

# Ventilation Systems



CURTAIN  
**CONTROLLER**

**INTEGRA**  
WIND-CLIMATE MANAGEMENT SYSTEM  
**SUNDIAL**  
Power Module LD-7000

**INTEGRA**  
WIND-CLIMATE MANAGEMENT SYSTEM

**FEATHERWEIGHT BIRD SCALE**

ZONE 1  
IS 1-2  
WE 3

A diagram showing a bird scale system with six numbered zones (1-6) and directional arrows (up, down, left, right) indicating the scale's operation.

**INTEGRA** **EXPERT**  
WIND-CLIMATE MANAGEMENT SYSTEM

Lo

Temp	24.0
Hum	50%
Wind	10 m/s
Dir	180°
Pressure	1013 hPa
CO2	400 ppm
CO	0.1 ppm
NO2	0.05 ppm
SO2	0.01 ppm
O3	0.01 ppm
PM10	0.1 mg/m3
PM2.5	0.05 mg/m3
PM1	0.01 mg/m3
Light	1000 lux
IR	1000 lux
UV	0.1 mW/m2
Temp History	24.0, 23.5, 23.0, 22.5, 22.0
Hum History	50%, 48%, 46%, 44%, 42%
Wind History	10, 8, 6, 4, 2
Dir History	180, 170, 160, 150, 140
Pressure History	1013, 1012, 1011, 1010, 1009
CO2 History	400, 390, 380, 370, 360
CO History	0.1, 0.1, 0.1, 0.1, 0.1
NO2 History	0.05, 0.05, 0.05, 0.05, 0.05
SO2 History	0.01, 0.01, 0.01, 0.01, 0.01
O3 History	0.01, 0.01, 0.01, 0.01, 0.01
PM10 History	0.1, 0.1, 0.1, 0.1, 0.1
PM2.5 History	0.05, 0.05, 0.05, 0.05, 0.05
PM1 History	0.01, 0.01, 0.01, 0.01, 0.01
Light History	1000, 900, 800, 700, 600
IR History	1000, 900, 800, 700, 600
UV History	0.1, 0.1, 0.1, 0.1, 0.1

A control panel with a screen displaying various environmental data and a set of directional buttons (up, down, left, right) and a power button.

**Cumberland**®

# Galvanized Fans

## Lower Costs... Increase Profits

Cumberland ventilation systems are the perfect solution for more efficient, high performance, climate control in poultry production facilities. Our equipment has been field refined and industry proven to be extremely effective in reducing bird stress caused by overheated or poorly ventilated houses. Even if your building is well ventilated, inefficient equipment can blow healthy bird profits right out the window. If you're looking for a better return on your investment, look to Cumberland, your ventilation company.



### Box Fans

Cumberland box fans feature heavy duty galvanized steel housings, grill guards, venturis and propellers. Offered in 36" (14" and 19" depth) or 50" (21" and 25" depth) diameters, these fans are available in either direct or belt drive models.

### Belt Drive Fans

Our belt drive fans come standard with high quality greasable pillow block bearings and an automatic belt tensioner that ensures proper belt tension.



### Slantwall Fans

Cumberland offers 36" and 50" galvanized steel belt drive and direct drive slantwall fans to efficiently and effectively maintain optimal environmental conditions. All galvanized fans are constructed of heavy gauge, G-90 grade galvanized steel and use totally enclosed "TEAO" motors designed for high efficiency and continuous duty cycles. Galvanized fan propellers are aerodynamically balanced for maximum airflow.



### Cone Fans

Optional discharge cones can boost fan output by as much as 10-15%, greatly increasing efficiency. Made of all galvanized steel, cones are available in easy to ship and assemble four-piece segments for 36" & 50" models.

