



DICOM Conformance Statement
Fuji Medical Dry Imager
DRYPIX 2000

February 2007
3rd Edition

Revision History

Revision	Date	Revision Description
1st Edition	June 2006	
2nd Edition	December 2006	
3rd Edition	February 2007	Description on 10" × 12" (25cm × 30cm) film is added. Corporate name is changed.

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1 Introduction

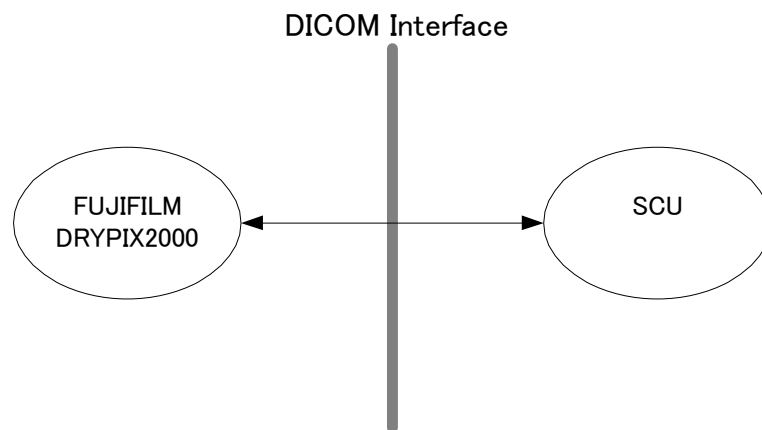
This document provides the DICOM conformance statement for the FUJIFILM DRYPIX2000 product.

2 Implementation Model

The FUJIFILM DRYPIX2000 is an Application Entity which provides the services of a DICOM Print Management Service Class.

2.1 Data Flow Diagram

The FUJIFILM DRYPIX2000 receives images from a DICOM Print Management Service Class User, and prints them.



2.2 Functional Definitions of Application Entities

The FUJIFILM DRYPIX2000 provides the DICOM Print Management Service Class support required to print images from one or more SCUs. The following functionality is supported:

- DICOM Association Management
- Management of DICOM Film Sessions, Film Boxes and Image Boxes
- Print Job Status Tracking
- Image Buffering
- Printing
- Printer Status Tracking

2.3 Sequencing of Real World Activities

Not applicable for Real World Activities.

3 Application Entity Specification

As the SCP, the DRYPIX 2000 conforms to the following DICOM SOP Classes¹.

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
Print Job SOP Class	1.2.840.10008.5.1.1.14
Basic Annotation Box SOP Class	1.2.840.10008.5.1.1.15
Presentation LUT SOP Class (Supplement 22)	1.2.840.10008.5.1.1.23
Print Queue Management SOP Class (Supplement 13)	1.2.840.10008.5.1.1.26

¹ The following correction proposals are applied: CP16, 19, 20, 35, 49, 55, 56, 80, 81, 85, 94, 108, 173

4 Association

4.1 Association Establishment Policies

General

- The SCU AE attempts to initiate a new Association for each print session.
- Only the SCU AE shall release an Association.
- The Association may be aborted by the SCU or the SCP.
- The Maximum PDU Size for the PDUs offered by the SCP equals 32 Kbytes.

Number of Associations

Maximum 10 associations at a time. Further associations will be rejected with the reason 'busy'.

Asynchronous Nature

Not support negotiation of multiple outstanding transactions.

Implementation ID information

Implementation Class UID is 1.2.392.200036.9125.5001.1

4.2 Association Initiation

This application does not initiate any DICOM associations.

4.3 Association Acceptance Policy

This application accepts an association.

Associated Real-World Activity

When an association is established, one of the following activities may occur.

- 1)The SCU instructs the printing of a set of images. The SCP prints the set of images.
- 2)The SCU requires the status of print job or the printer. The SCP will respond with it.
- 3)The SCU sends a verification request. The SCP will respond with it.

Proposed Presentation Contexts

The following transfer syntax is acceptable.

Table-1

Name	UID
DICOM Implicit VR Little Endian	1.2.840.10008.1.2

The following presentation contexts are acceptable.

