To.MASTER INSTRUMENTS PTY LTD.

Specification	
Alkaline Battery	
Ordering code	LR14XW/2SKXA
Designation	LR14

Approved by Division/Department Name Signature/date

Date : Feb.14,2023

Energy Device Business Division
Panasonic Energy Co., Ltd.

Approved	Checked	Drafted
S.Kato	T.Okada	Y.Hoshina
Eng. Dep.	Eng. Sec.	Eng. Sec.

Revision history

No.	Date		LR14XW/2SKXA
1	2022/2/1	1) Change of Company name Panasonic Corporation → Panasonic Energy Co., Ltd. (From April 1, 2022) 2) Statement changes on label ・Change in line with the revision of National Standard (GB) of P. R. China . GB Standard Number Alteration (Existing) GB/T8897.2-2013 (New) GB/T8897.2-2021 ・Sales company name & address, COD mark, Japanese warning text【**警告文**】**皮膚→皮ふ** Outer Carton; Sales company name, Manufacturing company name & address, Care mark 3) Revision of product specifications ・Format change ・ Consistency with the latest JIS standards ・Addition of items - Quality warranty and disclaimer - Operation and change of this specification ・ Addition of precautions & modify wording	
2	2022/4/1	Change of company name in specifications	
3	2022/10/7	Change of battery outer label (Printing method change of expiry date code) Scheduled to be changed from April 2023 production	

1 Application scope

This specification applies to the LR14XW(hereinafter reference to as “this product”) which is manufactured by Panasonic Energy Co., Ltd..

2 General

2.1 Relevant major official standards

JIS C 8510, JIS C 8514, JIS C 8515, IEC 60086-1, IEC 60086-2, IEC 60086-5

2.2 Designation : **LR14**

2.3 Nominal Voltage : **1.5 V**

2.4 Product mass : **64 g**

2.5 Expiration date is indicated to the drawing of artistic designs.

3 Performance

3.1 OCV shall satisfy Table 1 after the test mentioned in 7 (Testing).

3.2 Minimum Average Duration (MAD) : The MAD shall meet the value mentioned in Table 1 or more, after the test of 7 (Testing).

3.3 Resistance to leakage shall satisfy Table 1 after the test of 7 (Testing).

Table 1 : Performance

		Testing condition				Panasonic Energy Co., Ltd. SPEC	
		Load	Discharging time per day	End point (V)	Unit	Initial	20℃ After 12 months
OCV a)		–	–	–	V	Max. 1.68	Max. 1.68
						Min. (1.54)	Min. (1.53)
Minimum Average Duration (MAD)		3.9Ω	b)	0.9	min	870	785
		400mA	2hour	0.9	h	8.5	8.2
		3.9Ω	1hour	0.8	h	18	16.5
Resistance to Leakage	Over discharge	Cf. Table 2				There shall be neither evidence of electrolyte leakage on the surface of any battery nor deformation beyond the specified dimension.	
	Under High temperature	Cf. Table 2				There shall be neither evidence of electrolyte leakage on the surface of any battery nor deformation beyond the specified dimension.	

Note a) “Max.” and “Min.” in column of OCV mean maximum and minimum values. The value with parenthesis is informative.

b) Repeat the cycle of 4 minutes on, 11 minutes off, for 8 hours continuously.

4 Dimensions: As per attached Figure 1.

5 Terminals: As per attached Figure 1. (+) Cap, (–) Base
There shall be no rust or deformation, which will cause hindrance on use.

6 Appearance: There shall be no stain, scratch and deformation which will cause hindrance on use.
The marking on surface shall be clear.

7 Testing

7.1 Storage and testing condition : If not specified, the temperature is 20±2 ℃ and the relative humidity shall be (55±20) %. However, during 3 months that it is short period only, it may be 20±5 ℃.

7.2 Testing method : Refer to Table 2

Table 2 : Testing method

Open circuit voltage	After more than 8 hours storage under the condition specified in 7.1, measure with a voltmeter mentioned below at the same condition. The accuracy of the measuring equipment shall be ≦ 0.25% and the precision shall be ≦ 50% of the value of the last significant digit. The internal resistance of the measuring instrument shall be ≧ 1MΩ.
Service life	Battery shall be discharged as specified condition until the voltage on load drops for the first time below the specified end point. (service life under the intermittent discharge should be accumulated the time on load) a) Commencement: After more than 8 hours storage under the condition specified in 7.1. b) Discharging method : Based on Table 1 c) Calculation of average service life: Test 8 batteries and calculate the average.
Resistance to leakage at over discharge	After usual discharging test, the discharge is continued until voltage of battery drops to 0.6 V for the first time.
Resistance to leakage at high temperature	The test battery should be stored for 30 days under the temperature at 45±2 ℃ and relative humidity below 70 %(RH).
Dimensions	Dimensions shall be measured by the vernier caliper specified in JIS B 7507 having below 200 mm of measuring capability and minimum division 0.05 mm.
Terminal	Visual Observation
Appearance	Visual Observation

8 Marking Specified as the drawing of designs.

9 Manufacturer
Panasonic Energy Co., Ltd.

Unit: mm

	JIS C 8515:2017	
	Max.	Min.
h1	50.0	(48.6)
h2	—	48.6
h3	—	1.5
h4	0.9	—
d1	26.2	24.9
d3	7.5	(5.5)
d6	—	13.0
ϕP	1.0	—
Pip	0.4	—

