

# M300-SC

## Single Conveyor

### 3,200 lbs Carrying Capacity

The M300-SC is a powered conveyor deck vehicle with high value features for today's demanding material handling solutions.

#### FEATURES

**Conveyor Deck:** 3,200 lbs (1,450 kg) load capacity. Allows pallet movement to/from conveyors, with a transfer time in as little as 10 seconds.

**Safe:** The M300-SC offers a 16-pattern laser to detect obstructions and personnel.

**Efficient:** The M300-SC operates on battery power, while also automatically charging, yielding up to 24/7 fully automatic operation.

**Integration:** Can integrate with Plant Control Systems via Wi-Fi communications and System Automation Manager™ (SAM) software providing traffic control.

**Affordable:** Many applications can demonstrate Return On Investment in three months or less.

**Simple:** CartTools™ and AGV Tools software provide a user-friendly interface to implement/make changes.



#### NAVIGATION AND GUIDANCE OPTIONS

##### Natural Feature Navigation (NFN):

The AGV determines its location using LIDAR to identify structures in the environment and match their locations to a virtual map of the facility.

**Laser Navigation:** Field of reflective targets seen by on-vehicle sensors and used by vehicle computer to determine location.

**Magnetic Tape/Bar Guidance:** Magnetic path is followed using sensors.

#### NAVIGATION ENHANCEMENTS

**Enhanced Navigation:** Additional sensors can be added to augment the vehicle's navigation technology.

**Co-Navigation Technology:** Multiple navigation packages may be used on a vehicle in challenging environments.

#### FEATURES AND OPTIONS

- Communications WiFi 5
- Automatic Shut Off
- Sleep/Auto-wake
- Automatic Charging
- Lithium Battery Pack
- Wheel Brushes
- Side Swipe Optics
- Warning Light/Horn
- Cab Side Covers

## Smart Handling AGV Solutions

### General Specifications

Weight / with batteries	2,360 lbs (1070 kg) / 2,600 lbs (1180 kg)
Dimensions	W: 57" (1450 mm) L: 91" (2310 mm) H: 51" (1300 mm)
Maximum Load	3,200 lbs (1450 kg) Minimum 40" X 40" distributed load
Maximum Pallet	48" X 48"
Roller Conveyor	2.5" dia., 11 GA wall 3.25" on center
Effective Widths	41", 43", 46", 49" - width of pallet in direction of transfer
Top of Roll	18" to 32" in one inch increments
Transfer Speed	45 to 10 FPM, soft start
Load Sensing	Yes, using cross conveyor optic
Transfer	Left and Right side
Transfer Interface	Optical with emitter and receiver pair on each side
Safety – Front	ANSI B56.5 compliant bumper
Speed – Laser Bumper	15 to 240 FPM, (240 FPM with laser guidance) 6 speeds, 1 FPM increments
Battery Options	AGM 210 AH 24VDC battery pack AGM/TPPL 204 AH 24VDC battery pack Lithium 180AH 24 VDC battery pack
Automatic Charge	80 amp charge rate (if equipped)
Fast Automatic Charge	140 amp charge rate (if equipped)
Manual Charge	Up to 25 amp charge rate

### Environment

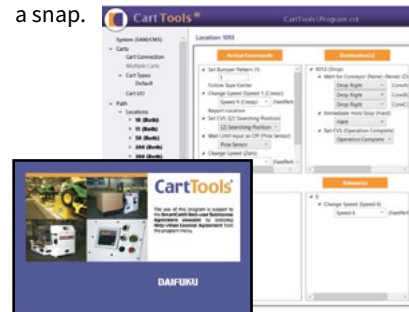
Environment – Atmosphere	0 to 40° C, 25% to 95% non-condensing humidity
Dust/Water-proof	No
Floor Specs – Edges/Debris	.25" abrupt elevation change maximum, smoothed
Expansion Joints	.25" maximum
Grade Rating	0%
Flatness	1% and .25" variation in 5' or less
Friction	0.6 coefficient of friction between wheels and floor, minimum
Floor Conductivity	Static dissipative, less than $3.5 \times 10^7 \Omega$
Radio Communication	Wi-Fi 5, plus security encryption (if equipped)

### Detailed Specifications

Drive Direction – Automatic	Forward and Reverse (if equipped)
Duty Cycle	95% @ Maximum Load Rating
Drive Unit – Wheel	Vulkolan 210 mm dia. x 70 mm wide
Drive Type	Gear driven steerable turntable
Motor	1000 watts 24VAC
Steering	24 VDC motor
Brake	10Nm, spring actuated (fail-safe)
Caster Wheels	Polyurethane on cast iron 6" diameter x 3" wide
Navigation	Daifuku AGV – Natural Feature and Laser
Steer Angle Sensor Encoder	Yes
Steering /Stopping Accuracy	+/- .5"
Location	Virtual
Guidance	SmartCart AGV - Magnetic Tape/Bar
Steer Angle Sensor	Analog 10 turn potentiometer
Steering Accuracy	+/- 1" from physical path
Guide Loss Error	Error generated within 6" of path loss
Hunt for Path	Not offered, violates ANSI B56.5
Sensor	16 millisecond data rate, 50 updates per second
SmartSteer Accuracy	+/- 3" @ 10'
Stopping Accuracy	.5" proximity sensor, 1.5" transponder reader @ 30 FPM
Location Method	Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions
Program Capacity	5000 program steps
HMI Display	5.7" color touch screen – errors & destinations
Manual Movement	Pendant – via pendant plug receptacle, Fork Pockets
Minimum Path Radius	24" – 90° turn, 60" – 180° turn
Drive Stalled Detection	Yes
Distance Initiated Functions	Yes – in 1" increments
Obstacle Detection	Front and rear programmable up to 2.8 meters
Emergency Stop	5 – front, top left/right, rear left/right
Wiring	Per NEC ampacity guidelines
Side Swipe Optics	Both sides full length of vehicle (if equipped)

### CARTTOOLS SOFTWARE

Simple, standardized toolbox of commands that make configuration a snap.



Pendant Control – When manual movement is required, it's as simple as driving the AGV where it needs to go.



SmartSteer – CartTools commanding of the AGV to intentionally leave the magnetic path. It allows maneuvers like pivot turns and ignoring floor problems when in full automatic operation