

GO PDF Loggers

Cargo monitoring solutions



COPELAND

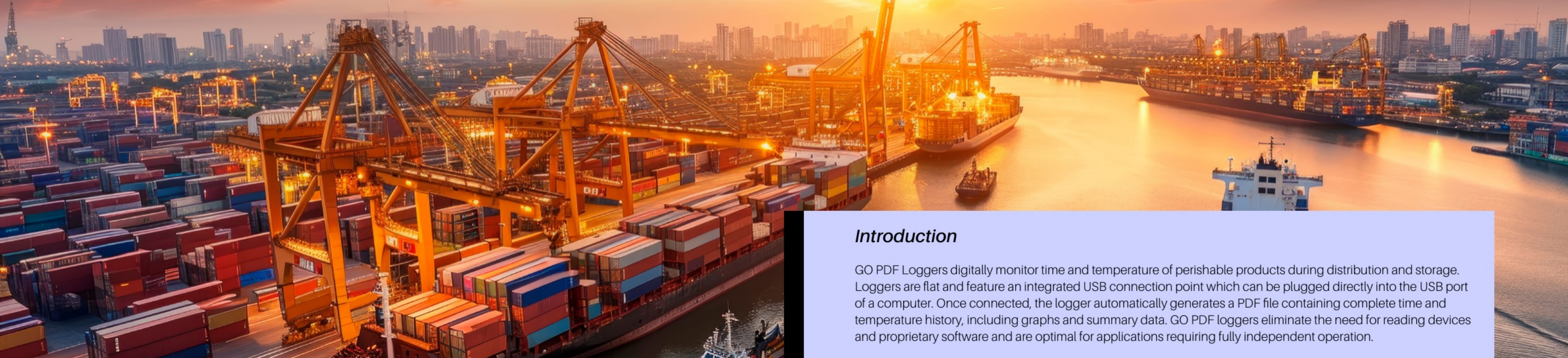


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Introduction

GO PDF Loggers digitally monitor time and temperature of perishable products during distribution and storage. Loggers are flat and feature an integrated USB connection point which can be plugged directly into the USB port of a computer. Once connected, the logger automatically generates a PDF file containing complete time and temperature history, including graphs and summary data. GO PDF loggers eliminate the need for reading devices and proprietary software and are optimal for applications requiring fully independent operation.

GO PDF Loggers are suitable for the general monitoring of most perishable food and industrial products. Loggers feature a temperature accuracy of .0065°C over the operating range of -25°C to 60°C. General use loggers record data up to 90 days and alert if pre-programmed temperature excursions occur. In addition, GO PDF Loggers can also be optimized for monitoring vaccines, pharmaceuticals, biologics and other temperature sensitive products. They feature a .0065°C accuracy over the operating range of -20°C to 60°C, record data for up to 55 days and can be programmed to alert if pre-programmed temperature excursions occur. Along with PDF file generation, loggers include an embedded NIST certificate of accuracy and logger PDF that contains an embedded CSV file which displays time and temperature in five minute increments.

Understanding the Devices

1. Duration

2. Logger unique identifier & barcode

3. Preprogrammed temp ranges & activate by date

4. Part number

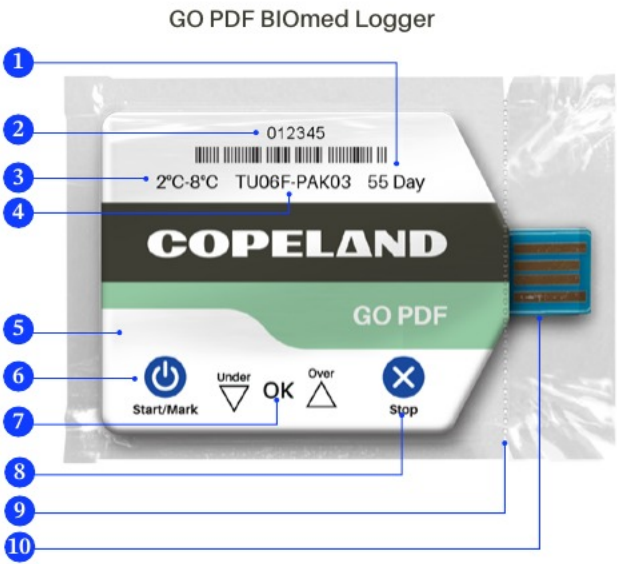
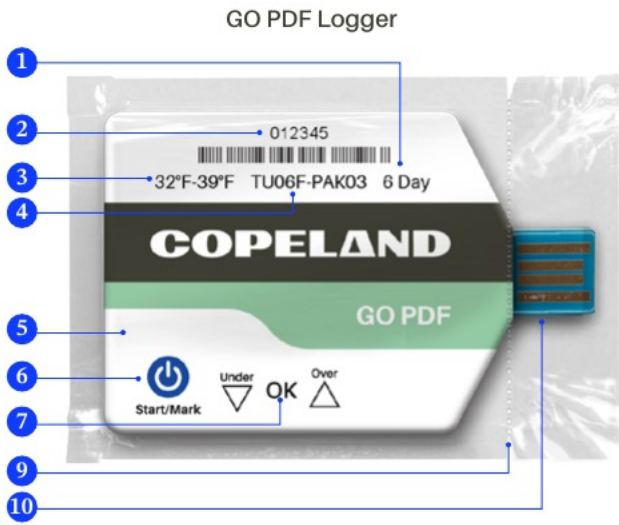
5. USB LED
6. Start/Mark button

