SPECIFICATIONS

Product Name: Network Signal Tower with Voice Annunciator

Model: NHV□-□□□□-□□□□□

PATLITE Corporation

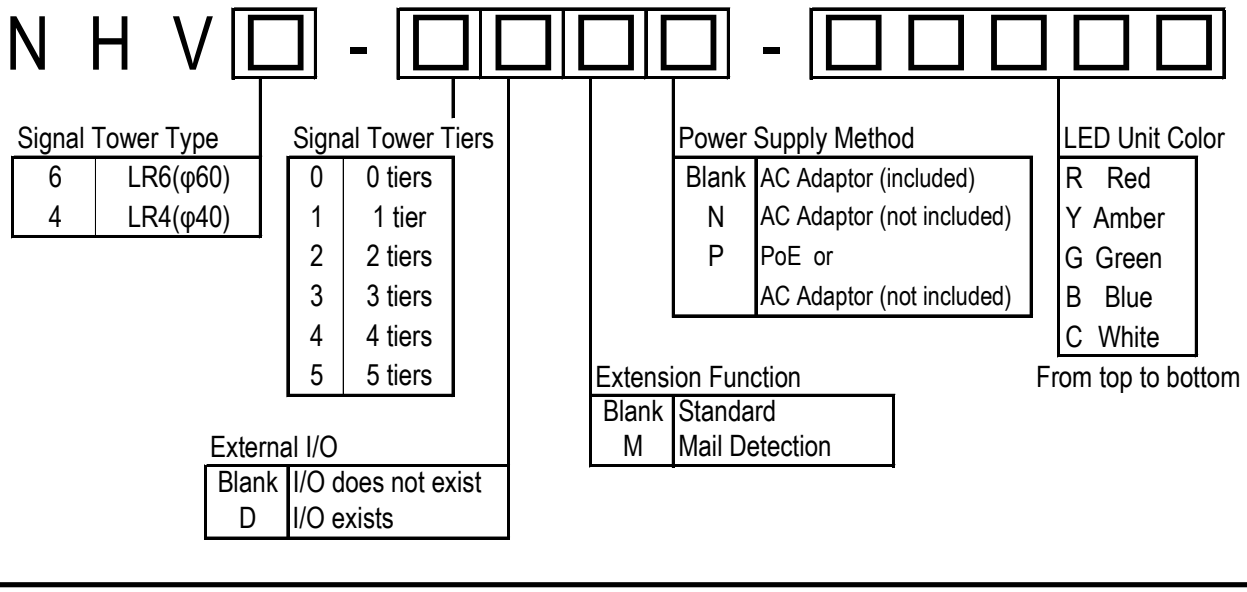
1. General Specifications

Model	5 tiers	NHV□-5□□□
	4 tiers	NHV□-4□□□
	3 tiers	NHV□-3□□□
	2 tiers	NHV□-2□□□
	1 tier	NHV□-1□□□
	0 tiers	NHV□-0□□□
Rated Voltage	DC Jack	24VDC
	PoE *1	48VDC Conforms to IEEE802.3at (PoE+) *2
	AC Adaptor *3	Input: 100 - 240VAC (50/60Hz) Output: 24VDC
Operating Voltage Range	DC Jack	21.6 - 26.4VDC
	PoE *1	42.5 - 57VDC
	AC Adaptor *3	90 - 264VAC
Rated Current Consumption	Main Unit *4	Standby: 120mA Maximum: 210mA (24VDC input)
		Standby: 115mA Maximum: 175mA (PoE 48VDC input)
	LED Unit	40mA (per Unit, 24VDC input) , 25mA (per Unit, PoE 48VDC input)
Rated Power Consumption	Main Unit *4	Standby: 3.5W Maximum: 6W (AC Adaptor, 100VAC input)
	LED Unit	1.0W (per Unit, AC Adaptor, 100VAC input)
Operating Ambient Temperature		0 - 40℃ (No Dew or Condensation)
Operating Ambient Humidity		20%RH - 80%RH (No Dew or Condensation)
Storage Ambient Temperature		-10 - 60℃ (No Dew or Condensation)
Storage Ambient Humidity		20%RH - 80%RH (No Dew or Condensation)
Mounting Location		Indoor Only
Mounting Direction		Upright
Protection Rating		IP 20
Insulation Resistance		More than 10Mohm at 500VDC between live part and non-current carrying metallic part
Withstand Voltage		1500VAC applied for 1min (10mA or less) between live part and non-current carrying metallic part without breaking insulration
Sound Pressure Level		88dB or more
	Environmental Condition	Front direction from the center, at 1m, 1.8kHz sine wave played back at -6dB MP3 data of the content and use of the environment, the sound pressure level will change.
Audio Line Output		600Ω 0dBV (Unbalanced, Monaural Mini-Jack)
Mass [Tolerance ±10%]	NHV6	760g + (60g) x Signal Tower Tiers (AC Adaptor not included)
	NHV4	750g + (35g) x Signal Tower Tiers (AC Adaptor not included)
	NHV6-D	805g + (60g) x Signal Tower Tiers (AC Adaptor not included)
