

# PANDIA II - GOTO HYBRID PLANETARIUM®

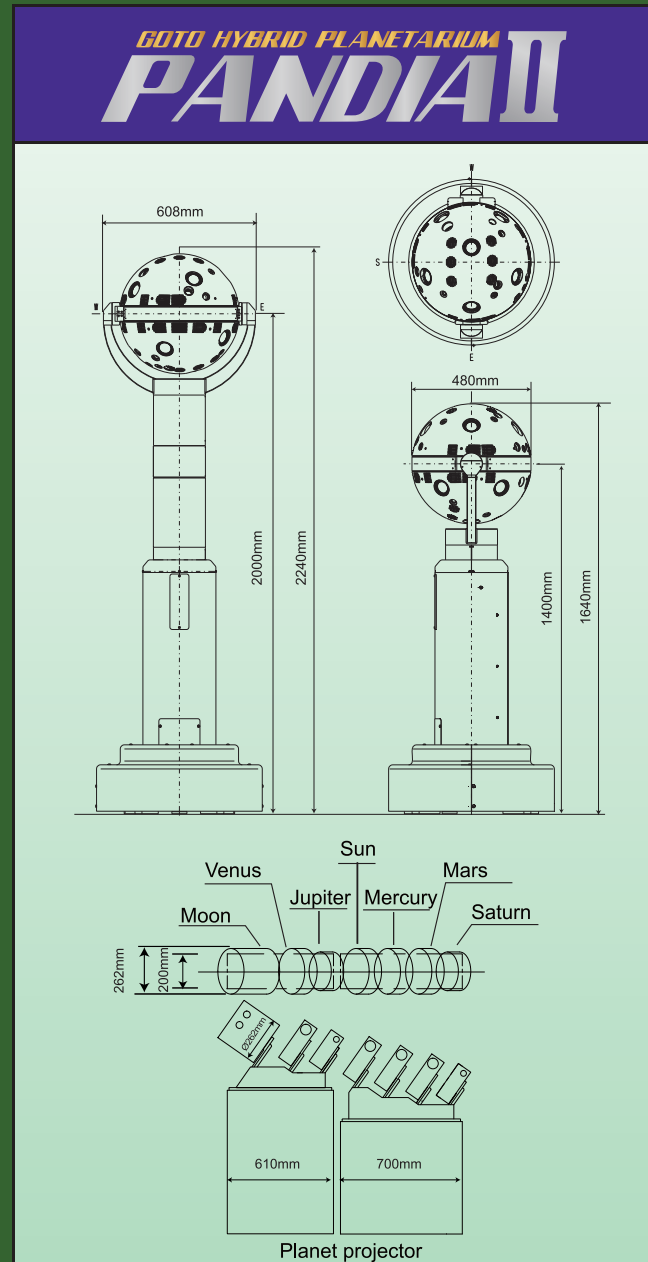
## Compact, LED, opto-mechanical planetarium

Scope	Dome Type	Horizontal/Tilted Dome
	Dome Diameter	8-12 meters (26-40 feet) Optionally up to 16m (53 feet)
	Standard Seating	60-140 seats (unidirectional or concentric)
Main Star Projector		Optical Projection Type, single starball
		100% full sky with no obstructions
	Star Lamp Type	Long-life, high output LEDs. Lifetime 30,000 hour. Depending on type of use and duty cycle Color Temperature 5000°K standard.
	Number of Stars	Approx. 9,500 stars down to mag 6.55
	Projection type	12 optical projection tubes
	Bright Stars	27 - combination of separate LED projector tubes and special treatment of fixed star plates, all with appropriate colors shown
		Max. star diameter: none greater than 3 arc min.
	Scintillation	Bright stars only. Any variable speed and depth possible.
	Deep Sky Objects	More than 337 including all Messier objects
	Milky Way	Approx. 40,000,000 micro stars
Main Body Motions		3-Axis, High-speed, High-accuracy motors Latitude/Diurnal/Azimuth 6RPM max.
		Annual - (for optional sun/moon/planets and Plus-V projector) up to 60 sec./year in continuous mode, or "jump" to any time or date in 10 sec. or less
Maintenance		Ten year maintenance cycle for most slip rings
		Low cost maintenance contracts available
		Factory trained technicians in USA, Europe, Asia
Weight		Projector: 80 kg, Power box: 25 kg
Size		Starball diameter: 480mm (19 inches)
Power Consumption		90-230VAC, 50/60Hz, 2.0KVA max