7. LEDs/visual indicators

8. Stop button

9. Tear score

10. USB plug





Definitions

1. **Duration** - Indicates how many days, under normal conditions, the logger will collect data after it is activated.
2. **Logger Unique Identifier and Barcode** – each logger has a unique alpha/numeric identifier which differentiates it from other Copeland Logger. When information is downloaded from the logger, this unique identifier will appear at the top of the PDF. The unique identifier is automatically used as the name of the logger data file.
3. **Preprogrammed Temperature Alert Range** – signifies the logger’s upper and lower temperature parameters. LED Alerts will flash if these ranges are exceeded according to the logger’s programming. Number of days is documented under duration.
4. **Product Part Number**– product part number is a unique number that customers use to reorder additional loggers with the same profile.
5. **USB LED** – Blue LED will turn solid blue when the GO PDF Logger is successfully connected to a USB interface.
6. **Start/Mark Button** – press and hold the Start/Mark button a minimum of 2 seconds to activate. Once label is started, LEDs will flash in a sequence to indicate successful activation. Labels should be activated when the product to be monitored is ready for shipment. The same button can be used to “mark” significant events. Press and hold the Start/Mark button a minimum of 1 second to mark an event. LEDs will flash to signify a mark. A marked event is indicated on the PDF print out.
7. **LEDs/Visual Indicators** – give a quick visual indication of whether a product remained within temperature parameters. For models, without preprogrammed temperature alerts, only the green LED is featured and indicates if the logger is on and actively monitoring time and temperature.
8. **Stop Button** – press and hold button 3 seconds to stop time and temperature recording. Logger cannot be restarted once the stop button has been pressed. Note that only GO PDF BIOMed Loggers have stop functionality by default.
9. **Tear Score** – location to tear plastic pouch to expose USB plug to enable insertion into computer.
10. **USB Plug** – plug into USB port on computer to download data in PDF format.

Note that each logger is sealed in a plastic pouch. Prior to reading, Copeland GO PDF Loggers can be used in almost any environment, IP67 rating 30 minutes in 2 meters of water. DO NOT COMPROMISE INTEGRITY OF PLASTIC POUCH UNTIL READY TO DOWNLOAD DATA.

Operating range

Specified operating range for GO PDF Loggers is -25°C to 60°C (-13°F to 140°F).

Supported systems

- Vista, Windows 7 (both 32bit and 64bit), Windows 8 Pro, and Windows 10 operating systems
- USB 2.0 port required for data transmission
- Adobe Acrobat 9 or later, Adobe Reader 9 or later, or another application providing PostScript Level 2 or better support

Activating GO PDF Loggers

To activate the logger, press and hold the “Start/Mark” button located in the lower left-hand corner of the label for a minimum of 2 seconds. The logger LEDs will flash to indicate successful activation in a rotating sequence towards the “Start/Mark” button. The rotation sequence will occur 5 times. Using the glue dot on the back of the logger, apply logger to the provided “Find It” sign and attach. Alternatively, apply logger directly to product packaging. LEDs will flash every four seconds to indicate active monitoring..

Marking events

After the logger has been started, users can indicate significant events, such as product changing hands, by pressing the “Start/Mark” button. To mark an event, press and hold down the “Start/Mark” button for a minimum of 1 second. A green LED will flash in slow flashes, increasing in speed, to indicate an event has been successfully marked. Up to 5 marked events will display on the PDF file. Note that a mark will not appear on the graph if the “Start/Mark” button is pressed during the start delay period. Marked events will not appear if the “Start/Mark” button is pressed while plugged into the USB port.

