Massachusetts Technology Assessment Committee (MTAC)

Adaptive Photonic Controller

Date reviewed: 11/12/2020

Description of Technology

The Adaptive Photonic Controller is a device that varies the speed of single-phase fan motors to match air circulation requirements. To achieve this, the device uses sensors and photonic processing techniques to manage/regulate the voltage supplied to the motor. Savings are achieved from fan speed reduction and control.

Energy Saving Opportunity

Sector(s):		Residential
	☑	Commercial & Industrial
Applicability Criteria:	Single speed, single phase motors < 5hp	
Efficiency Improvement:	Motor speed reduction and control	
Energy (%) Savings Potential:	30% - 50%	
Demand (%) Reduction Potential:	~45%	

Strengths

- No digital to analogue or analogue to digital conversions
- Less noise
- Less harmonics

Weakness

- Only suitable for single phase motors
- Not suitable for motors > 5hp
- Economics need to be evaluated based hours of use and motor Hp

Third Party Analysis/ Previous MTAC Reviews

- ConEdison
- Environmental Test Laboratory
- EME Consulting Engineers (NYSERDA)
- SUNY Oneonta
- McQuay Cooling Tests
- Purdue University Tests
- ConEdison Tests by ERS

Suppliers Known to MTAC

Aclectic (A Division of Custom Electronics)

MTAC Status

Acknowledged to have energy savings potential and recommended to individual PA for their own EE program consideration

Market Development Issues

Cost:	$350 - $450
Market Risk and Barriers:	Minimal Risk
Time to Market:	Currently on market
Simple Pay-back: (Years)	1 - 4