## Option Packages

A	<b>Moving Object Projectors</b>	Sun, Moon, Mercury, Venus, Mars, Jupiter, Saturn
		Long life, high output LED illumination
		All are computer driven by rapid X-Y slewing mirrors
		Alternate modes such as Orrery, Orbiting Earth
		Satellite, Moons of Jupiter, and others
		Moon shows precise phasing and surface features
		Independent object projectors mount off the main starball
		Sun and moon are shown 1° in size unless requested smaller.
		All planets show realistic coloration
B	<b>Plus-V projector</b>	Speed - (for optional sun/moon/planets) up to 60 sec./year in continuous mode, or "jump" to any time or date in 10 sec. or less
C	<b>Elevators</b>	HD high contrast video images. Maximum image size 2.5° <ul style="list-style-type: none"> <li>• 600 mm Telescoping Neck Lift (125kg)</li> <li>• 1,800mm Double Scissors Lift for use with floor pit (1,300 kg)</li> </ul>
D	<b>Console Desk</b>	GOTO's steel desk to accept the control panels of the PANDIA II HYBRID

\* All specifications subject to change without notice.



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8 ~ 16m

# GOTO HYBRID PLANETARIUM PANDIA II



## The PANDIA Series

The PANDIA model was developed by GOTO INC to bring high performance into small domes. The PANDIA II carries many of the same advanced functions as our model CHIRON III, which is built for the largest of domes – but at a much smaller price!

\* PANDIA is called PANDORA in Japan.



# GOTO INC

**www.goto.co.jp/**



# GOTO HYBRID PLANETARIUM PANDIA II

## Great Things Still Come in Small Packages

*In 2004, GOTO INC introduced the first GOTO HYBRID Planetarium™ and led the planetarium field into the future of astronomy education by synchronizing an opto-mechanical projector with dynamic color, realtime-rendered, fulldome video.*

*In 2011, GOTO INC once again rocked the planetarium world with the introduction of the ultra-compact Model PANDIA projector. It brought unprecedented brightness, resolution, realism, control, speed, and digital drive accuracy to small and medium sized planetariums, while also minimizing the visual profile of the projector itself.*

*And now, GOTO is pleased to introduce some exciting new improvements to the original PANDIA. Coming in a very small package indeed, it is the even better GOTO PANDIA II HYBRID Planetarium™.*



*More information about the exciting new PANDIA II is posted on the GOTO website, at [www.goto.co.jp](http://www.goto.co.jp) and is also available by contacting GOTO INC.*

**GOTO HYBRID**  
The Best Gets Better

## Introducing the PANDIA II HYBRID Planetarium from GOTO INC

### The Universe in a “Beach Ball”

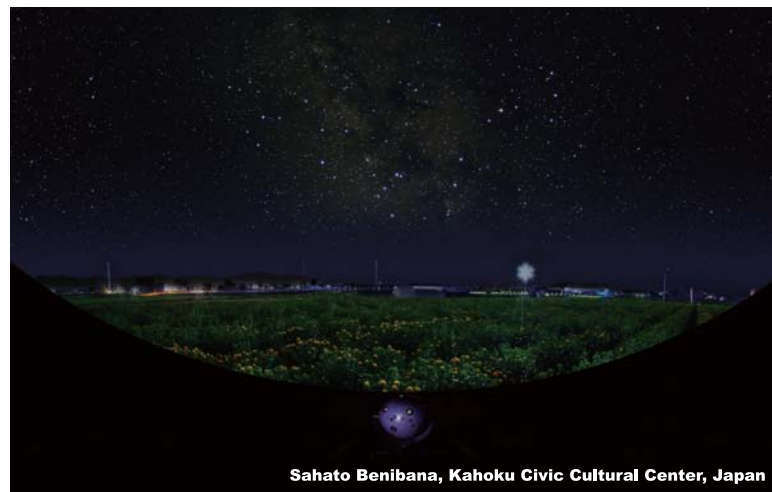
The planetarium environment continues to change, yet some things remain the same. Fulldome video, first developed by GOTO and shown publicly in 1996, has matured to the point where many of the visualizations previously done with slides, film, and special effects projectors can now be done adequately with digital video.

But experts still agree that opto-mechanical projectors like the PANDIA II create the finest and most realistic planetarium skies, far surpassing fulldome video star fields. And there is still a need for a planetarium projection system that can be operated “live” and spontaneously by an educator in real time, without difficult, time-consuming pre-scripting. Educational institutions still need a beautiful, bright, pinpoint sharp sky with 9,500 tiny stars showing against an inky black background, controlled with a user-friendly human interface. They need swift and computer-accurate positioning of objects on the sky and an easy-to-understand set of status displays to help the operator do an excellent live or automated program.