Stopping (GO PDF BIOMed Loggers only)

GO PDF BIOMed Loggers by default include a “Stop” button. To stop active time and temperature recording, press and hold the “Stop” button located in the lower right corner of the logger for 3 seconds. LEDs will flash in a rotating sequence towards the stop button 7 times, followed by all LEDs being illuminated then extinguished to indicate a successful stop. A “marked” event will appear in the PDF at the stopped time. Logger cannot be restarted once the “Stop” button has been pressed. LEDs will double flash again after 4 seconds after a successful stop. LEDs will “freeze” to reflect the loggers alert status at the time it was stopped. If the logger is not stopped the LEDs will continue to reflect the current alert status until the memory is full. The memory full point is then treated as a stop event. LEDs will “freeze” to reflect the loggers status at the time of the memory full event. GO PDF Loggers by default do not include a stop button option. LEDs will continue to reflect the current alert status until the loggers battery runs out of power.

Interpreting LED alert indicators

For logger models with LED alert indicators, LEDs flash every four seconds to give a quick visual indication of whether a product remained within temperature parameters. Flashing “OK” indicates the logger is active and preprogrammed temperature ranges have not been breached; flashing amber “Over/Under” symbols indicate the product drifted outside of acceptable range for the preset amount of time and the data should be examined further via a data download. Upper and lower temperature parameters are pre-programmed by Copeland. By default, each logger has a 30-minute delay once temperature is out of range before the visual indicator will be triggered. There is also an initial 30-minute start delay or “cool down” period to allow loggers to get down to product temperature and eliminate false alarms while equilibrium occurs. Start delay periods do not appear in the graph and are not considered in calculating trip temperature statistics. Note that these default parameters can be customized. The Copeland GO PDF Logger models do not indicate alerts. In these models, a flashing green LED indicates the logger is on and actively monitoring.

Downloading GO PDF Logger data

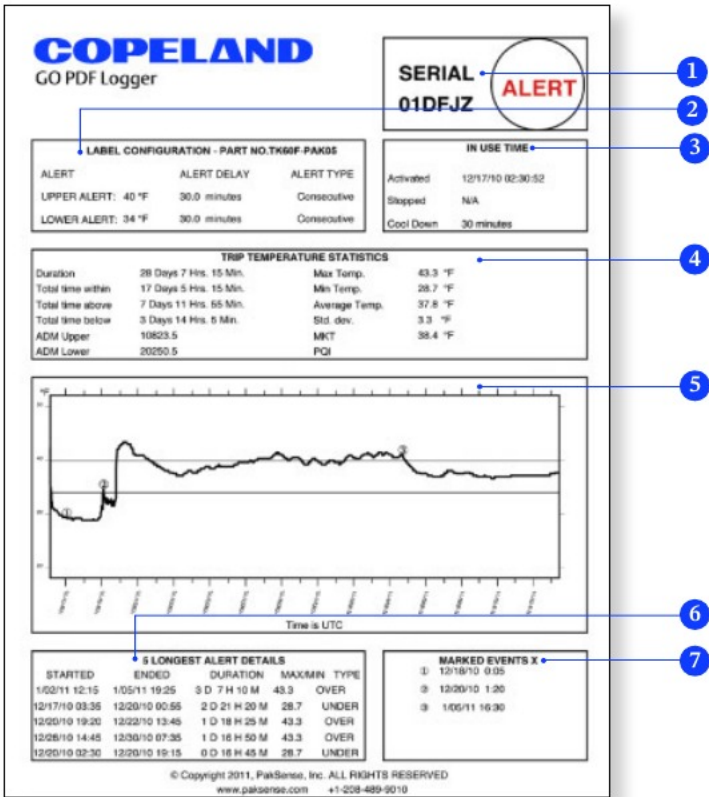
1. Allow data to accumulate in logger.
2. Tear plastic logger pouch at score to reveal USB insertion point. Make sure USB connection point is clear of plastic but keep the remaining plastic pouch on logger.
3. Insert the USB plug into USB port on a computer. Confirm blue USB LED is a solid blue to indicate successful connection. If no blue LED light illuminates, flip the logger over and reinsert. Many computers have their USB port reversed. Solid blue LED will confirm connectivity.
4. Wait up to 10 seconds. An option to open a folder and view files will appear. Open the folder.
5. A PDF file will appear in the folder. 2 PDF files appear for BIO. Note that users must have installed Adobe Acrobat 9 or later, Adobe Reader 9 or later, or another application providing PostScript Level 2 or better support. If Adobe
6. Do not unplug the logger. Open the PDF file. At this point you may either print the file or save it to your computer. Note that the GO PDF Logger must be actively plugged into the downloading computer to perform print or local save functions.
7. When finished, safely eject the GO PDF Logger by selecting the "safely eject USB device" option in the services tray on the lower right of your computer screen.