No.	Abstract Syntax		Transfer syntax	Role	Extended Negotiation
	Name	UID			
1	Verification SOP Class	1.2.840.10008.1.1	Table-1	SCP	None
2	Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Table-1	SCP	None

3	Print Job SOP Class	1.2.840.10008.5.1.1.14	Table-1	SCP	None
4	Printer SOP Class	1.2.840.10008.5.1.1.16	Table-1	SCP	None
5	Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	Table-1	SCP	None
6	Print Queue Management SOP Class	1.2.840.10008.5.1.1.26	Table-1	SCP	None
7	Basic Annotation Box SOP Class	1.2.840.10008.5.1.1.15	Table-1	SCP	None

The 3rd and 4th SOP Classes that have been negotiated so far only by combined with the 2nd SOP Class are now permitted to be negotiated with no combination. They may inhibit SCP's resource consumption rather than when negotiated being combined with the 2nd SOP Class, resulting in improving SCP's processing speed (CP-81). The 6th SOP Class can be negotiated either separately or being combined with any other.

□SOP Specific Conformance

- DRYPIX2000 may return the following error codes in response to any message received.

Code	Status	Meaning
0122H	Failure	SOP class not supported
0211H	Failure	Unrecognized operation : the command is not supported for the SOP class (e.g. N_CREATE for Image Box SOP class)

- For 0107H, 0116H and B604H Warning Status, it is possible to disregard them and individually specify so that they are processed same as the "Success:(0000H)".
- It is possible to specify so that the N-EVENT-REPORT message is not issued.
- When Image Position (2020,0010) in N-SET of Basic Grayscale Image BOX is specified more than once, the last specification becomes active. N-ACTION for Basic Film Session or Basic Film Box will be normally stopped, and not resulting in C604H error (CP-80).
- In Failure status, "Attribute List" will return no message.
- In Success/Warning status in N-CREATE, all supported attributes included in the instance that has been created as "Attribute List" will be returned.
- In Success/Warning status in N-SET, items that have been properly updated in the items specified by the SCU will be returned message as the "Attribute List". However, Preformatted grayscale image sequence in the Basic Grayscale Image Box will not be returned.
- When Status (0000,0900)=0107H (Attribute list error), Attribute Identifier List (0000,1005) will not be returned.
- In certain Failure/Warning statuses, the Error Comment (0000,0902) will be returned. See Appendix D.

5 Verification SOP Class (1.2.840.10008.1.1)

The DRYPIX2000 provides standard conformance to the DICOM Verification Service Class as an SCP. Upon receipt from an SCU of a verification of communication request, the DRYPIX2000 will issue a confirmation.

6 Basic Film Session SOP Class (1.2.840.10008.5.1.1.1)

The following DIMSE services are supported.

- N-CREATE
- N-SET
- N-DELETE
- N-ACTION

6.1 N-CREATE

□ Description

- Creates a Basic Film Session SOP instance and initializes it using the value sent from SCU (default if no value is sent from the SCU).
- Creating instance of this SOP is required before creating the Basic Film Box SOP instance.
- An Association may have only one Basic Film Session SOP instance at a time. To use several Basic Film Session SOP instances, delete older ones and create new ones.

Attribute information

Tag	Name	Usage	Supported	Default
2000,0010	Number of Copies	U/M	1-99	Config
2000,0020	Print Priority	U/M	HIGH, MED, LOW	Config
2000,0030	Medium Type	U/M	BLUE FILM	Config
2000,0040	Film Destination	U/M	(Not supported)	
2000,0050	Film Session Label	U/U	Up to 64 characters	Null string
2000,0060	Memory Allocation	U/U	1-131072	None
2100,0160	Owner ID	U/U		None

※ (2000,0060) is used for reserving Disk space in KByte.

□ Status

- If value of each element has not been specified, use default value and return “Success:0000H”.
- Create a UID using SCP and return “Success:0000H”, if there is no Affected SOP Instance UID (0000,1000) or it has been sent in length zero.
- If element values exceed specified range, use defaults and return “Warning:0116H”.
- “Success:0000H” or “Failure:0110H” will be returned if a film type that is not loaded in the device has been specified using Medium Type (2000,0030), changing the film type to the loaded type by Config setting.
- In Warning status, Basic Film Session SOP instance is produced and successive process is possible.
- In Failure status, Basic Film Session SOP instance will not be created.

Code	Status	Meaning
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0000H	Success	Film session successfully created. The actual values assigned to attributes are returned.
0107H	Warning	Attribute list error. Attributes not applicable to the Basic Film Session SOP instance have been specified.
0110H	Failure	Processing failure. An attempt was made to create 2nd Basic Film Session SOP instance.
0110H	Failure	Requested medium type does not exist on printer.
0116H	Warning	Attribute Value Out of Range.
0117H	Failure	Invalid Object Instance. Returned if a given instance UID has violated the UID construction rules.
0213H	Failure	Resource Limitation. The requested allocation can temporarily not be provided.