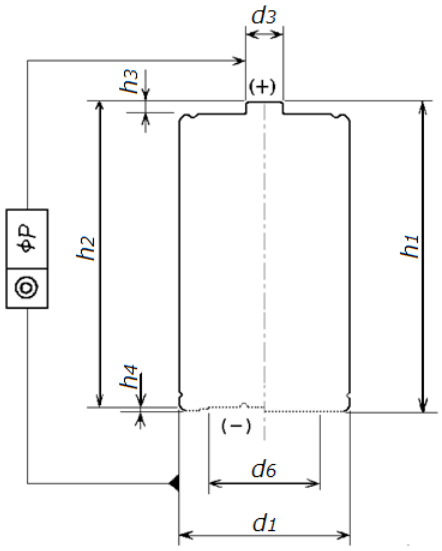


Figure1 **LR14**

Note **1** Numerical value with parentheses: informative

Note **2** The symbols of dimensions are as following.

h1 : maximum overall height of the battery

h2 : minimum distance between the flats of positive and negative contact

h3 : minimum projection of the flat positive contact

h4 : maximum recess of the negative flat contact surface

d1 : maximum and minimum diameter of the battery

d3 : maximum diameter of the positive contact within the specified projection height

d6 : minimum outer diameter of the negative flat contact surface

ϕP : concentricity of the positive contact

Pip : height of pip (This model doesn't have pip.)

Note **3** The cylindrical surface is insulated from the contacts.

Note **4** The negative contact "*d6*" is not necessarily flat over the whole area.

10 Quality warranty and disclaimer

10-1 Warranty coverage

Our company warrants that the product shall conform to this specifications for a period of 12 months from the date of delivery ("Warranty Period").During the Warranty Period, if the customer finds a non-conformity of the product, our company will independently analyze the cause of such non-conformity in the product. If our analysis confirms the non-conformity is solely attributable to the negligence of us, our company agrees to supply conforming products as a replacement at its sole expense.

10-2 Disclaimer

1. Since the product is the battery designed and manufactured not for special applications in which: (1) quality, reliability and safety are required, or (2) the failure or malfunction of the product may directly jeopardize life or cause threat of personal injury, such as for medical equipment, automotive equipment, aircraft and aerospace equipment, aircraft electronics equipment, explosion-proof equipment, railway-related equipment, military-related equipment, but for general consumer products, our company cannot accept responsibility for damages caused to the customer or third parties due to the use of the product for the said special applications.

2. Our company does not assume any responsibility for breakdown and characteristics change due to external factors at the time of product handling or at customer's process, resulting from the fact that the range of use conditions and environment as well as precautions in the catalog, product specifications and "General Instructions in Use of Dry Battery" herein are not observed.

3. When designing your equipment, comply with the range of operating conditions guaranteed in these specifications. Otherwise, our company will not be liable for any breakdown or defect which may arise later in your equipment.

4. Our company cannot accept responsibility for defects resulting from your conversion, modification, or additional processing of the product.

5. Our company cannot take responsibility for a problem if it is due to a phenomenon that cannot possibly or is difficult to be prevented by the technology made available at the time of the purchase or contract.

6. It is your responsibility to confirm matching and life of our product and your products after our product is integrated into your devices. Quality assurance is also your responsibility. We cannot accept responsibility for damages or defects caused due to any combination, incorporation or compatibility of our company's product into or with your or other parties' products, parts, or materials etc.

7. When reselling products described in these specifications to other companies and receiving any claim or request from the resale destination, please understand that customers will bear the burden.

8. Our company cannot accept responsibility for damages caused by natural disaster, war, civil disorders, riots, labor dispute actions, fire or other force majeure event, or order, disposition or directive due to the formulation, amendment or abolishment of laws and ordinances in and out of the country, or other reasons beyond our reasonable control.

11 General Instructions in Use of Dry Battery

1. Discharge
   - Please use batteries at a temperature of 5 ~ 45℃.
   - Less than 5℃, the discharge capacity can drop extremely.
   - More than 45℃, performance deterioration and leak of contents may occur.

2. Storage
   - Please store in a dry, clean, cool and ventilated place, and also avoid touching water-drops and snow. Please store batteries at a temperature of 10 ~ 25℃ and should never exceed +30℃. Extremes of humidity (over 95% RH and below 40% RH) should be avoided.
   - Storage at a high temperature promotes self-discharge of battery and may decrease the performance and the service life of it and also may cause leak.
   - Storage at a high humidity may cause rust of the terminals or the metal parts of a battery. Storage in a low temperature place can cause rust of the terminals or the metal parts, since dew condensation by the humidity at there may occur.
   - Please store in a place without corrosive gases (hydrogen sulfide, ammonia etc.).
   - Please do not store batteries wrapped in aluminum foil or together with metallic articles.
   - When storing such as 9V type or other layer-built batteries, please put insulating tapes on both terminals not to short-circuit.
   - When storing the batteries for emergency use, please check "Expiry month and year of recommended use" of them regularly. Please replace the battery that is out of "Expiry month and year of recommended use " with a new one immediately.

3. Cleaning of the terminals
   - Before putting a battery in equipment, please wipe the each terminal of them cleanly. When the terminals of a battery or equipment become tainted, equipment may work insufficiently due to bad electrical contact.