A NIST Certificate is also generated for GO PDF BIOmed Loggers



Understanding the PDF data file

1. **Logger unique identifier and immediate disposition data area** – each logger is identified by a unique alpha/ numeric identifier. This identifier is displayed at the top right of the PDF file. This area also provides "at a glance" product disposition information. "Alert" indicates a temperature excursion has occurred. A blank circle indicates temperature stayed within programmed ranges. Note that the "at a glance" area will remain blank for GO PDF data logger models not programmed with temperature alert ranges.
2. **Logger configuration area** – this area displays the logger part number and details on how the logger was programmed. Logger not programmed with temperature ranges – i.e. data loggers – will display "N/A" in the Upper and Lower alert areas.
3. **In use time area** – indicates when the logger was activated and stopped. It also indicates if a "Start Delay" period was programmed into the logger. Start Delay periods allow logger to get down to product temperature and eliminate false alarms while equilibrium occurs. Logger programmed with stop functionality will display "Stopped" time.



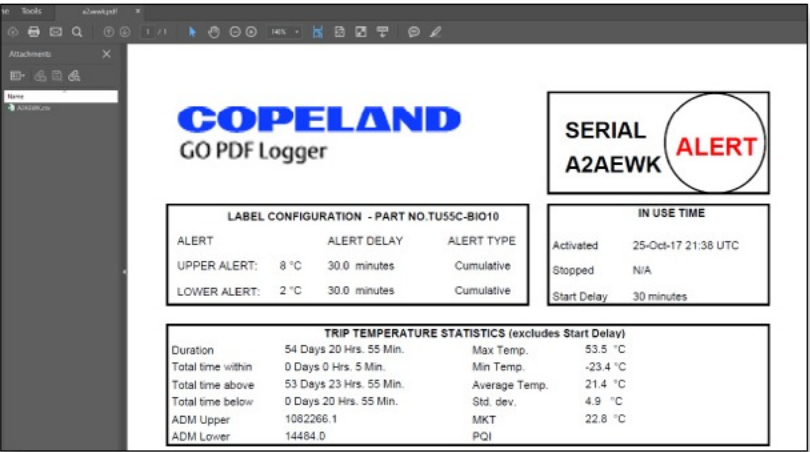
PDF example.

4. **Trip temperature statistics** – displays temperature results from the logger. Note that the start delay period is not considered in the calculation of statistics.
 - A. Duration** – how long the logger monitored data, not including the start delay period.
 - B. Total time within/above/below** – if alerts were programmed, indicates how long the logger was within, above, and below temperature alert ranges.
 - C. ADM upper/ADM lower** – if alerts were programmed, Alert Degree Minutes is determined by multiplying the number of degrees out of range by the number of minutes out of range based on the 5-minute averages collected.
 - D. Max temp/min temp** – indicates maximum temperature attained and minimum temperature attained.
 - E. Average temp** – a calculation of the average temperature experienced during the active life of the label.
 - F. Std. Dev. (standard deviation)** – a measurement of how tightly grouped the data is around the average value.
 - G. MKT** – Mean Kinetic Temperature is a simplified way of expressing the overall effect of temperature fluctuations during storage or transit of perishable goods. See the FAQ section of this manual for more information on how the GO PDF Logger calculates MKT
5. **Graph area** – a graphical representation of time and temperature during active recording. Upper and lower number. Note that the start delay period is not displayed on the graph. Also located on the bottom right of the graph is a time interval legend.
6. **Five longest alert details, or notes box** – displays the five longest alert events, when they started, ended, the duration, and maximum/minimum temperatures attained. The longest alert period is listed first. For GO PDF Loggers not programmed with temperature ranges – i.e. data loggers – this area turns into a "Notes" box. For GO PDF Loggers programmed with cumulative alerts where consecutive alerts do not apply, this area turns into a notes box that can be used as a signature area.
7. **Marked events** – provides details on when the "Mark" button was pressed. Up to 5 marked events are displayed. The marked event corresponds with a number indicator on the graph. If the "Mark" button is pressed in rapid succession, one date stamp will appear with the number of marked events indicated in parentheses.