# Fiberglass Fans



### The Boss Cone Fan

Cumberland's 52" fiberglass cone fan is the newest generation of ventilation equipment. The Boss Fan was designed for poultry facilities that desire high capacity and efficiency. Choose from the more economical galvanized steel propeller or the premium stainless steel propeller. Both styles of propellers are balanced for maximum airflow. Upon request, housings can be shipped in a two-piece knockdown version, along with the four piece cone dramatically reducing freight cost. Other features include vinyl coated guard, stainless steel square tubing, and stainless steel hardware.



### 52" Fiberglass Belt Drive

The belt drive Boss Fan offers an automatic belt tensioner that provides smooth operation and maintains constant belt tension. Features include easy access for belt removal, fiberglass housing and cone, stainless steel square tubing, motor base and mounting hardware. Like all Cumberland belt drive fiberglass fans, cast iron pulleys and greasable pillow block bearings are standard features.

### Fiberglass Fans

Cumberland's fiberglass ventilation fans are available in 36" and 50" diameters, with and without cones. These fans are manufactured using a "Resin Transfer Molding" (RTM) process for a smooth finish on both interior and exterior surfaces of the fan housing. The motor mount and internal framework of the fan is constructed of corrosion resistant, heavy gauge aluminum and assembled with stainless steel hardware. The basic fan includes a heavy vinyl coated guard, shutter, all aluminum and stainless steel mounting hardware.



*Fan Specifications on following page.*



### Composite Propellers

Props are made of a tough composite fiberglass. Engineered with a true airfoil design, these propellers increase the overall efficiency of the fan providing optimum airflow effectiveness.



### Drive Train

Drive shafts of 1" material allow for large, cast iron, greasable pillow block bearings to be used for longer life. Large pulleys allow for longer belt life and smoother operation.

# Fan Specifications

## GALVANIZED FAN SPECIFICATIONS

Model	Dia.	Cone	Drive	HP	RPM	cfm@.0sp	cfm/w@.0sp	cfm@.05sp	cfm/w@.05sp	cfm@.1sp	cfm/w@.1sp	Test#
CGBD3614	36"	No	Direct	1/2	850	10950	19.3	10280	17.7	9560	16.0	94131
CGSD36	36"	No	Direct	1/2	850	10417	17.5	9747	15.8	9105	14.2	94-0015
CGSDC36	36"	Yes	Direct	1/2	850	11272	22.1	10519	19.4	9760	16.9	98-0086
CGBD5021	50"	No	Direct	1 1/4	850	20450	19.9	19200	17.8	17910	15.9	94283
CGSD50	50"	No	Direct	1 1/4	850	19900	19.3	18700	17.5	17400	15.6	94328
CGSDC50	50"	Yes	Direct	1 1/4	850	20800	21.3	19400	19.0	18000	16.8	95272
CGBB3614	36"	No	Belt	1/2	850	10171	19.6	9615	17.8	8969	15.8	00128
CGSB36	36"	No	Belt	1/2	850	10578	19.0	9984	17.1	9379	15.5	98273
CGSBC36	36"	Yes	Belt	1/2	850	11341	20.9	10653	18.4	9898	16.4	98275
CGBB5021	50"	No	Belt	1	585	20861	20.9	19486	19.1	18071	17.4	94276
CGSB50	50"	No	Belt	1	585	22373	18.6	21042	17.0	19595	15.5	98283
CGSBC50	50"	Yes	Belt	1	585	23800	22.4	22400	20.4	20900	18.7	95269

## FIBERGLASS FAN SPECIFICATIONS

Model	Dia.	Cone	Drive	HP	RPM	cfm@.0sp	cfm/w@.0sp	cfm@.05sp	cfm/w@.05sp	cfm@.1sp	cfm/w@.1sp	Test#
APPB-36	36"	No	Belt	1/2	830	10456	16.1	10152	15.4	9339	14	
APPB-36C	36"	Yes	Belt	1/2	830	11232	18.2	10905	17.5	10135	15.8	
APPB-50	50"	No	Belt	1	590	21508	17.55	20160	15.7	18707	14.4	
APPB-50C	50"	Yes	Belt	1	590	24282	23.4	22760	21.0	21129	19.0	01251
F52CL16GA	52"	Yes	Belt	1	640	29529	23.3	28034	21.0	26560	19.0	02489
F52CL16GE	52"	Yes	Belt	1	530	24671	32.6	22796	28.2	20819	24.5	02493

## Fan Shutters

Available in a variety of sizes and materials, we have a shutter to fit your particular requirements be it low light, low maintenance or low cost. The true airfoil design of our shutter blades make them extremely effective allowing for very little performance loss. Simple to install and built to last a lifetime, Cumberland shutters can provide an easy and affordable means of controlling incoming light and building climate.