□ Remarks

The following attributes of Basic Film Session IOD are not open to an SCU. These attributes are set up in an SCP when a Basic Film Box SOP instance is created

Tag	Name
2000,0500	Referenced Film Box Sequence
0008,1150	>Referenced SOP Class UID
0008,1155	>Referenced SOP Instance UID

6.2 N-SET

□ Description

- Update attributes of the Basic Film Session SOP instance. It is possible to change all attributes that can be specified using N-CREATE.

□ Status

- For a Warning status, attributes will not be updated remaining in previous values. Processing can be continued.
- For a Failure status, attributes will not be updated, remaining in previous values. Processing can be continued.

Code	Status	Meaning
0000H	Success	Specified attributes of the SOP instance have been updated. The actual values assigned to attributes are returned.
0107H	Warning	Attribute list error. Attributes that cannot be applied to the Basic Film Session SOP instance have been specified.
0110H	Failure	Requested medium type does not exist on printer.
0116H	Warning	Attribute Value out of Range.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.
0213H	Failure	Resource Limitation. The requested allocation can temporarily not be provided.

6.3 N-DELETE

□ Description

- Deletes all information hierarchies rooted in the Basic Film Session SOP instance.
Release the assigned resources.

□ Status

Code	Status	Meaning
0000H	Success	The specified SOP Instance hierarchy has been deleted.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.

6.4 N-ACTION

□ Description

- After copying all information hierarchies rooted in the Basic Film Session SOP Instance, prints all relevant films. If one more Film Boxes are included, Printing order will, for example, be as follows, 1-1-2-2-3-3.
- Film Size IDs (2010,0050) of all Basic Film Box SOP Instances related with the Basic Film Session SOP Instance should be the same. If different Ids are included, returns “Failure:0110H” and prints no films. In such a case, N-ACTION should be issued to each Basic Film Box SOP Instance.
- The SCU will continuously be able to update and/or operate all information hierarchies rooted in the Basic Film Session SOP Instance, which will not affect print operation as instructed by N-ACTION.
- Creates the Print Job SOP Instance and returns its UID, if agreed according to Association set-up.

□ Parameters

Action Type Name = PRINT, Action Type ID = 1

Tag	Attribute	Usage	Comment
2100,0500	Referenced Print Job Sequence	-/MC	If Print Job SOP Class or Print Queue Management SOP Class is negotiated.
0008,1150	>Referenced SOP Class UID	-/MC	If Print Job SOP Class is negotiated.
0008,1155	>Referenced SOP Instance UID	-/MC	If Print Job SOP Class is negotiated.
2100,0010	>Print Job ID	-/MC	If Print Queue management SOP Class is negotiated.

□ Status

Code	Status	Meaning
0000H	Success	Films in the film session have been queued for printing.
0110H	Failure	Processing failure. Basic Film Box SOP Instance of different film sizes are present.
0115H	Failure	Invalid Argument Value. Returned if the Action Type provided by the SCU is not recognized.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given

		SOP Class.
B602H	Warning	Film Session SOP instance hierarchy does not contain Image Box SOP Instance. Empty page will not be printed.
C600H	Failure	Film Session SOP Instance hierarchy does not contain Film Box SOP Instances.
C601H	Failure	Unable to create Print Job SOP Instance. Print queue if full.

7 Basic Film Box (1.2.840.10008.5.1.1.2)

The following DIMSE services are supported.

- N-CREATE
- N-SET
- N-DELETE
- N-ACTION

7.1 N-CREATE

□ Description

- Creates a Basic Film Box SOP instances and initializes it using the values sent from the SCU (default if no value is sent from the SCU).
- Initialization is effected so as to link “2000,0500” (Referenced Film Box Sequence) of Basic Film Session SOP instance to the created Basic Film Box SOP instance.
- Creates Basic Grayscale Image Box SOP Instances as many as necessary in accordance with (2010,0010)(Image Display Format) and specifies them to (2010,0510)(Referenced Image Box Sequence) of the Basic Film Box SOP instance. Returns these values to the SCU as a Response.
- Creates Basic Annotation Box SOP Instances as many as necessary in accordance with (2010,0030)(Annotation Display Format ID), and specifies (2010,0520) (Referenced Basic Annotation Box Sequence). Returns these values to the SCU as a Response. If the use of a Basic Annotation Box SOP Class is not agreed upon, no Basic Annotation Box SOP Instance is created².