Embedded CSV file

Located on the left side of the PDF is a "paperclip" icon. Clicking on the paperclip icon enables the user to view time and temperature data in parsed data format via a CSV file. Time and temperature is listed in 5-minute increments.

Time and temperature data collected during the "Start Delay" period is displayed in the CSV file. If the "Mark" button is pressed, the marked event will appear next to the time and temperature stamp. Unlimited marked events will be displayed in the CSV file. If the "Stop" button is pressed, this point will also be displayed in the CSV file. Alert limits, if any, are also indicated in the CSV file. Data in the embedded CSV file cannot be changed and the CSV file cannot be separated from the PDF file. The CSV file may be copied and saved to another location per the user's Standard Operating Procedures (SOPs). Once saved elsewhere, the CSV file may be opened and manipulated using programs such as Microsoft Excel in accordance with company SOPs.



Interpreting time

GO PDF Loggers display time in Coordinated Universal Time (UTC). UTC is the primary time standard by which the world regulates clocks and time. Computer servers, online services, and other entities that rely on having a universally accepted time use UTC for that purpose.

To convert UTC to your local (military) time, add or subtract hours from UTC depending on your time zone. Be sure to account for daylight savings, if this applies. The UTC value with corresponding time zone is provided in the table to the right.

How to interpret time

- 1. Take the UTC time from the GO PDF printout.
- 2. Determine your GMT variable. Account for daylight saving time if this applies.
- 3. Add or subtract this GMT variable from your UTC time. This will provide your local time in military time.
- 4. Convert this from military time to your local time.

Example: If the GO PDF printout indicates 14:21 UTC and you are in New York City during Eastern Standard Time, subtract 5 hours and convert the time from military time. This will translate into 9:21 a.m. EST.

Included on page 12 on this user guide is a chart that will aid you in converting UTC to your local time.

Value	Time Zone
+13	(GMT+13:00) Nuku'alofa
+12	(GMT+12:00) Auckland, Wellington, Fiji, Kamchatka, Marshall Is.
+11	(GMT+11:00) Magadan, Solomon Is., New Caledonia
+10	(GMT+10:00) Brisbane, Canberra, Melbourne, Sydney, Hobart, Vladivostok, Guam, Port Moersby
+09	(GMT+09:00) Yakutsk, Osaka, Sapporo, Tokyo, Seoul, Adelaide, Darwin
+08	(GMT+08:00) Perth, Taipei, Kuala Lumpur, Singapore, Irkutsk, Ulaan Bataar, Beijing, Chongqing, Hong Kong, Urumqi
407	(GMT+07:00) Krasnoyarsk, Bangkok, Hanoi, Jakarta
+06	(GMT+06:00) Astana, Dhaka, Yangon (Rangoon), Almaty, Novosibirsk
+05	(GMT+05:00) Ekaterinburg, Chennai, Kolkata, Mumbai, New Delhi, Kathmandu, Islamabad, Karachi, Sri Jayawardenepura, Tashkent
+04	(GMT+04:30) Kabul, Abu Dhabi, Muscat, Yerevan, Baku, Caucasus Standard Time
+03	(GMT+03:00) Moscow, St. Petersburg, Volgograd, Tehran, Tbilisi, Nairobi, Baghdad, Kuwait, Riyadh
+02	(GMT+02:00) Minsk, Cairo, Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius, Athens, Bucharest, Istanbul, Jerusalem, Amman, Beirut, Harare, Pretoria
+01	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris, West Central Africa, Sarajevo, Skopje, Warsaw, Zagreb, Belgrade, Bratislava, Budapest, Ljubljana, Prague
0	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London, Monrovia, Reykjavik, Casablanca
-01	(GMT-01:00) Azores, Cape Verde Is.
-02	(GMT-02:00) Mid-Atlantic
-03	(GMT-03:00) Buenos Aires, Brasilia, Greenland, Montevideo, Newfoundland, Georgetown
-04	(GMT-04:00) Atlantic Time (Canada), Manaus, Santiago, La Paz, Caracas
-05	(GMT-05:00) Eastern Time (US & Canada), Bogota, Lima, Quito, Rio Branco
-06	(GMT-06:00) Central Time (US & Canada), Guadalajara, Mexico City, Monterrey, Central America
-07	(GMT-07:00) Mountain Time (US & Canada), Arizona, Chihuahua, La Paz, Mazatlan
-08	(GMT-08:00) Pacific Time (US & Canada)
-09	(GMT-09:00) Alaska
-10	(GMT-10:00) Hawaii
-11	(GMT-11:00) Midway Island, Samoa
-12	(GMT-12:00) International Date Line West