Planetarians still need the tools to create their own programs which fulfill the needs of their specific audiences, and to react to new celestial events quickly, or to answer questions immediately. So for many planetarium users, fulldome video is not enough. They need the new PANDIA II HYBRID.



### It has a ‘real’ Milky Way



For the first time ever, a small/medium sized projector has a truly glorious, realistic Milky Way. Imagine 40,000,000 tiny “micro-stars” painting a very subtle, very real Milky Way across the dome. Now you can show what our Galaxy really looks like to audiences who may never otherwise see the sky under perfect seeing conditions. In addition to the Milky Way, expect to see stunning Magellanic Clouds and more than 200 deep sky objects. Bring your binoculars!

### It’s bright!

New and unique GOTO star plate technology, paired with state of the art LED technology yields star images that are amazingly bright, yet tiny! Using extremely long-life LEDs lets the PANDIA II consume much less power than other projectors, and you will never again change a burned-out light bulb in the middle of a show! LED technology runs cooler, thus requiring fewer, quieter cooling fans, and users can expect brilliant projections for well over 30,000 hours before the LEDs need easy replacement. And since PANDIA II isn’t limited by obsolete, 25-year old fiber optic technology, it can bring a much wider and more precise range of magnitudes to the planetarium sky.

**NEW:** PANDIA II now has digitally controlled horizon cutoff shutters! This means that the PANDIA can not only be used in horizontal or tilted domes, but it also means that the horizon line can be raised or lowered, or tilted at will. Open the whole sky for the ultimate immersive experience, or close shutters off toward the zenith and then “open the dome” to see the stars again. Once you see it operate, your imagination will run wild with this technology! So now the PANDIA II is great in flat or tilted domes from 8-12 meters (26-40 feet) in diameter, and it is beautifully balanced with video in any HYBRID configuration!

### It's compact and durable

The PANDIA II uses the same, proven technology for motion and control that GOTO’s superb ORPHEUS and CHIRON III projectors use. Expect a 30-year lifetime for this machine, with easy, low-maintenance features throughout the design. With a starball diameter of only 480mm (19 inches), the PANDIA II presents a very small profile.

**NEW:** PANDIA II now has an available elevator option to lower the starball below the horizon using a unique “telescoping neck” design. Move it up to have perfect alignment on the sky if using center-mounted video projectors, or move it down to eliminate any interference with cove-mounted video projectors, and to minimize blockage of audience sight lines.

### It is a pleasure to control

Because we asked more than 200 of them before designing our new control interface, GOTO knows how planetarium educators use their equipment. We know that instructors must have full and flexible control of the planetarium at all times. When students fill the dome, there is no time for programming complex computers or for searching through long command menus on glowing monitors. Instead, planetarium educators expect smooth, simple, spontaneous control at their fingertips, even in complete darkness.



That’s why GOTO provides the planetarium industry’s most complete and flexible manual control console – the same, famous GOTO HYBRID Control that is featured on all of our HYBRID systems. Dedicated sliders, push button switches, and jog-dial analog motion controls are laid out in an ergonomic fashion that has been developed with and tested by actual planetarium educators – not just engineers!

So complex motions of the sky, jumps to different dates and times, overlaid graphics, and much much more is possible with a single touch of a control. This eliminates the need for time-consuming pre-programming for the vast majority of educational uses. Or if the user desires to pre-program an entire show that is easily done with the PANDIA II HYBRID’s sophisticated yet simple choice of interfaces, including portable, wireless controllers.

### It fits your budget

The PANDIA II was born to be a HYBRID. That is, since we know you’ll use it with a compatible fulldome system with GOTO HYBRID software linking to the PANDIA II, GOTO has left off features that can be adequately shown with synchronized fulldome video. The PANDIA II concentrates its efforts on a perfect recreation of a pure night sky, extreme accuracy and speed of motions, and the ultimate in ease and depth of manual control – but nothing else.

The GOTO PANDIA II HYBRID Planetarium™ system adds the power of a complete fulldome video system to complement the strengths of the opto-mechanical projector, with both under the control of a unified console that puts tremendous versatility at the operators’ fingertips. So coordinate lines, constellation outline and picture overlays, trails of the sun, moon, and planets, and much, much more are perfectly synchronized with the motions of the background of stars projected by the PANDIA II.

PANDIA II is available with or without opto-mechanical sun, moon, and planet projectors. You can choose the opto-mechanical projectors using super-bright LEDs to project dazzlingly bright, extremely high resolution and very realistic images. Or you can use the fulldome system to show somewhat dimmer, lower resolution images at a lower cost. Either way, the same great control interface gives you ultimate control, under a beautiful sky.