	NHV4-D	795g + (35g) x Signal Tower Tiers (AC Adaptor not included)
	NHV6-DP	850g + (60g) x Signal Tower Tiers
	NHV4-DP	840g + (35g) x Signal Tower Tiers
External Contact Output (Only D-type)		Non-voltage contact output
	Number of Contacts	2
	Contact Capacity	(30VDC@3A) inrush current 5A or less (5VDC@1mA, Minimum, Reference)
	Wire Diameter	Solid Wire / Stranded Wire: ϕ0.41 - 0.81mm (AWG26 - 20)
	Wiring Method	Screwless terminal block
External Contact Input (Only D-type)		Non-voltage contact input NPN Transistor
	Number of Contacts	4
	Contact Capacity	"ON" output current @ 6mA or less per channel Terminal OFF condition Voltage: 24VDC
	Wire Diameter	Solid Wire / Stranded Wire: φ0.41 - 0.81mm (AWG26 - 20)
	Wiring Method	Screwless terminal block

Communication Method		Ethernet (Conforms to the IEEE 802.3) 10BASE-T / 100BASE-TX / 1000BASE-T (Auto MDI / MDI-X)	
	IP Network	IPv4 / IPv6 dual stack	
Interface		USB2.0/1.1 Type-A 1ch	
Outer Dimensions		Refer to the Outer Dimension Drawing	
Accessories		AC Adaptor *3 , Adhesive sheet	
Compatible Unit (Optional)	NHV6	LED Unit	LR6-E-RZ, RY, RG, RB, C LR6-E-R, Y, G, B, MZ
		Wireless Data Acquisition System Transmitter	WDT-6LR-Z2
	NHV4	LED Unit	LR4-E-RZ, RY, RG, RB, C LR4-E-R, Y, G, B
		Wireless Data Acquisition System Transmitter	WDT-4LR-Z2
Optional Parts		Wall Mounting Bracket	NH-001
		Partition Mounting Bracket	NH-002
		AC Adaptor	ADP-001
Conformity Standards		UL 62368-1, CSA C22.2 No.62368-1 FCC Part 15 Subpart B(Class A), ICES-003(Class A) EN 55032(Class A), EN 55035, EN IEC 63000 (KS C 9610-6-4, KS C 9610-6-2) *5 (TR CU 020, TR EEU 037) *5	
Remark		*1 Only P-type *2 A PoE+ power supply HUB that complies with IEEE802.3at is required. USB cannot be used with PoE-powered HUBs that comply with IEEE802.3af. *3 Excludes N-type and P-type *4 Does not include USB current consumption *5 Only N-type and P-type ・Conforms to the CE Requirements ・Conforms to the UKCA Requirements ・UL/cUL Listed	

