

ABSTRACT

COMPUTER ROOM COOLING SYSTEM WITH BIFURCATED HEATED AIR RETURN PATHWAY

5

10

15

A computer room cooling system including a plurality of bifurcated heated air return pathways for heated air generated by a plurality of server rack rows **15C** operating in a computer room **15** with a false ceiling plenum **16** and a heated air collection duct **14C**. A first heated air return pathway **61** routed the heated air from a hot aisle duct **18** into a heated air collection duct **14C**. A second heated air return pathway **62** routes the heated air from the hot aisle duct **18** into a voluminous false ceiling plenum **16** before the heated air is routed into the heated air collection duct **14C**. Dampers **20** with mechanical thermostats **22** are employed to control airflow between the hot aisle duct **18** and the voluminous false ceiling plenum **16**.

FIG. 4A