### Cumberland Shutters

Cumberland offers a variety of shutters. PVC shutters come in white or black, and are very low maintenance and easy to clean. The black shutters are used in reduced lighting applications. Galvanized shutters have galvanized frames, with epoxy painted blades to reduce rusting, allow easy cleaning and provide additional protection. Aluminum shutters offer great durability in any environment. They have no parts to rust, and are practically maintenance free.



Galvanized Epoxy Painted

Aluminum

PVC (White)

PVC (Black)

# Curtain Machine Controllers

## Solid Construction, Simple Operation.

Choose between two different styles of Curtain Machines to maintain precise control of the environment in ventilated poultry houses. The most commonly used machine is the Curtain Controller and is available with pulleys or sprockets. The traditional Auto Curtain Machine comes with a grooved drum for cable or sprocket for chain drive. Both models are available in a variety of curtain speeds and feature heavy-duty construction with galvanized housings.

### Curtain Controller

Adjustable latch out switches can be installed in multiple locations to energize and de-energize a variety of equipment.

Polyethylene pulley covers help stop the elements from entering through the area around the pulleys or sprockets.

Solid construction and rust resistant materials make the sprocket controller a reliable work-horse year after year.

The drive block assembly features a removable nylon insert that decreases friction for smooth travel on the drive screw.

An optional shaft-mounted potentiometer provides an accurate and immediate signal to allow precise control of air inlets or curtains based on temperature, rather than static pressure.

Isolated primary and secondary limit switches allow for back-up protection.

The Curtain Controller utilizes a threaded block and drive screw directly coupled to a direct drive gear motor.



### Auto Curtain 506, 507, 511

Cumberland's Auto Curtains operate by wenching a cable around a grooved drum controlled by a thermostat and timer. The model 506S version uses a sprocket and chain drive (instead of drum) turning a pipe that runs the length of the building. This sprocket version operates by pulling the curtain or door drop cords directly around the pipe eliminating the need for cable (operates same as 506).



### Hardware Kits

Hardware kits are available in heavy-duty galvanized steel construction featuring sealed needle bearing pulleys, sprockets, anti-wrap design and plated fasteners for ease of installation.



### Vent Doors

Cumberland's vent doors are used in poultry applications where transitional ventilation is required. All galvanized construction and simple to install, these doors are maintenance free and will provide optimum circulation for many years.

## Integrated Management Systems

Precise control of the temperature, airflow, bird weight, water consumption, feed inventory and lighting is a must for achieving top profits for growers. Combining all of these elements together into one management system that is cost affective and easy to operate is even more critical. For this reason, Cumberland introduces the Integra line of equipment. This fully integrated management system allows access of real-time data to ventilation, bird weight, water consumption, feed inventory and lighting for the entire site from a single location. Data can be accessed from on-site PC or remotely via modem.

### Expert 64 Controller

- Up to six (6) independent heater zones
- Up to eight (8) tunnel fan groups
- 5 minimum fan groups
- Up to two (2) cooling stages with ramping
- Tunnel curtain capability
- Vent doors capability
- Change ventilation with 5 different programs
- Up to 64 relay outputs with a second relay panel
- Up to 24 different times on the time clock where you can assign different relays to each clock
- Upload/Download stick: Program one control on a chip and easily upload all other controls on the site
- Mist ramping feature: As heat increases in the building so will your on time
- Light program: Ramping light program with variable module option (LD-7000)
- Day and night settings for minimum ventilation: Capability of having a different minimum ventilation timer for day and night
- Mortality: Capability of entering daily mortality into the controller. Full mortality history of the current flock available.