4. Expiry month and year of recommended use
   - The "Expiry month and year of recommended use" is the time limit by which the battery performance specified in JIS (Japanese Industrial Standard) is achieved when the battery is stored without being loaded in the equipment in the unused state (storage temperature 20± 2 ℃). In other words "Expiry month and year of recommended use" does not mean that the overdue battery is not usable, but the meaning is to suggest using a battery within this period as much as possible.
   - "Expiry month and year of recommended use" setting by type or size is shown on a battery.
   - Example of "Expiry month and year of recommended use" is as follows.
     Month in two digits and year in four digits (or last two digits of it) is shown on the bottom or side of a battery.
     Ex. 1: 01-2026 means that the expiry month and year of recommended use is January 2026.
     Ex. 2: 01-26 means that the expiry month and year of recommended use is January 2026.

12 Operation and change of this specification (revision or abolition)

In the event of any failure or accident regarding matters not described in this specification, the both companies will discuss and deal with the matter in good faith.
Questions, revisions, and abolition concerning these specifications shall be conducted based on mutual consultation and agreement.
If this specification is not approved or returned 6 months after the date of issue or the first delivery date of the product, whichever is earlier, it will be understood that your company has approved and received the specification.

符号/SYMBOL	年月日/DATE	訂正などの履歴 /RECORD OR REVISION	記印/SIGNED	検印/CHECKED
制定	2022.09.13	新意匠発行/New design.	M.Tane	S.Makata

使用推奨期限表示位置
/The position of Expiry date code (MM-YYYY)

←位置指示のため表示しない。
/This line is unnecessary. (Not printed)

本図面は、現物とは若干、色調が異なります。/ ACTUAL COLOR IS DIFFERENT FROM THAT IN THIS SHEET.

(単位/Unit : mm)

使用推奨期限の付与方法/Control of Expiry date code 例/Example	
生産年月/Production date	表示内容/Indication on body
2022年9月/September, 2022	09-2027
2022年10月/October, 2022	10-2027
2022年11月/November, 2022	11-2027
2022年12月/December, 2022	12-2027
ご注意/Attention 切替単位：年12回/Frequency : Twelve times per a year	

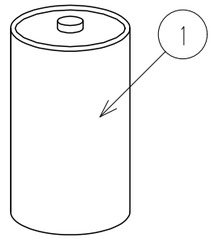
符号表示位置/ THE POSITION OF DATE CODE	寸法図面参照
絶縁リング 又は 端子板/ DIVORCE RING OR TERMINAL BASE	—
符号/ CODE	~~製造符号 / PRODUCTION CODE~~ ·使用推奨期限(5 年)/ BEST USED BEFORE(5 Years) ~~先付符号(年)/ EXPIRY CODE(Years)~~ ~~ユーザー専用符号/ USER'S SPECIFIC CODE~~ ~~符号なし / NO PRODUCTION CODE~~

記号/SYMBOL	品番 / MODEL NUMBER	材質 / MATERIAL
AL	LR14XW	PET

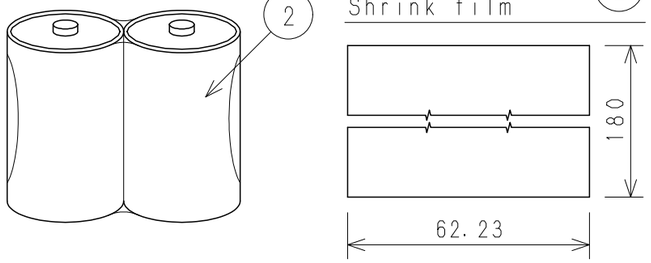
名称 NAME	LR14XWラベル	図名/ DRAWING NAME	外装ラベル/ OUTER LABEL
工場 / FACTORY	JAPAN	図番/NUMBER	
設図 DESIGN		製図 DRAWING	M.Tane 2022.09.13
検図 CHECK	S.Makata 2022.09.13	承認 APPROVAL	T.Kato 2022.09.13
部品番/ PART NUMBER	BAM2SV02150J_T		

Panasonic Energy Drawing of Graphics (様式:2021.10.01)