UTC chart



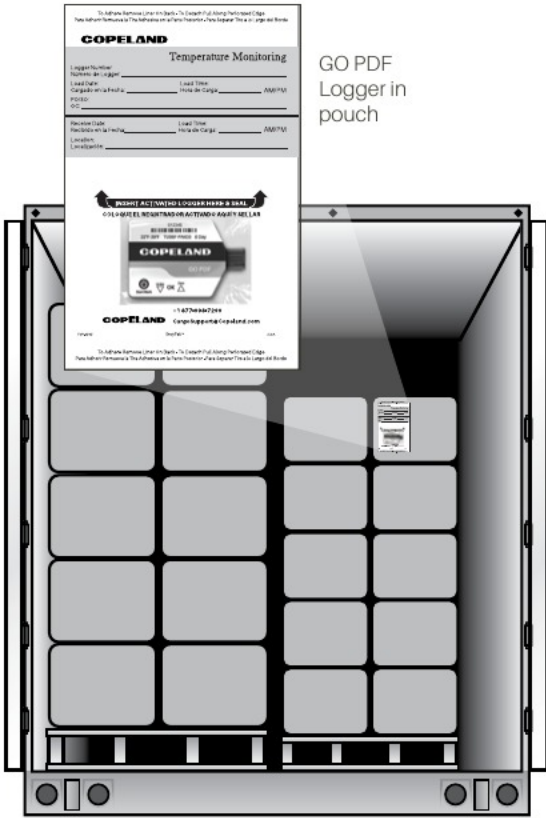
Logger placement scenarios

The form factor of the logger promotes its use in a variety of scenarios including at the pallet, carton and product level.

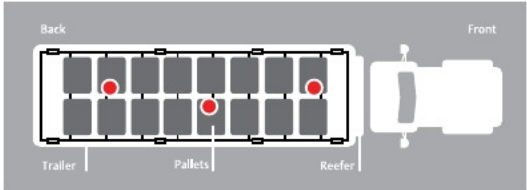
Pallet level - Many customers apply loggers to the side of a pallet. Copeland provides signage and clear plastic pouching to facilitate locating labels on pallets at the receiving end as depicted in the photo to the right. Many customers place several GO PDF Loggers on different pallets within a load to perform temperature mapping. This promotes broader sampling and provides more detailed information on the temperature fluctuations experienced within a container.

Carton level - Many customers with high-value product where temperature specifications are critical may choose to use Copeland GO PDF Loggers on each individual carton inside a master case.

Product level - Loggers are sealed in a plastic pouch and take surface reads of the object to which they are attached. They can be placed in or laid directly on top of product for highly accurate temperature reads. In order to facilitate finding Copeland GO PDF temperature monitoring loggers, it is recommended that placement of loggers be clearly flagged on the outside of packaging. Copeland provides customers with "Find It" signs upon request. Certain sign models can also be used as return mailers.



Pouch placement on a pallet



Pouch placement within shipping container

GO GreenSense program

GO PDF Loggers can be easily recycled through the GO GreenSense program. GO GreenSense is a recycling program that facilitates the return of Copeland temperature monitoring loggers for proper battery and component recycling. Through the GO GreenSense program, Copeland provides customers with eco-friendly return boxes and pre-paid postage return labels free of charge. Unlike bulky traditional temperature monitoring devices, customers can fit hundreds of temperature loggers in the provided medium-sized box. GO GreenSense takes the hassle out of returning loggers for recycling. For more