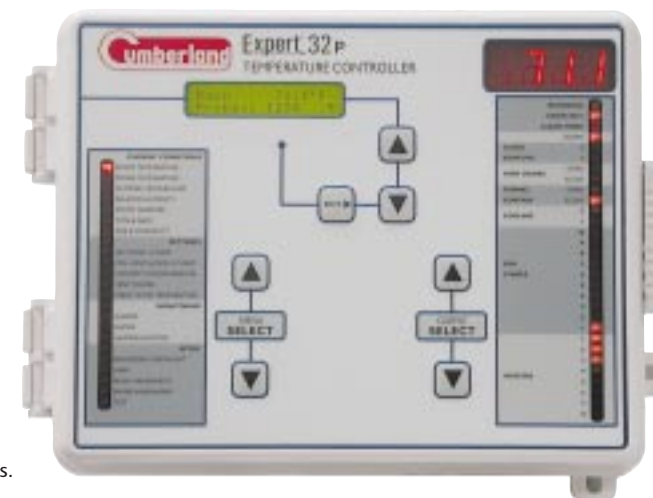
### Expert 32 Controller

- LARGE Display
- Up to two (2) time clock outputs
- Capable of operating vent doors
- Capable of operating tunnel curtains
- Up to two (2) cooling outputs
- Up to ten (10) fan outputs
- Up to eight (8) independent heating outputs
- Indicator lights show status of components
- Handles up to 6 temperature probes
- six (6) Selectable probe(s) for each heating zone
- Integrated static pressure sensor for vent doors
- Summer/winter settings based on outside temperatures
- Capability of entering daily mortality into the controller
- Full mortality history of the current flock available
- Collects water consumption data per day and flock
- Fully integrated system, no fighting between components
- Adjustable fan startup delay to allow vent door pre-opening
- Day and night settings for minimum ventilation and set point
- Adjustable empty zone set point that is independent from the main set point
- Configure a brooding and a growout setup according to "YOUR" specific needs. Select the clean mode program when the house is empty
- Alarm settings for temperature, static pressure, probes, watering, and more

### Relay Panel



- 32 Output Relay Panel
- On/Off/Auto Relay Switches
- Open/Off/Close Switches for Curtain Relays
- Clear Protective Door
- LED on lights
- Only 5 wires between the Controller and the Relay Panel



### Featherweight Bird Scale

#### Weighing System will:

- Weigh your birds 24 hours/day
- Give you accurate data
- Help you reduce mortality
- Help you reach your desired TARGET weight

#### Features:

- Featherweight can have up to 4 platforms - 2 in each house. Each platform has an independent reading. Any platform can be assigned to house 1 or house 2.
- Load cells are not on the floor, giving you a precise reading every time.
- Very easy to use and to start in simple steps.
- Easy push-button access to information.
- Gives important daily information:
  - Average weight
  - Number of weight
  - Standard deviation
  - Uniformity and daily gain
- PC Compatible

### Sundial Power Module

#### Control Light Intensity

- Light intensity can be different in zone 1 & 2 or identical. Two resistive loads of 3500W each.
- Manual Mode: Can be used as a stand alone unit.
- Auto Mode: Light intensity in the selected zone(s) is automatically adjusted by the main controller. Communication between both controls is established by using a 0-10V signal.
- Pre-programmed curve for incandescent lights.
- Compatible with Expert32ES, Expert64 & VLC-3



### Additional Accessories



#### Expert-SB

Back-up Safety Relay Box - up to eight (8) stages. Back-up Safety Relay Box does not include thermostats.



**WMC-Meter**  
Water Meter F/Water Monitoring Controls



#### SP-Module

Static Pressure Module



**Probe-Hum**  
Humidity Sensor Probe

### Computer Interface



Communicate with the program from a remote site using a modem and phone line and stay on top of all new developments wherever you are, whatever time it is.