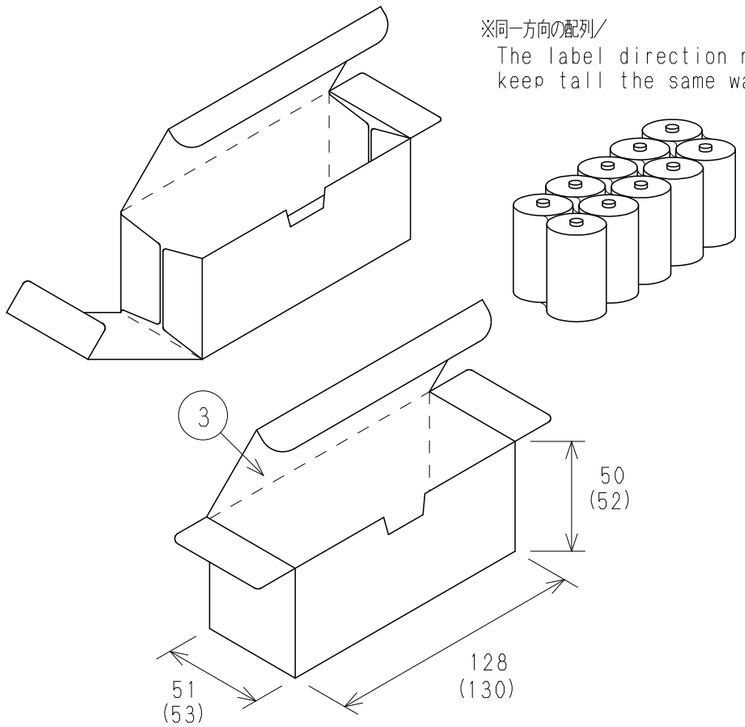
○ 製 品/PRODUCT



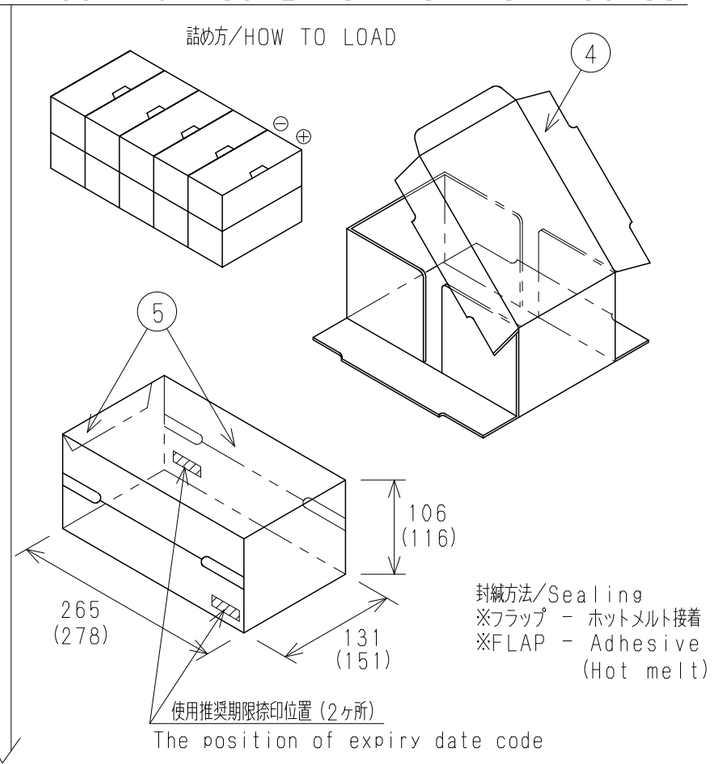
○ 2コシュリンクパック/2PCS SHRINK PACK



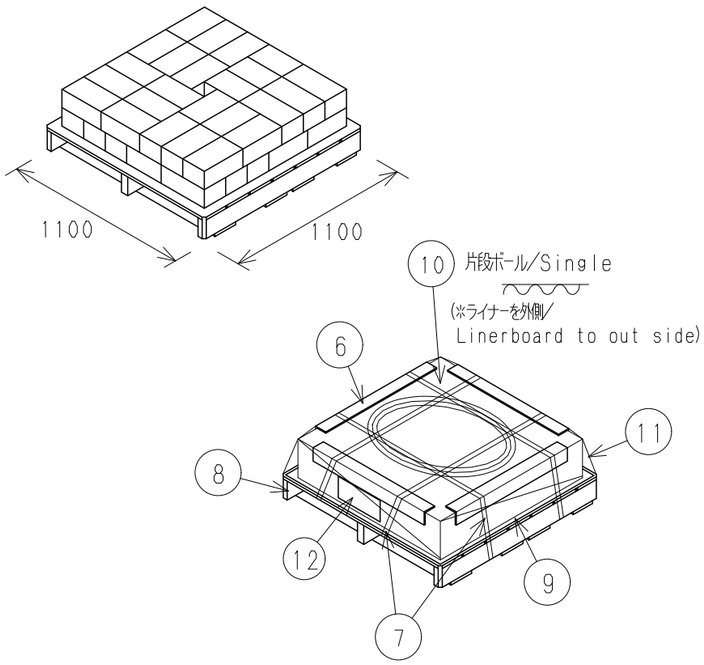
○ 10コ入化粧箱/DISPLAY BOX FOR 10PCS



○ 100コ入外装箱/OUTER CARTON FOR 100PCS



○4，800コ（48ケース）積みパレット梱包 /4，800PCS PALLET



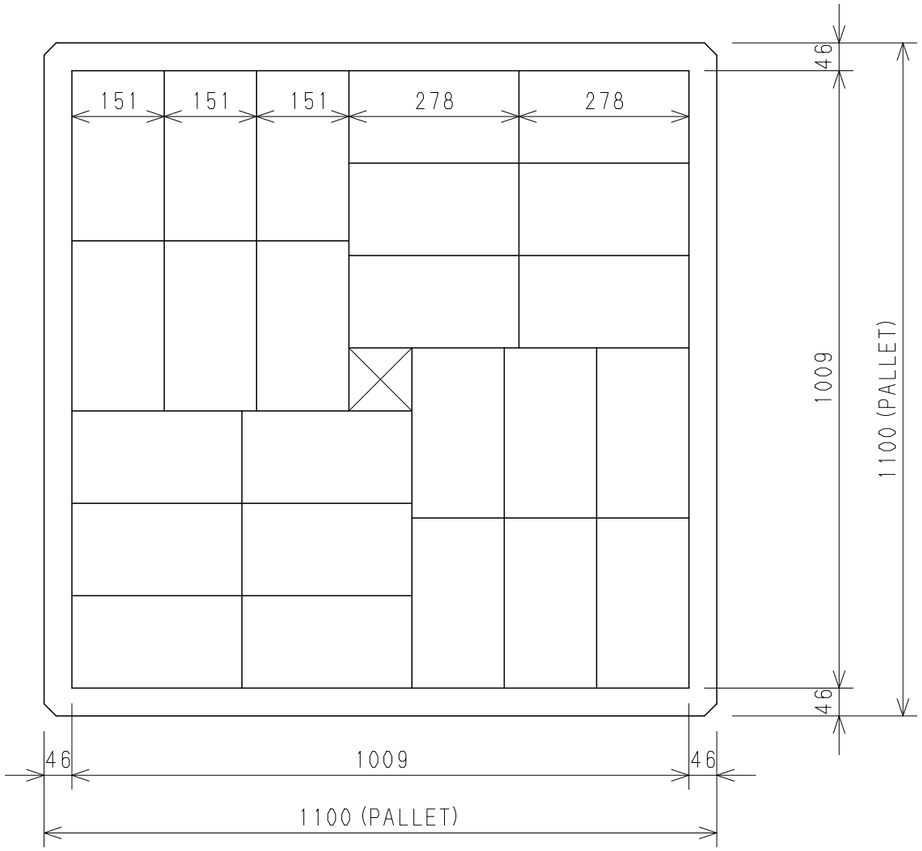
記号 SYMBOL	年月日 DATE	訂正などの履歴 RECODE OR REVISION	訂印 SIG.	検印 CHE.
制定	2019. 3. 13	パレット品番輸出仕様 ご承認用図面として/Drawing	和田	中田

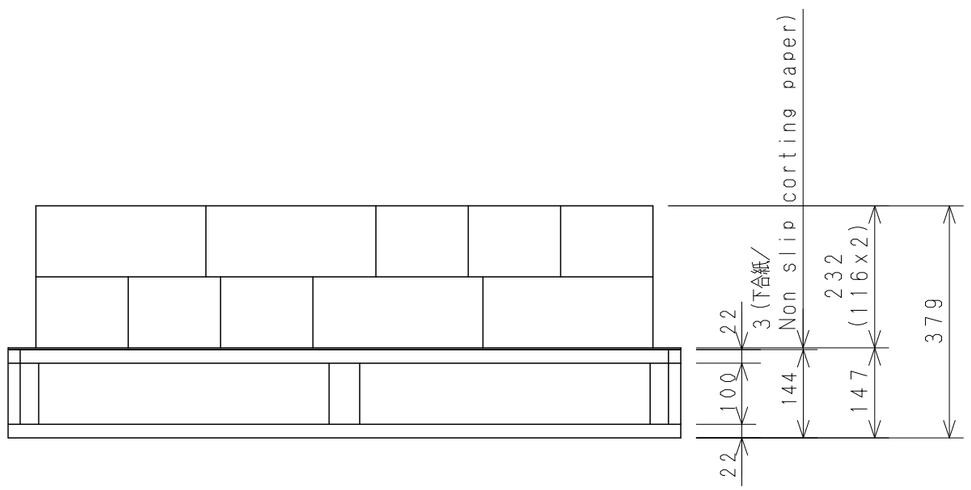
部品番号 P. NUMBER	部品名/材料 P. NAME/MATERIAL	数 量 QUANTITIES
①	製品/Product (LR14)	4，800
②	シュリンクフィルム（無地）/Shrink film ペット/PET	(62.23×180) ×2，400
③	10コ入化粧箱/Display box for 10PCS コートボール紙/Board paper	480
④	100コ入外装箱/Outer carton for 100PCS A フルート/A Flute	48
⑤	接着（ホットメルト）/Adhesive	5g×48
⑥	コーナーガード（上面）/Top corner guard	4
⑦	PPバンド/P. P Belt	12m
⑧	パレット/Pallet (1100×1100×144)	1
⑨	下台紙（滑り止めシート）/Non slip coating sheet	1