2. Model

2.1. Model Number Configuration



2.2. Model Number List

NHV4-0	NHV4-0N	NHV6-0	NHV6-0N
NHV4-1-R	NHV4-3N-RYG	NHV6-1-R	NHV6-3N-RYG
NHV4-1-Y	NHV4-0DN	NHV6-1-Y	NHV6-0DN
NHV4-1-G	NHV4-3DN-RYG	NHV6-1-G	NHV6-3DN-RYG
NHV4-2-RY	NHV4-0DP	NHV6-2-RY	NHV6-0DP
NHV4-2-RG	NHV4-3DP-RYG	NHV6-2-RG	NHV6-3DP-RYG
NHV4-3-RYG	NHV4-0M	NHV6-3-RYG	NHV6-0M
NHV4-4-RYGB	NHV4-3M-RYG	NHV6-4-RYGB	NHV6-3M-RYG
NHV4-5-RYGBC	NHV4-0MN	NHV6-5-RYGBC	NHV6-0MN
NHV4-0D	NHV4-3MN-RYG	NHV6-0D	NHV6-3MN-RYG
NHV4-1D-R		NHV6-1D-R	
NHV4-1D-Y		NHV6-1D-Y	
NHV4-1D-G		NHV6-1D-G	
NHV4-2D-RY		NHV6-2D-RY	
NHV4-2D-RG		NHV6-2D-RG	
NHV4-3D-RYG		NHV6-3D-RYG	
NHV4-4D-RYGB		NHV6-4D-RYGB	
NHV4-5D-RYGBC		NHV6-5D-RYGBC	

3. Action Specification

3.1. Information (Main Unit)

Signal Tower			**Lighting, Flashing pattern, and off lighting can be controlled for each LED.**
	Flashing pattern 1		ON(500ms), OFF(500ms) (repetition)
	Flashing pattern 2		ON(80ms), OFF(170ms), ON(80ms), OFF(670ms) (repetition)
	Flashing pattern 3		ON(250ms), OFF(250ms) (repetition)
	Flashing pattern 4		ON(1000ms), OFF(1000ms) (repetition)
Sound			**Up to 71 types of messages can be played on the main unit speaker and line output.**
	Number of messages		MP3 File : 60 kinds Preset : 11 kinds
		MP3 Format	Bit Rate : 32kbit/s, 64kbit/s, 128kbit/s Constant Bit Rate (CBR) only
		Preset	Buzzer Sound : 5 kinds Chime Sound : 3 kinds Voice Sound : 3 kinds
	Playback Pattern		One-shot Playback, Repeat Playback, Endless Playback
		One-shot Playback	It is played back once per playback event.
		Repeat Playback	It is played back when set up to play a certain number of times per playback event. Number of playback times : 1 - 254
		Endless Playback	It will play back repeatedly per playback event.
	Playback Mode		Input Priority Playback, Memory Playback
		Input Priority Playback	If a new playback event occurs, the channel being played back will be interrupted and a new channel will play.
		Memory Playback	When playback is ended, the next available channel stored in memory will play.
Notification Sound			**Up to 10 of Notification Sounds can be played in combination with other Sound.**
	Number of Notification Sounds		MP3 File : 5 kinds Preset : 5 kinds
		MP3 Format	Bit Rate : 32kbit/s, 64kbit/s, 128kbit/s Constant Bit Rate (CBR) only
		Preset	Chime Sound : 5 kinds
Buzzer			**5 kinds of buzzer sounds**
	Buzzer pattern 1		ON(250ms), OFF(250ms) (repetition)
	Buzzer pattern 2		ON(500ms), OFF(500ms) (repetition)
	Buzzer pattern 3		ON(200ms), OFF(50ms), ON(200ms), OFF(550ms) (repetition)
	Buzzer pattern 4		ON(continuity)
	Buzzer pattern 5		ON(1000ms), OFF(1000ms) (repetition)

3.2. External Control

External Contact Output			External contact output can be controlled when an event occurs or outputting sound.
	Contact Function		Digital Output, BUSY Output
		Digital Output	The digital "A Contact" or "B Contact" output for an automatic OFF function of the digital output port can be set up.
		BUSY Output	It controls the relay contact output in conjunction with the signal output from the line-out.

