat exchanger of claim 1, wherein the fin comprises:

a first fin segment; and

a second fin segment connected to the first fin segment, wherein the first fin segment and the second fin segment form an angle between about 100° and about 170°.

28. The free-draining heat exchanger of claim 27, wherein the first fin segment comprises a notch adjacent the first or second heat exchange tube.

29. The free-draining heat exchanger of claim 1, further comprising:

a plurality of fins contacting the first and second heat exchange tubes, wherein adjacent fins are connected to form a corrugated pattern along a longitudinal axis of the first and second heat exchange tubes.

30. A free-draining fin structure comprising:

an array of fins disposed between adjacent heat exchange tubes for providing enhanced water drainage by reducing liquid surface tension, each fin in the array of fins comprising:

an opening;

a louver for directing airflow through the opening and around the fin; and

at least one drainage enhancement feature.

31. The free-draining fin structure of claim 30, wherein the at least one drainage enhancement feature is selected from the group consisting of a louver angle greater than 45°, a notch, a sharp corner, an overhanging edge, a descending lip, a curvature, an angle, a rotated fin structure and combinations thereof.

32. The free-draining fin structure of claim 30, further comprising:

a parallel portion connecting adjacent fins in the array for engaging with a heat exchange tube.

33. The free-draining fin structure of claim 30, wherein the louver has a louver angle greater than 45°.

CLAIMS:

1. A free-draining heat exchanger comprising:

a first heat exchange tube;

a second heat exchange tube spaced from and generally parallel to the first heat exchange tube; and

a planar fin contacting the first and second heat exchange tubes, the fin comprising:

a plurality of louvers, a first group of the louvers opening towards a first edge of the first heat exchange tube and a second group of the louvers opening towards a second edge of the first heat exchange tube;

at least one drainage enhancement feature for promoting removal of liquid from external surfaces of the heat exchanger.

2. The free-draining heat exchanger of claim 1, wherein the at least one drainage enhancement feature is selected from the group consisting of a louver angle greater than 45°, a notch, an overhanging edge, a descending lip, a curvature, an angle, a rotated fin structure and combinations thereof.

3. The free-draining heat exchanger of claim 1, wherein the louver has a louver angle between 45° and about 75°.