⑩	パレット用天面シート（片面段ボール）/ Single faced corrugated fiberboard	1
⑪	ストレッチフィルム/Strech film	15m
⑫	パレットマークラベル/Pallet mark label	1

製品品番 Product No.	LR14XW/2SKXA								
質 量 WEIGHT	N. W. 307. 2 (Kg)	G. W. 323. 0 (Kg)	Σ. W. 343. 0 (Kg)						
m³	1. 10 × 1. 10 × 0. 379 = 0. 45859 (m³)								
注 記 REMARK	1. 箱の寸法は、内寸を示す。( ) 内は、参考外寸を示す。 2. 詳細は、各部品図面参照の事。 3. 設計及びスペックは、予告なく変更することがある。 1. Inside dimensions are designated about box. ( ) shows outside dimensions. 2. Refer to the attached sheet for the detail. 3. Design and specification are subject to change without notice.								
図 名 D. NAME	単2形/2コシュリンクパック 4，800コ積みパレット梱包仕様書 SIZE "D" 2S SPECIFICATION SHEET OF PACKING FOR 4，800PCS								
CAD登録番号 C. NUMBER	LR14_2SKX XW S，A								
図面番号 D. NUMBER	2-2S10KA100DW48P_T，AL0A								
設計 DESIGN		製図 DRAWN	K. Wada 2021. 10. 15	検図 CHECK	S. Nakata 2021. 10. 15		承認 APPROVAL	T. Kato 2021. 10. 15	