□ Attribute information

(Basic Film Box Presentation Module)

Tag	Name	Usage	Supported	Default
2010,0010	Image Display Format	M/M	See Appendix A.	
2010,0030	Annotation Display Format ID	U/U	FORMAT1 FORMAT2 FORMAT3 FORMAT4	Config
2010,0040	Film Orientation	U/M	PORTRAIT LANDSCAPE	Config
2010,0050	Film Size ID	U/M	14INX17IN 10INX14IN 10INX12IN 8INX10IN	Config
2010,0060	Magnification Type	U/M	CUBIC NONE (No magnification/ reduction)	Config
2010,0080	Smoothing type	U/U	SHARP SMOOTH	Config

² No matter whether this situation arises, Annotation Text for which Configuration setup is completed will be recorded onto films.

			MEDIUM	
2010,0100	Border Density	U/U	BLACK WHITE 0-300	Config
2010,0110	Empty Image Density	U/U	(Not supported)	
2010,0120	Min Density	U/U	0-300	Config
2010,0130	Max Density	U/M	0-300	Config
2010,0140	Trim	U/U	YES NO	Config
2010,0150	Configuration Information	U/M	See Appendix B.	Config
2010,015E	Illumination	U/MC		Config
2010,0160	Reflective Ambient Light	U/MC		Config
2020,0050	Requested Resolution ID	U/U	(Not supported) STANDARD	

(Basic Film Box Relationship Module)

Tag	Name	Usage	Supported	Default
2010,0500	Referenced Film Session Sequence	M/M		
0008,1150	>Referenced SOP Class UID	M/M		
0008,1155	>Referenced SOP instance UID	M/M		
2010,0510	Referenced Image Box Sequence	-/M		
0008,1150	>Referenced SOP Class UID	-/M		
0008,1155	>Referenced SOP instance UID	-/M		
2010,0520	Referenced Basic Annotation Box Sequence	-/MC		
0008,1150	>Referenced SOP Class UID	-/MC		
0008,1155	>Referenced SOP instance UID	-/MC		
2050,0500	Referenced Presentation LUT Sequence	U/MC		
0008,1150	>SOP Class UID	U/MC		
0008,1155	>SOP Instance UID	U/MC		

※Specifying low densities in (2010,0100), (2010,0120), or (2010,0130) will affect film base densities.

□ Status

- If an attribute specified for the Basic Film Box SOP instance, but not supported by the DRYPIX2000, returns “Warning:0107H”.
- Returns “Success:000H” with the UID created using the SCP, if no Affected SOP Instance UID (0000,1000) is present or it has been sent in length 0.

- Returns “Success:0000H” using the defaults, if values of “Usage SCU=U” elements have not been specified.
- Returns “Warning:0116H” using the defaults, if values of “Usage SCU=U” elements exceed the range.
- When a size that has not been loaded was specified for Film Size ID (2010,0050), “Warning:0116H” or “Failure (an error code can be set up)” will be returned by Config setting accordingly.
- When an unloaded combination has been specified in Medium Type (2000,0030) and Film Size ID (2010,0050), “Failure:0110H” will be returned.
- Returns “Failure:0120H” if values of “Usage SCU=M” elements have not been specified. This also applies for when no values have been sent as the Data Set.
- Returns “Failure:0106H” if values of “Usage SCU=M” elements exceed the range.
- Even for the Warning status, a Basic Film Box SOP instance will be created, enabling to continue with processing.
- For the Failure status, no Basic Film Box SOP instance will be created. At this time, Affected SOP Instance UID (0000,1000) will not be returned.

Code	Status	Meaning
0000H	Success	Film Box is successfully created. The actual values assigned to attributes are returned.
0106H	Failure	Invalid Attribute Value. Mandatory attribute had illegal value.
0107H	Warning	Attribute list error. An attribute not supported by the DRYPIX2000 has been specified. An attribute not applicable to the Basic Film Box SOP instance has been specified.
0110H	Failure	Processing failure. Returned if the number of film boxes exceeds 32.
0111H	Failure	Duplicate SOP instance. Instance UID given is already in use.
0116H	Warning	Attribute Value Out of Range.
0117H	Failure	Invalid Object Instance. Returned if a given instance UID has violated the UID construction rules.
0120H	Failure	Missing attribute. Returned if a mandatory attribute is missing.
B605H	Warning	Requested Min Density or Max Density outside of printer’s operating range. The printer will use its respective minimum or maximum density value instead.

7.2 N-SET

□ Description

- Updates Basic Film Box SOP Instance attributes created the last.