3.2. Information (Network)

Email Notification		**When an event occurs, an e-mail message is transmitted**
	Number of notifications	8
	Authentication protocol	SMTP certification(Password, OAuth2), POP authentication
	Security	SSL/TLS, STARTTLS, none
SNMP Notification		**When an event occurs, Trap or Inform is executed.**
	Number of notifications	8
	Version	v1 / v2c / v3
HTTP Notification		**When an event occurs, HTTP command is executed.**
	Number of notifications	8
	Protocol	HTTP, HTTPS
	Method	GET
	Authentication protocol	Basic Access Authentication, Digest Access Authentication, none

4. Function Specification

4.1. Main Unit Control Function

RSH Command		Controllable with RSH Command
SSH Command		Controllable with SSH Command
HTTP Command		Controllable with HTTP Command
Socket Communication		Controllable with PNS Command and PHN Command
SNMP Command		Controllable with SNMP "set" Command
	Version	v1 / v2c / v3
"Clear" Button		Clear operation is possible with "Clear" Button of the main unit

		Controllable Action						
Command		Signal Tower	Sound	Buzzer	Digi-Out	e-mail	SNMP	HTTP
RSH Command		✓	✓	✓	✓	✓*1	✓*1	-
SSH Command		✓	✓	✓	✓	✓*1	✓*1	-
HTTP Command		✓	✓*2	✓	✓	-	-	-
Socket	PNS	✓	✓	✓	✓	-	-	-
	PHN	△*3	-	△*4	-	-	-	-
SNMP Command		✓	✓	✓	✓	-	-	-
"Clear" Button		✓	✓*5	✓*6	✓	✓	✓	✓

*1 It can be used when e-mail or SNMP is set to "Active" in the RSH/SSH Command Configuration.
*2 It is possible to play back received text data by performing speech synthesis in real time.
Notification Sounds can be played in combination with before or after a synthesis sound.
*3 Signal Tower "Red", "Amber" and "Green", and Flashing pattern 1
*4 Buzzer pattern1 and Buzzer pattern2
*5 In memory playback mode, you can proceed to the next message
*6 It is possible to stop only the buzzer while maintaining the state of Signal Tower.

4.2. External Monitoring Function

Ping Monitoring Function			**Network abnormality detection by sending Ping network devices**
	Number of Monitoring		24
	Number of Group		3
	Monitoring Cycle		1 - 600 seconds
	Sending Count		The number of times to detect can be set from 1 to 30.
	Number of Sending		The number of sending Ping by one monitoring can be set from 1 to 3.
SNMP Trap Reception Function			**Trap Reception detection**
	Version		v1 / v2c / v3
	Number of Reception		64
	variable-bindings		2 OID per 1 Trap Reception
		Detectable Type	INTEGER, OCTET STRING (String data, Binary data)
SNMP Supported Equipment Monitor Function			**For SNMP Supported equipment, with SNMP command, their status can be acquisitioned periodically and monitored.**
	Version		v1 / v2c / v3
	Monitoring Cycle		1 - 60 seconds
	Detection method		Condition Agreement Detection : 20 Change Detection : 5
		Condition Agreement	Dtection that the acquired value meets the condition
		Detectable Type	INTEGER, OCTET STRING (String data, Binary data)
		Change Detection	Detection that the acquired value has changed
		Detectable Type	INTEGER
Mail Detection (Only M-type)			**Detect incoming mail on the mail server.**
	Protocol		IMAP, IMAPS, POP3, POP3S
	Authentication method		Password Authentication, OAuth2
	Encryption Method		SSL/TLS, STARTTLS, none
	Mail check interval		10 - 3600 seconds
	Filter Rule		Conditions for detecting target emails can be set.
		Number of Condition	20
		Detection Target	Sender, Subject, Body text
		Decision condition	[Matches with], [Beginning with], [Include], [Be free of]
External Contact Input Monitor Function			**It monitors the state change of external contact input.**
	Digital Logic Setting		A Contact, B Contact
	Detection method		Status Change Detection, Status Agreement Detection
		Status Change	Detection of change from OFF to ON or change from ON to OFF
		Status Agreement	Detecting the input for a certain period of time Detection time : 1 - 3600 seconds Number of Detection : 4

