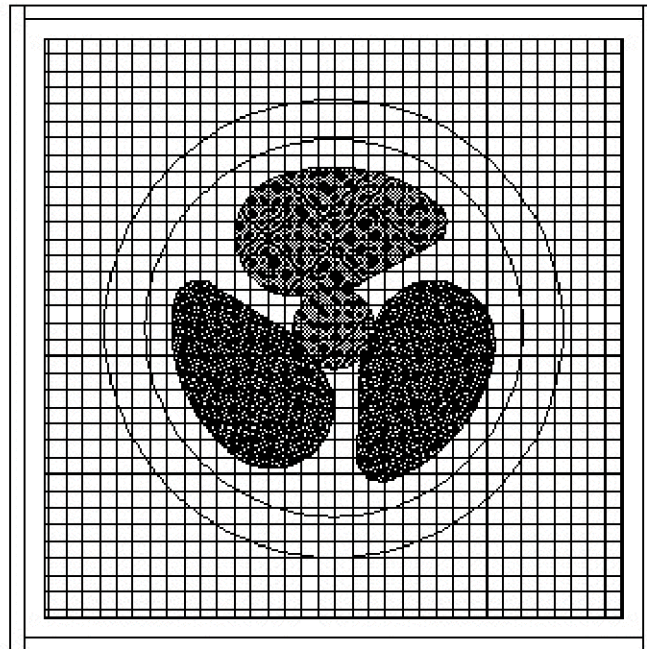




***C.A.D.***  
***(Cold Aisle Destrat)***



## **Application Engineering**

Supermarket *Environmental Services CO.*  
721-A Park Centre Drive, Kernersville, NC 27284  
Phone: (336)996-2220 Fax: (336)996-3360  
[WWW.TRS-SESCO.COM](http://WWW.TRS-SESCO.COM)



***C.A.D. (Cold Aisle Destrat)***

## **Destratification Fan Application Engineering**

### **Fan Selection**

The fans are applied through the sensible heat transfer formula  
**Q (BTU/hr) = 1.08 x T.D. x SCFM.** Model 1000 supplies approx. 1100  
cfm of supply air. If case credits are to be removed from a cold aisle,  
the formula to calculate the fan quantity is:

$$\# \text{ fans} = \frac{\text{Case Credits (BTU/hr)}}{1.08 \times \text{T.D.} \times 1100}$$

where T.D. is ceiling to floor temperature difference in deg.

In a typical store, we measure T.D. at 15 deg. F. from 12" above the  
floor to 12" below the ceiling. In this typical case, the fan formula is:

$$\# \text{ fans} = \frac{\text{Case Credits (BTU/hr)}}{17820}$$



## ***C.A.D. (Cold Aisle Destrat)***

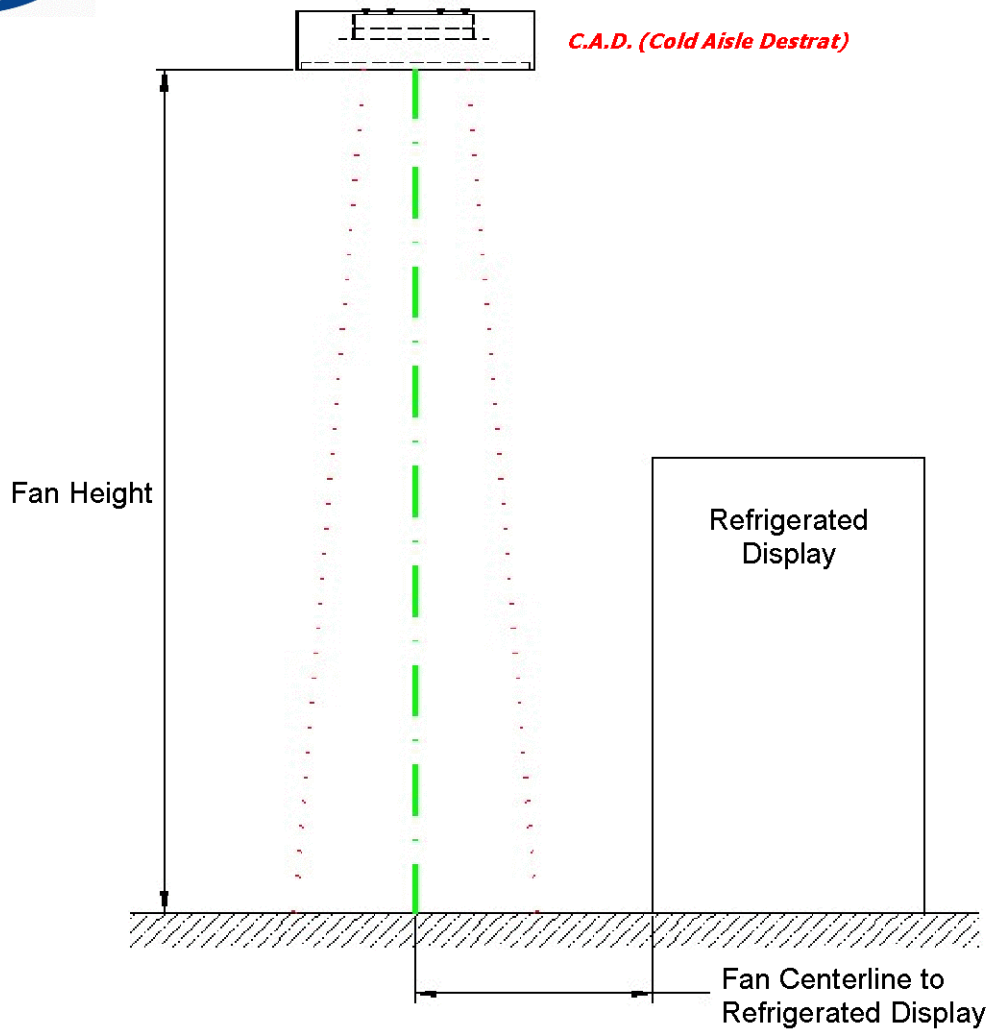
### **Fan Location**

The *C.A.D. (Cold Aisle Destrat)* fans are useful in supermarkets due to the laminar flow and minimized divergence in the air flow pattern. The supply air leaves the fan in a 12" diameter stream. As the air travels, this air stream maintains a tight pattern. In a free flow condition, the air stream opens up to only 30" in a travel distance of 20 feet. When the air stream approaches the floor, it spreads out and travels along the floor.

The floor plume that rises slightly as the air stream hits the floor determines the acceptable fan location relative to refrigerated display cases. The *C.A.D. (Cold Aisle Destrat)* fans can be placed in proximity to refrigerated display cases as shown in the following chart. These numbers will work in most cases. However, some supermarket sales floor layout patterns will require greater spacing than shown.



**C.A.D. (Cold Aisle Destrat)**



Fan Height—Ceiling to Floor	Minimum Distance—Fan Centerline to Edge of Refrigerated Display
10'-0"	20"
11'-0"	21"
12'-0"	22"
13'-0"	23"
14'-0"	24"
15'-0"	25"
16'-0"	26"
17'-0"	27"
18'-0"	28"
19'-0"	29"
20'-0"	30"