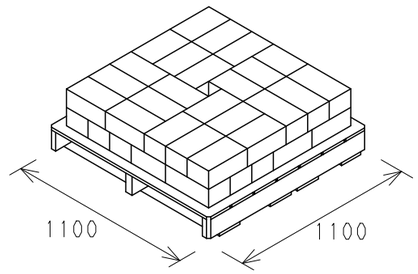
符号/Sym.	年月日/Date	訂　正　な　ど　の　履　歴　/　Revision	記印/Signed	検印/CHKD
作 図	2019. 3.25	パレット品番輸出仕様/Drawing	和田	中田

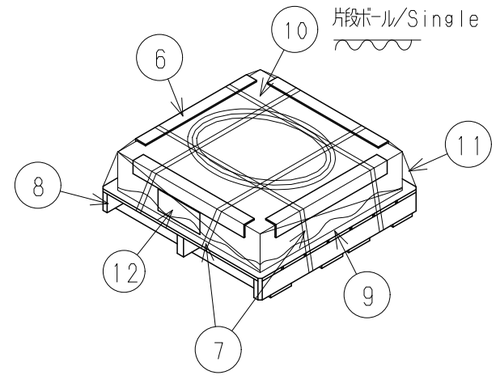
○ 積み方/HOW TO LOAD





○ 48ケース(4,800コ)積パレット梱包/PALLET FOR 48 BOXES





6	コーナーガード(上面)/Top corner guard
7	PPバンド/P.P Belt
8	パレット/Pallet (1100×1100×144)
9	滑り止めシート/Non slip coating sheet
10	パレット用天面シート(片面段ボール)/ Single faced corrugated fiberboard
11	ストレッチフィルム/Streth Film
12	パレットマークラベル/Pallet mark label

(注記)
1. 詳細は、各部品図面参照の事。
2. 設計及びスペックは、予告なく変更することがある。

(ANNOTATION)
1. REFER TO THE ATTACHED SHEET FOR THE DETAIL.
2. DESIGN AND SPECIFICATION ARE SUBJECT TO CHANGE WITHOUT NOTICE.

梱包明細 PACKING LIST			
	パレット積数 COUNT	1段	24(ケース) × 2(段) = 48ケース
	積載重量 PACKING	N.W(Kg) 1ケース当り	6.40(Kg) × 48ケース= 307.2Kg
		G.W(Kg) 1ケース当り	6.73(Kg) × 48ケース= 323.04Kg
		Σ.W(Kg)	・ 323.04Kg + 20.0Kg(パレット重量) = 343.04Kg
	容積(m³)		・ 1.10(m) × 1.10(m) × 0.379(m) = 0.45859(m³)

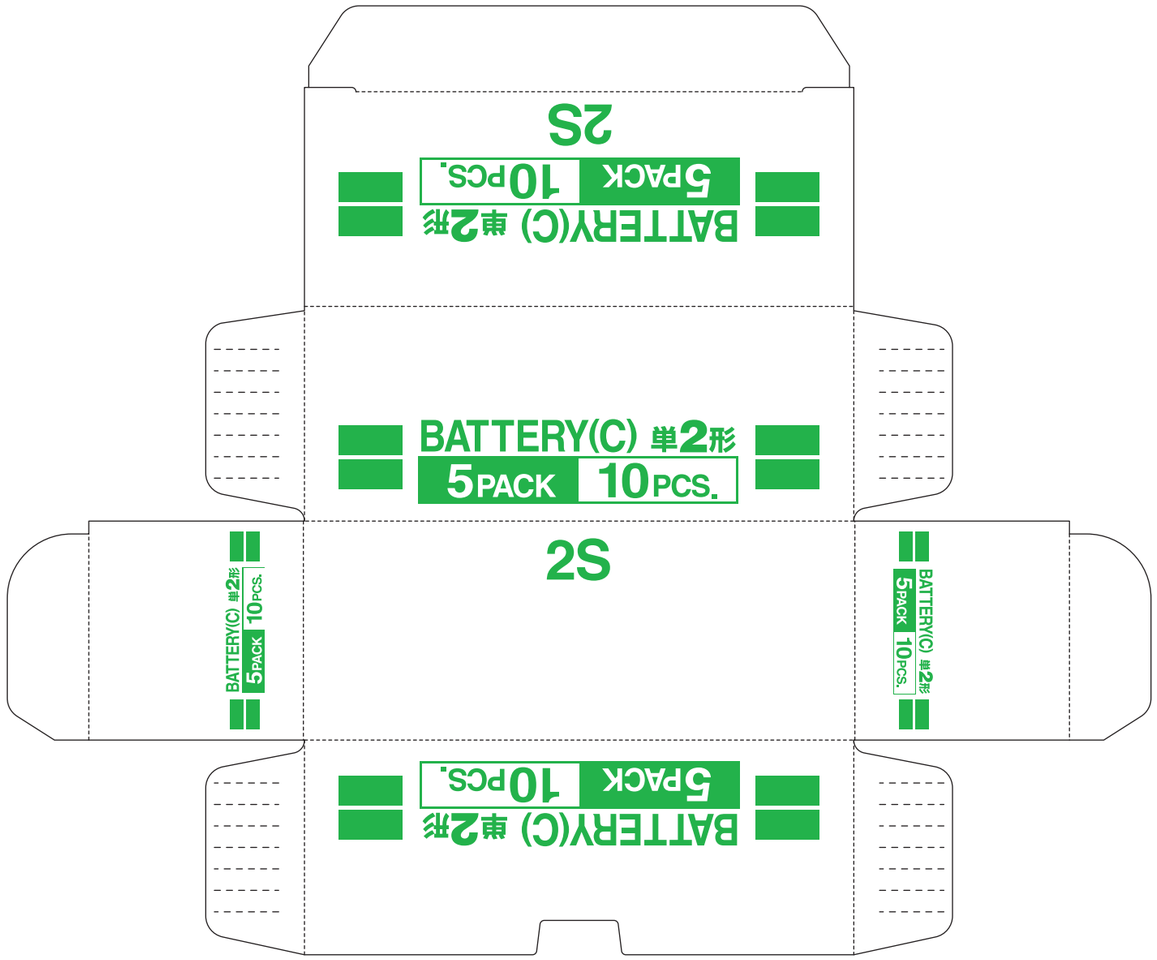
単品重量 g/PC	64g
製品品番 Product Number	LR14XW/2SKXA