#### Bridge-A

Interface w/ Agnet Software. Includes Combridge-1 Communication Card

#### Comlink-1

Communication Card f/Expert controllers w/ Bridge-A (1 per Expert controller)

#### Datalog-1

Data Log Card f/Bridge-A (1 per Bridge for Data Storage)

### Alarm Systems



#### AA-800

Agri Alert 800, Alarm System - Alarm for 8 Zones  
8 programmable Numbers  
Maximum Surge Protection



#### AA-2400

Agri Alert 2400, Alarm System - Expandable 8 to 24 Zones  
Alarm History  
Outdoor Temp. Compensation  
Dial-Out & Monitoring System



#### AA-9600

Agri Alert 9600, Alarm System - Expandable 8 to 24 Zones  
8-Zone Extension Box (up to 6)  
Agnel Windows Software  
Sophisticated Lighting Protect.

### Alarm Accessories

#### AA-24Ext

Agri Alert 2400, Extension Card - 8 Zone (Up to 2 per AA-2400)

#### AA-96Ext

Agri Alert 9600, Extension Card - 8 Zone (Up to 2 per AA-9600)

#### AA-Battery

Agri Alert Rechargeable Battery, 7A/H (AA-9600 and AA-2400)



#### AA-24Power

Agri Alert 800/2400, Power Pack



#### AA-96Power

Agri Alert 9600, Power Pack

## Evaporative Cooling Systems

Komfort Kooler systems utilize the natural cooling effect of evaporation to combat seasonal dips in production caused by heat stress. Cumberland offers two different styles of Komfort Koolers. The Closed Top System has been an industry favorite for many years. Made of ultraviolet stabilized PVC, this system offers great durability and longevity for the poultry environment. In addition, a new and rapidly growing Open Top System is available. This design offers the grower easy access to manage and maintain their evaporative cooling system and utilizes a combination of PVC and the highest quality of stainless steel for years of dependable operation. Komfort Kooler Systems will adapt to new and existing poultry facilities.



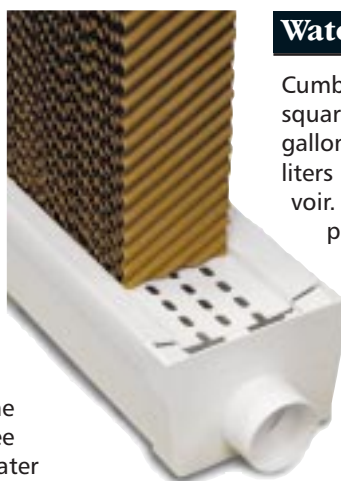
### Closed Top Design

The Closed Top system is extruded from ultraviolet stabilized PVC for durability and ease of installation. The hinge-open cover and thumbscrews allows accessibility to spray bar and holds pads firmly in place. The spray bar bracket and water deflector insure pads are uniformly wet.



### Open Top Design

Made of high quality stainless steel, this system will give years of dependable operation under the harshest conditions. The Open Top design allows you to see the water jets and easily check water pressure. It also offers access to the spray bar for cleaning. Pre-punched and heavy duty stainless steel components help simplify installation.



### Water Troughs

Cumberland's pre-formed square trough serves as a 3 gallon per lineal foot (44.8 liters per meter) water reservoir. Constructed of corrosion proof, ultra-violet stabilized PVC components, the trough allows unevaporated water to be recirculated back to the holding tank. A perforated tray snaps to the trough to hold pads firmly in place. Injection molded end caps and couplers speed installation.

### Features

- A roto-molded holding tank offers increased water storage capacity.
- Submersible pump keeps water levels consistent for efficient water delivery.
- Automatic float valve for matching water supply with water demand.
- Easy removal of pads for cleaning.
- Wide selection of cooling pads to choose from.

Trough support brackets for suspending the system on the sidewall, and Center Feed Kits for longer cooling systems are optional.



Open Top System



Closed Top System