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Troubleshooting and FAQ's

- Q:** When I manually calculate the time the label actively recorded data by looking at the start and stop times in the "In Use Time" section, it does not match the duration time listed in the Trip Temperature Statistics" section. It is off by 30 minutes.
- A:** Remember the start delay period is not included when calculating trip temperature statistics. By default, the start delay period is 30 minutes.
- Q:** I have inserted my GO PDF Logger into the USB port, but the file did not generate.
- A:** Be patient. It may take up to 10 seconds for the PDF to generate.
- Q:** I waited 10 seconds, but the PDF still did not generate. Try the following:
- A:** 1) Check to see if the blue USB LED light is illuminated. The Blue light will indicate an active USB connection. If the Blue USB light is not on, remove the GO PDF Logger. Flip it over and insert it again. Many computers have their USB ports flipped.
- 2) Go to "Control Panel" in Windows. Select "Hardware and Sound." Select "AutoPlay." Check to make sure "Use AutoPlay for all media and devices" is checked.
- 3) Some anti-virus programs prevent the GO PDF file from automatically generating. In most cases, this may be resolved by temporarily disabling the scan of removable media. Contact Copeland technical support for additional information.
- Q:** The blue USB LED is illuminated but the PDF file is still not generating.
- A:** Make sure there is no plastic covering on the USB plug. Plastic pouch remnants can interfere with USB connectivity.
- Q:** What happens if I push the Start/Mark or Stop buttons while the logger is plugged in?
- A:** Nothing, buttons are not active while plugged into the USB port.
- Q:** There is an unexplained temperature spike in the graph of the PDF print out. What caused this?
- A:** The GO PDF Logger was removed from the USB port before the downloading process was complete. Reinsert the label and wait for the downloading process to complete before opening the PDF file.
- Q:** The PDF generated, but there is no data in the printout.
- A:** Remember to let the start delay period expire and wait at least 30 minutes before attempting to download data. If a download is attempted within the start delay period, there will be no data in the printout.



- Q:** Can I copy files to the GO PDF Logger and use it as a thumb drive?
- A:** It is not possible to write a file to the GO PDF Logger. The logger cannot be used to transfer files and cannot transfer a virus or other "malware." In testing this, users may find that they can get a file icon to show up in the GO PDF file folder. Note that this is a "ghost" image and that the file has not truly transferred. Upon label ejection and reinsertion, this "ghost" image will disappear.
- Q:** I have multiple USB ports on my computer. What happens if I plug an GO PDF Logger into each one?
- A:** An individual file will independently open for each GO PDF Logger.
- Q:** Are GO PDF data files 21 CFR 11 compliant?
- A:** Data in both the PDF file and the embedded CSV file (if generated) cannot be altered. As an uneditable PDF, these files on the logger are 21 CFR 11 compliant. Copying these files from the GO PDF Logger should be done according to each individual company's SOPs to comply with 21 CFR 11 requirements.
- Q:** Can I zoom in on a particular area of the graph?
- A:** The easiest way to do this is to use the zoom feature provided by Adobe Reader.

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- A:** Yes, this data can be viewed by clicking the "paperclip" icon on the PDF generated by the GO PDF BIOMed Logger. GO PDF Generic Loggers users can view this data by downloading data via the Copeland Standard Edition Software. Please contact Copeland for more details.

Mean kinetic temperature methodology

$K_i = C_i + 273.15$ where $i = 1, 2, \dots, n$ and n is the number of soft data points in the label

$$P_i = e^{-9982.68/K_i}$$

$$PointSum = \sum_{i=1}^n P_i$$

$$MKTK = \frac{-9982.68/K_i}{\ln\left(\frac{PointSum}{n}\right)}$$

$$MKTC = MKTK - 273.15$$

$$\frac{-9982.68}{\ln\left(\frac{\sum_{i=1}^n e^{C_i + 273.15}}{n}\right)} - 273.15$$

where C_i is the recorded temperature in Celsius, n is the number of soft data points, $\ln$ represents the natural logarithm, and e is the natural logarithm base.

$$MKTF = (MKTC \times 1.8) + 32$$

Regulatory approvals

This device complies with Part 15B of the FCC Rules. Operation is subject to the following two conditions:

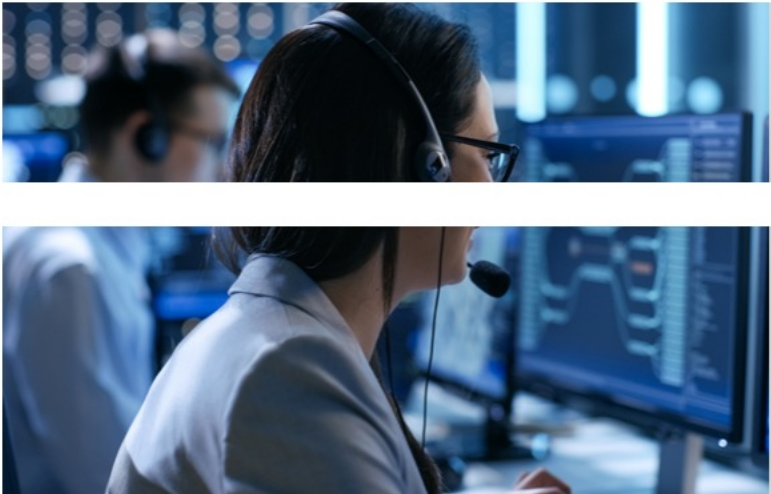
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Lithium battery exception

Batteries utilized in GO PDF Loggers are under the weight limit for lithium batteries on airplanes and qualify for an exemption under special provision 188 of §173.185(f) and §173.185 (g) (1) of the Hazardous Materials Regulations (HMR: 49 CFR Sections 171-180).