図名 D.Name	単2形/2コシュリンクパック 48ケース(4,800コ)積みパレット SIZE "C" 2S SPECIFICATION SHEET OF PACKING FOR 48 BOXES
CAD登録番号 C.No	LR14_2SKX XW P,A
図面番号 M.No	LR14_2SKX XW 1100,24X2_T
部品番号 P.NO	

設計 DSGND.		製図 DRWN.	K.Wada 2021.10.15	検図 CHKD.	S.Nakata 2021.10.15	承認 APRVD.	T.Kato 2021.10.15

Panasonic Energy　　3rd Angle System　　Unit:mm　　(様式:2021.10.1)

符号/SYMBOL	年月日/DATE	訂正などの履歴 /RECORD OR REVISION	記印/SIGNED	検印/CHECKED
△5	2021.10.15	材質変更/Material Change	M.Tano	S.Makata



本図面は、現物とは若干、色調が異なります。/ ACTUAL COLOR IS DIFFERENT FROM THAT IN THIS SHEET.

(単位/Unit : mm)

符号表示位置/ THE POSITION OF DATE CODE	—
絶縁リング 又は 端子板/ DIVORCE RING OR TERMINAL BASE	—
符号/ CODE	・製造符号 / PRODUCTION CODE ・使用推奨期限(年)/ BEST USED BEFORE(Years) ・先付符号(年)/ EXPIRY CODE(Years) ・ユーザー専用符号/ USER'S SPECIFIC CODE ・符号なし / NO PRODUCTION CODE

印刷使用色及び番号/ NECESSARY COLOR AND NUMBER FOR PRINT	
1	ｸﾞﾘｰﾝ/Green(PANTONE3405C)
2	OY-710混合ニス/Varnish
3	
4	
5	
6	
7	
8	
9	
10	

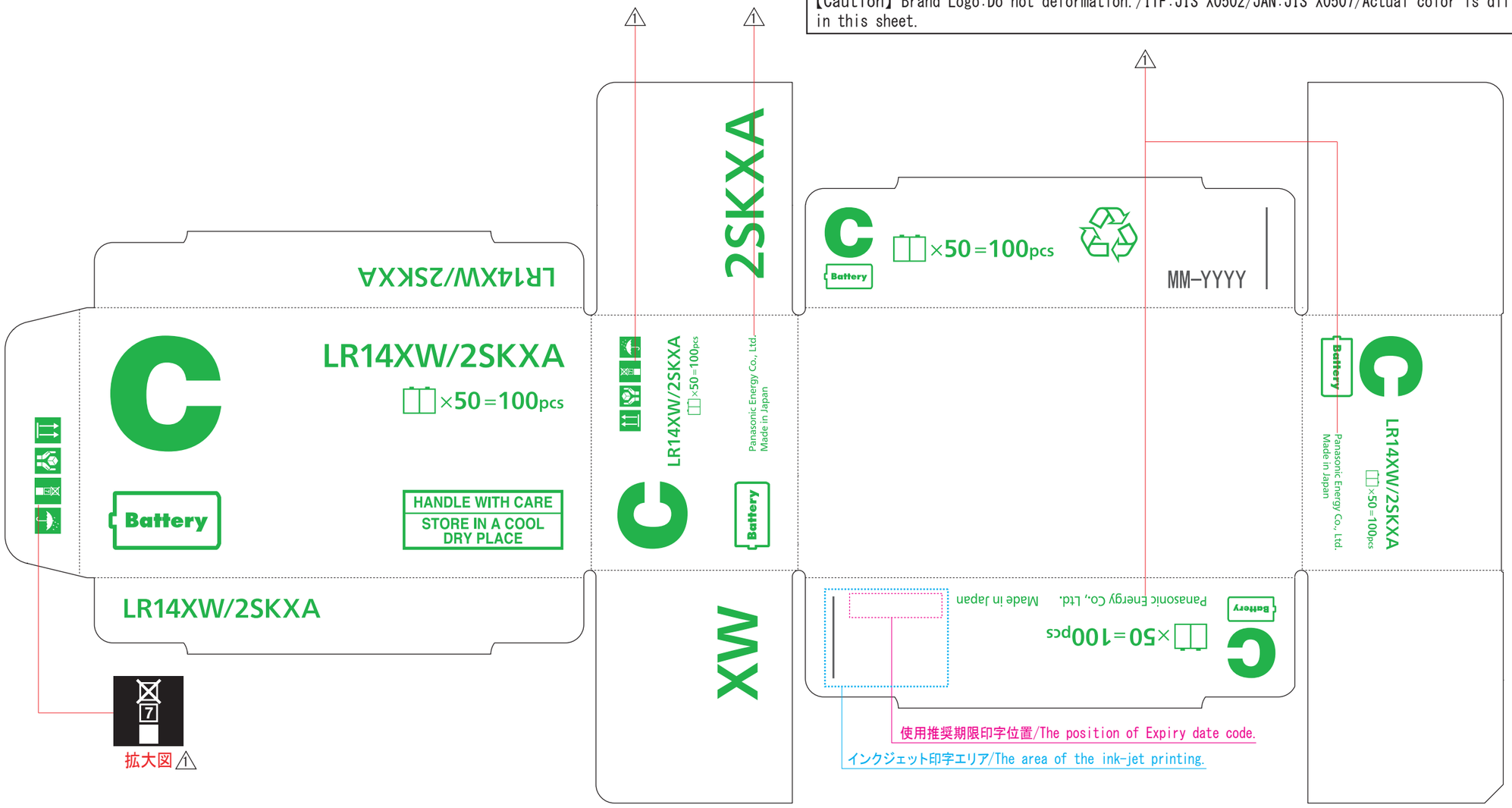
AL	LR14/2ST	△5コートボール /BOARD PAPER	S=70%	印刷/PRINTING	
記号/SYMBOL	品番 / MODEL NUMBER	材質 / MATERIAL	倍率/MAGNIFICATION	処理・加工 / PROCESS	記事 / REMARK