	Excutable action at detection							
Monitoring	Signal	Sound	Buzzer	Digi-Out	e-mail	SNMP	HTTP	MQTT
Ping Monitoring	✓	✓	✓	✓	✓	✓	✓	✓
SNMP Trap Reception	✓	✓	✓	✓	✓	✓	✓	✓
SNMP Supported	✓	✓	✓	✓	✓	✓	✓	✓
Mail Detection *1	✓	✓	✓	✓	✓	✓	✓	✓
External Contact Input	✓	✓	✓	✓	✓	✓	✓	✓

*1 Mail detection is only available for M-type

4.3. Main Unit Status Acquisition Function

RSH Command	The state of the main body can be acquired by the status acquisition command.
SSH Command	The state of the main body can be acquired by the status acquisition command.
Socket Communication	Status acquisition available with PNS Command and PHN Command
SNMP Command	Status acquisition available with SNMP "get" Command
Version	v1 / v2c / v3
HTTP Communication	The state of the main body can be acquired in XML/JSON data format.

Command		Acquisition data				
		Signal Tower	Sound	Buzzer	Digi-In	Digi-Out
RSH Command		✓	✓	✓	✓	✓
SSH Command		✓	✓	✓	✓	✓
Socket	PNS	✓	✓	✓	✓	✓
	PHN	✓*1	-	✓*2	-	-
SNMP Command		✓	✓	✓	✓	✓
XML/JSON format file		✓	✓	✓	✓	✓

*1 Signal Tower "Red", "Amber" and "Green", and Flashing pattern 1

*2 Buzzer pattern 1 and Buzzer pattern 2

4.4. Main Unit Setting Function

Time Correction Function	The internal clock in this product can communicate with an NTP server to automatically correct the time.
Automatic Network Setting	Network setting in this product can communicate with an DHCP server to automatically set.
Master Volume Setting	Master Volume of Buzzer and Sound can be set
Flash Control Setting	The brightness of the LED unit can be reduced.*1
Standard Action Setting	The color of Signal Tower that lights up after the clear operation is executed can be set.
Self-test Function	Self test of Signal Tower and buzzer is possible with test button of the main body and RSH/SSH command.
Config Setting	Various settings of the main body can be read and written as setting file.
Event Log	Event logs can be downloaded via web browser and USB flash drive.
USB Flash Drive Function	USB flash drive can be used to read and written configuration files, update firmware, and download Event logs.
Text-to-speech synthesis	Speech synthesis from text data can be registered as voice data.
Supported languages	Japanese (Kanji-Kana mixed text), English
Main Unit Setting	Various settings of the main body can be done with a web browser.
Supported browsers	Google Chrome *2 Microsoft Edge *3
Languages supported on the setting screen	Japanese, English, Traditional Chinese, Sinplified Chinese, Korean, Thai German, French, Italian, Spanish, Mexican

*1 Light reduction is not possible when using LR4/6-E-MZ or WDT-4/6LR-Z2.

*2 Google Chrome is a trademark or registered trademark of Google LLC.

*3 Microsoft Edge is registered trademark of Microsoft Corporation in the United States and other countries.