Additional Regulatory information: Copeland GO PDF Loggers are CE, RCM, China RoHS, and WEEE compliant.

Innovation, Science and Economic Development Canada ICES-003 Compliance Label: CAN ICES-3 (A)/NMB-3(A)



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North American UTC conversion chart

UTC	PS	PDT	MST	MDT	CST	CDT	EST	EDT
0:00	4 p.m.	5 p.m.	5 p.m.	6 p.m.	6 p.m.	7 p.m.	7 p.m.	8 p.m.
1:00	5 p.m.	6 p.m.	6 p.m.	7 p.m.	7 p.m.	8 p.m.	8 p.m.	9 p.m.
2:00	6 p.m.	7 p.m.	7 p.m.	8 p.m.	8 p.m.	9 p.m.	9 p.m.	10 p.m.
3:00	7 p.m.	8 p.m.	8 p.m.	9 p.m.	9 p.m.	10 p.m.	10 p.m.	11 p.m.
4:00	8 p.m.	9 p.m.	9 p.m.	10 p.m.	10 p.m.	11 p.m.	11 p.m.	Midnight
5:00	9 p.m.	10 p.m.	10 p.m.	11 p.m.	11 p.m.	Midnight	Midnight	1 a.m.
6:00	10 p.m.	11 p.m.	11 p.m.	Midnight	Midnight	1 a.m.	1 a.m.	2 a.m.
7:00	11 p.m.	Midnight	Midnight	1 a.m.	1 a.m.	2 a.m.	2 a.m.	3 a.m.
8:00	Midnight	1 a.m.	1 a.m.	2 a.m.	2 a.m.	3 a.m.	3 a.m.	4 a.m.
9:00	1 a.m.	2 a.m.	2 a.m.	3 a.m.	3 a.m.	4 a.m.	4 a.m.	5 a.m.
10:00	2 a.m.	3 a.m.	3 a.m.	4 a.m.	4 a.m.	5 a.m.	5 a.m.	6 a.m.
11:00	3 a.m.	4 a.m.	4 a.m.	5 a.m.	5 a.m.	6 a.m.	6 a.m.	7 a.m.
12:00	4 a.m.	5 a.m.	5 a.m.	6 a.m.	6 a.m.	7 a.m.	7 a.m.	8 a.m.
13:00	5 a.m.	6 a.m.	6 a.m.	7 a.m.	7 a.m.	8 a.m.	8 a.m.	9 a.m.
14:00	6 a.m.	7 a.m.	7 a.m.	8 a.m.	8 a.m.	9 a.m.	9 a.m.	10 a.m.
15:00	7 a.m.	8 a.m.	8 a.m.	9 a.m.	9 a.m.	10 a.m.	10 a.m.	11 a.m.
16:00	8 a.m.	9 a.m.	9 a.m.	10 a.m.	10 a.m.	11 a.m.	11 a.m.	Noon
17:00	9 a.m.	10 a.m.	10 a.m.	11 a.m.	11 a.m.	Noon	Noon	1 p.m.
18:00	10 a.m.	11 a.m.	11 a.m.	Noon	Noon	1 p.m.	1 p.m.	2 p.m.
19:00	11 a.m.	Noon	Noon	1 p.m.	1 p.m.	2 p.m.	2 p.m.	3 p.m.
20:00	Noon	1 p.m.	1 p.m.	2 p.m.	2 p.m.	3 p.m.	3 p.m.	4 p.m.
21:00	1 p.m.	2 p.m.	2 p.m.	3 p.m.	3 p.m.	4 p.m.	4 p.m.	5 p.m.
22:00	2 p.m.	3 p.m.	3 p.m.	4 p.m.	4 p.m.	5 p.m.	5 p.m.	6 p.m.
23:00	3 p.m.	4 p.m.	4 p.m.	5 p.m.	5 p.m.	6 p.m.	6 p.m.	7 p.m.

World UTC conversion chart

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