名称 NAME	LR14/2ST CASE10 トッキ	図名/ DRAWING NAME	化粧箱 /DISPLAY BOX
工場 / FACTORY	JAPAN	図番/NUMBER	
設計 DESIGN	M.Kawai 2015.10.01	製図 DRAWING	M.Tano 2021.10.15
検図 CHECK	S.Makata 2021.10.15	承認 APPROVAL	T.Kato 2021.10.15
部品番/ PART NUMBER	BAM7AF05890A_T		

Panasonic Energy Drawing of Graphics (様式:2021.10.01)

符号/SYMBOL	年月日/DATE	訂正などの履歴 /RECORD OR REVISION	記印/SIGNED	検印/CHECKED
△1	2021.10.15	荷扱いマーク変更、社名変更、部品品番変更(BAM7AA27120A→BAM7AA27120B)/Cargo handling mark change, company name change,Part number change.	M.Tano	S.Makata

【注意】ブランドロゴ：変形不可 /ITF:JIS X0502/JAN:JIS X0507/ 本図面は、現物とは若干、色調が異なります。
【Caution】Brand Logo:Do not deformation./ITF:JIS X0502/JAN:JIS X0507/Actual color is different from that in this sheet.



本図面は、現物とは若干、色調が異なります。/ ACTUAL COLOR IS DIFFERENT FROM THAT IN THIS SHEET.

（単位/Unit：mm）

使用推奨期限の付与方法/Control of Expiry date code 例/Example	
生産年月/Production date	表示内容/Indication on body
2021年10月/October, 2021	10-2026
2021年11月/November, 2021	11-2026
2021年12月/December, 2021	12-2027
2022年1月/January, 2022	01-2027
ご注意/Attention　切替単位：年12回/Frequency：Twelve times per a year	

符号表示位置/THE POSITION OF DATE CODE	—
絶縁リング 又は 端子板/DIVORCE RING OR TERMINAL BASE	—
符号/CODE	~~製造符号 / PRODUCTION CODE~~ ~~・使用推奨期限（ 5 年）/ BEST USED BEFORE（ 5 Years）~~ ~~先付符号（ 年）/ EXPIRY CODE（ Years）~~ ~~ユーザー専用符号/ USER'S SPECIFIC CODE~~ ~~符号なし / NO PRODUCTION CODE~~

印刷使用色及び番号/NECESSARY COLOR AND NUMBER FOR PRINT	
1	グリーン/GREEN D-110くさ
2	
3	インクジェット印字：黒/Black
4	
5	
6	
7	
8	
9	
10	

AL	LR14XW/2SKXA	Aフルート/A FLUTE	S=40%	印刷/PRINTING	
記号/SYMBOL	品番 / MODEL NUMBER	材質 / MATERIAL	倍率/MAGNIFICATION	処理・加工 / PROCESS	記事 / REMARK

名称/NAME	LR14XW/2SKXA PC100	図名/DRAWING NAME	外装箱/OUTER CARTON
工場 / FACTORY	JAPAN	図番/NUMBER	
設計/DESIGN	M.Kawai 2016.04.21	部品番/PART NUMBER	△1BAM7AA27120B_T
製図/DRAWING	M.Tano 2021.10.15		
検図/CHECK	S.Makata 2021.10.15		
承認/APPROVAL	T.Kato 2021.10.15		