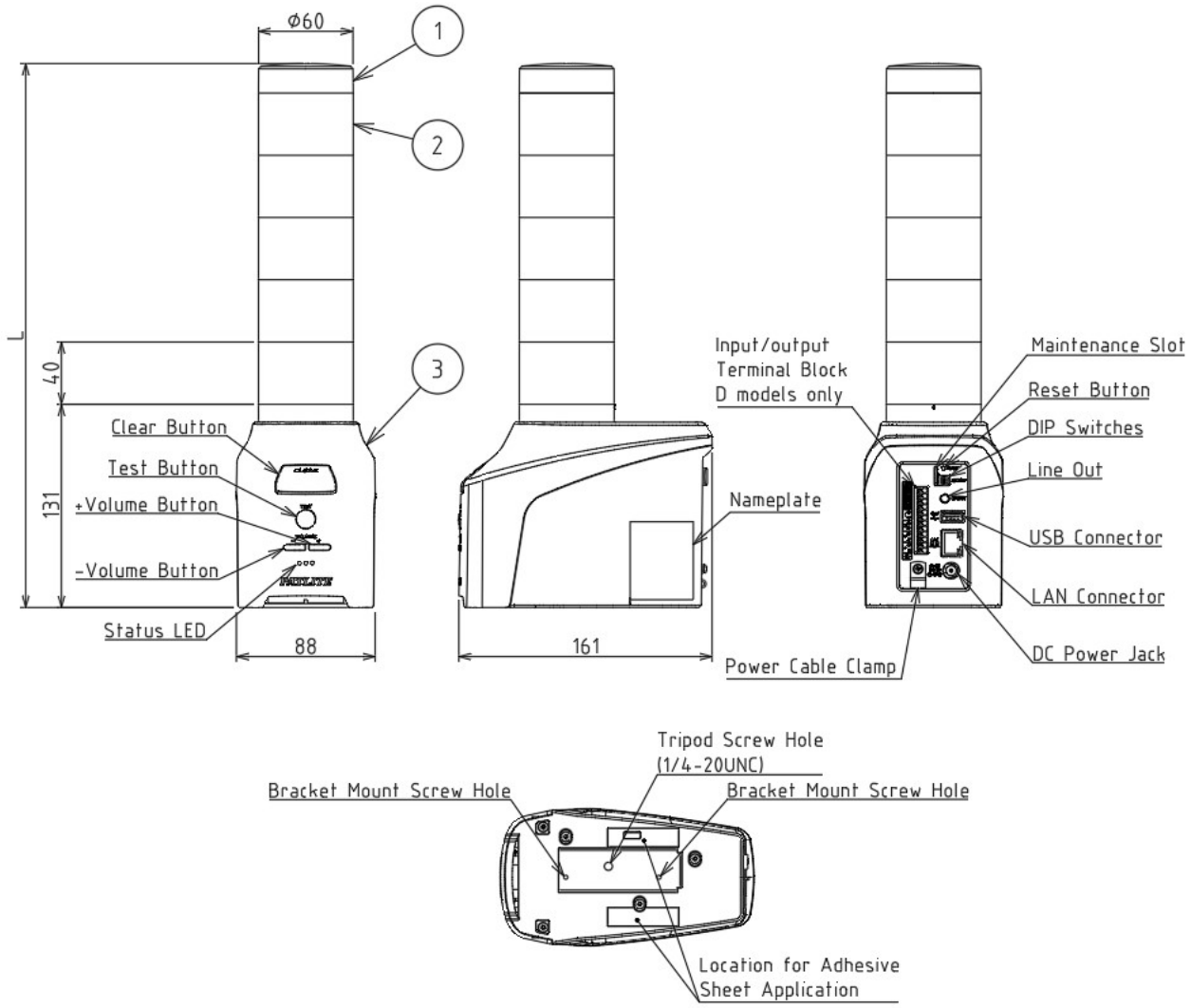
4.5. Cloud Function

Supported Cloud Platform			Microsoft Azure *1
			Amazon Web Services (AWS) *2
	Azure	Connection Settings	Azure IoT Central/DPS, Azure IoT Hub (IoT Plug and Play)
		Built-in features	Device Twin, Direct Method, Device-to-cloud Message, Cloud-to-device Message
	AWS	Connection Settings	AWS IoT Core
		Built-in features	Device Shadow, MQTT client
Main Unit Control			Signal Tower, Sound *3, Buzzer, Digital Output
Main Unit Status Acquisition			Signal Tower, Sound, Buzzer, Digital Output
Main Unit Status Transmission			Signal Tower, Sound, Buzzer, "Clear" button, Digital Output, Digital Input

*1 Microsoft Azure is registered trademark of Microsoft Corporation in the United States and other countries.
*2 Amazon Web Services, the "Powered by AWS"logo, and any other AWS trademarks used in such materials are trademarks of Amazon.com, Inc. or its affiliates in the United States and other countries.
*3 It is possible to play back received text data by performing speech synthesis in real time.
Notification Sounds can be played in combination with before or after a synthesis sound.

NHV6

(Unit: mm)

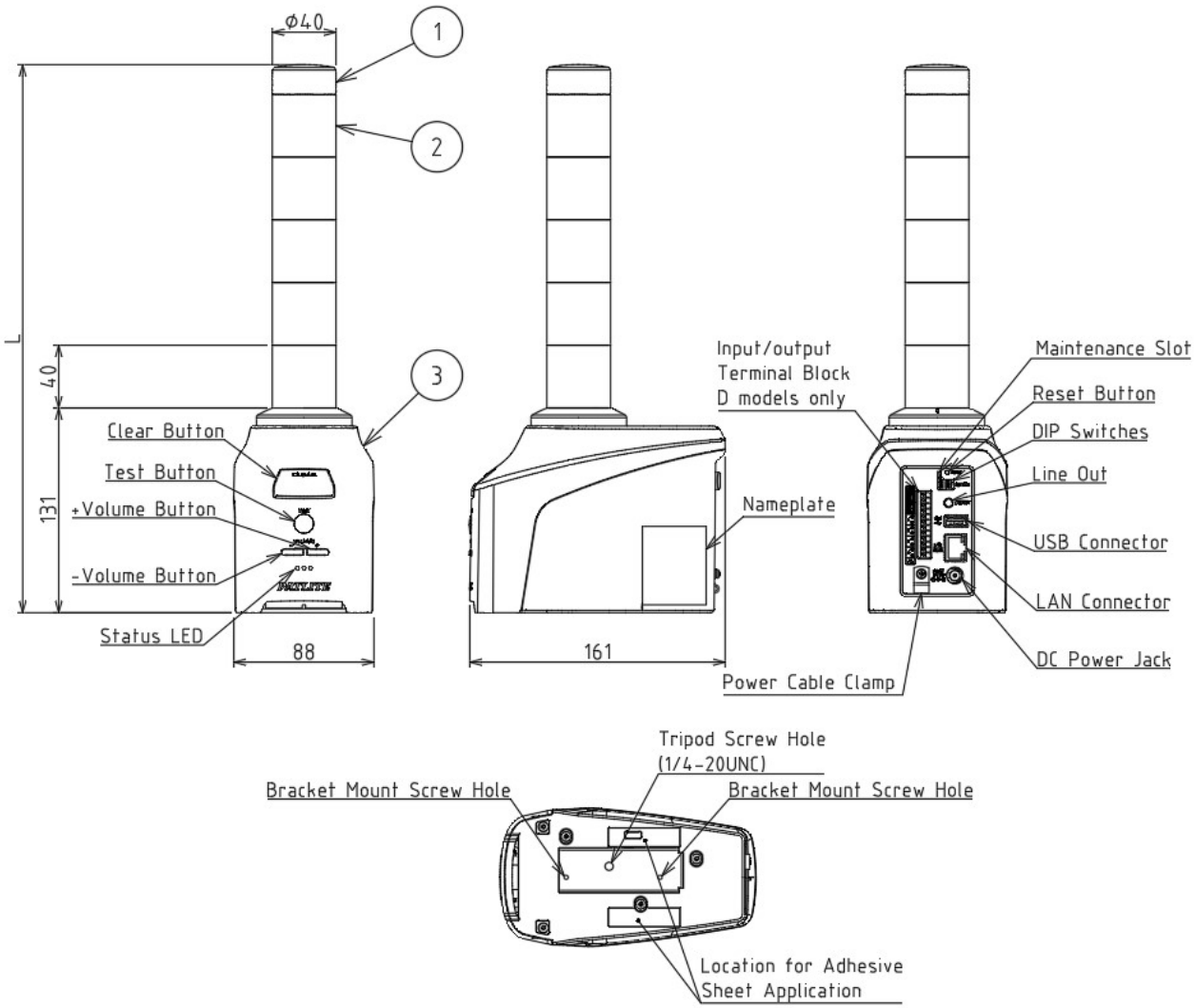


No.	Parts name	Material	Color
1	Head Cover	PC	Off-white
2	LED Unit	PC	Clear
3	Main Body	ABS	Off-white/Medium Gray

Number of LED	L
0 tiers	150
1 tier	190
2 tiers	230
3 tiers	270
4 tiers	310
5 tiers	350

NHV4

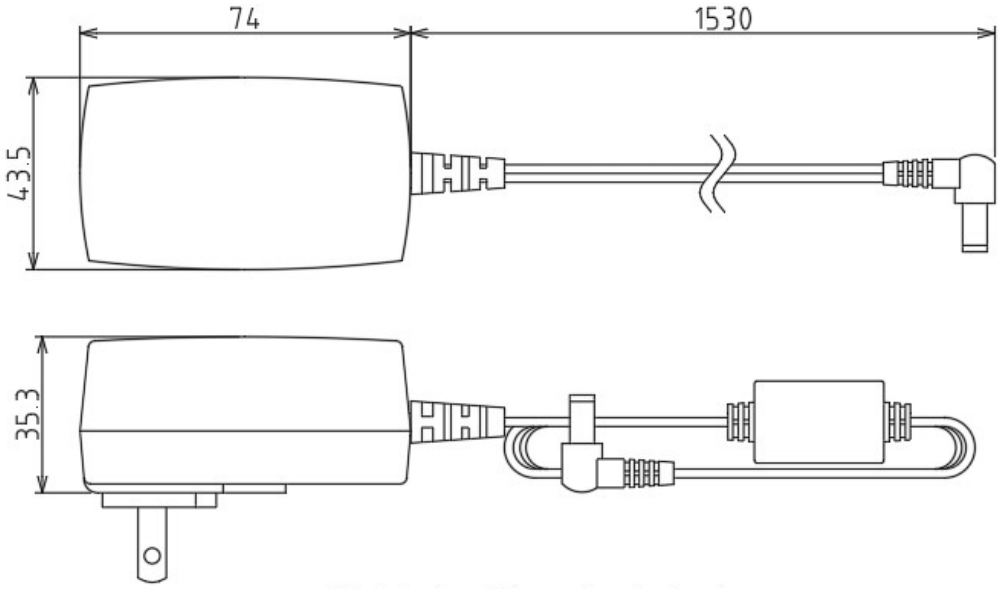
(Unit: mm)



No.	Parts name	Material	Color
1	Head Cover	PC	Off-white
2	LED Unit	PC	Clear
3	Main Body	ABS	Off-white/Medium Gray

Number of LED	L
0 tiers	150
1 tier	190
2 tiers	230
3 tiers	270
4 tiers	310
5 tiers	350

(Unit: mm)



AC Adaptor Dimensional drawing