□ Attributes that can be updated

Tag	Name	Usage	Supported
2010,0060	Magnification Type	U/M	CUBIC NONE

			(No magnification/reduction)
2010,0080	Smoothing type	U/U	SHARP SMOOTH MEDIUM
2010,0100	Border Density	U/U	BLACK WHITE 0-300
2010,0110	Empty Image Density	U/U	(Not supported)
2010,0120	Min Density	U/U	0-300
2010,0130	Max Density	U/M	0-300
2010,0140	Trim	U/U	YES NO
2010,0150	Configuration Information	U/M	See Appendix B.
2010,015E	Illumination	U/MC	
2010,0160	Reflective Ambient Light	U/MC	
2050,0500	Referenced Presentation LUT Sequence.	U/MC	
0008,1150	>SOP Class UID	U/MC	
0008,1155	>SOP Instance UID	U/MC	

□ Status

- Returns “Failure : 0120H” if no values have been sent as a Data Set.
- For the Warning status, attributes will not be updated, with values remaining unchanged. Processing can be continued.
- For the Failure status, attributes will not be updated, with values remaining unchanged. Processing can be continued.

Code	Status	Meaning
0000H	Success	Specified attributes of the SOP instance have been updated. The actual values assigned to attributes are returned.
0107H	Warning	Attribute list error. An attribute not supported by the DRYPIX2000 has been specified. An attribute not applicable to the Basic Film Box SOP instance has been specified.
0110H	Failure	Processing failure. The instance created the last was not specified.
0116H	Warning	Attribute Value Out of Range.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.
0120H	Failure	Missing attribute. Returned if no Data Set is provided by the SCU.
B605H	Warning	Requested Min Density or Max Density outside of printer’s operating range. The printer will use its respective minimum or maximum density value instead.

7.3 N-DELETE

□ Description

- Deletes the Basic Film Box SOP Instance hierarchy created the last.

- Deletes the relevant part of (2000,0500)(Referenced Film Box Sequence) of the Basic Film Session SOP Instance.

□ Status

Code	Status	Meaning
0000H	Success	The specified SOP Instance hierarchy has been deleted.
0110H	Failure	Processing failure. The instance created the last was not specified.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.

7.4 N-ACTION

□ Description

- After copying all information hierarchy rooted in the specified Basic Film Box SOP Instance, prints all relevant films.
- The SCU will continuously be able to update and/or operate all information hierarchies rooted in the Basic Film Box SOP Instance, which will not affect print operation as instructed by N-ACTION.
- Creates the Print Job SOP Instance and returns its UID, if agreed according to Association set-up.

□ Parameters

Action Type Name = PRINT, Action Type ID = 1

Tag	Attribute	Usage	Comment
2100,0500	Referenced Print Job Sequence	-/MC	If Print Job SOP Class OR Print Queue Management SOP Class is negotiated.
0008,1150	>Referenced SOP Class UID	-/MC	If Print Job SOP Class is negotiated.
0008,1155	>Referenced SOP Instance UID	-/MC	If Print Job SOP Class is negotiated.
2100,0010	>Print Job ID	-/MC	If Print Queue management SOP Class is negotiated.

□ Status

Code	Status	Meaning
0000H	Success	Success is normally returned.
0115H	Failure	Invalid Argument Value. Returned if the Action Type provided by the SCU is not recognized.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.
B603H	Warning	Film Box SOP Instance hierarchy does not contain Image Box SOP Instances (empty page). Empty page will not be printed.
C602H	Failure	Unable to create Print Job SOP Instance. Print queue if full.

8 Basic Grayscale Image Box (1.2.840.10008.5.1.1.4)

The following DIMSE service is supported.

- N-SET

8.1 N-SET

□ Description

- Updates attribute information of Basic Grayscale Image Box SOP instance belonging to Film Box SOP instance created the last.
- (2010,0060)(Magnification Type), (2010,0080)(Smoothing Type) and (2010,0150)(Configuration Information) will prevail over values specified for the Film Box SOP instance.
- It is possible to erase image by sending (2020,0110) (Preformatted Grayscale Image Sequence) in length 0.
- When (2020,0030) (requested image size) is specified, (2010,0060)(magnification type) is unconditionally processed as CUBIC.
- When two or more images are set in the same Image position (2020,0010), the last one takes effects.

□ Attributes that can be Specified

(Basic Image Box Presentation module)

Tag	Name	Usage	Supported	Default
2020,0010	Image position	M/M	1-x (See Appendix A.)	None
2020,0020	polarity	U/M	NORMAL REVERSE	Config
2010,0060	magnification type	U/U	CUBIC NONE (No magnification/reduction)	Basic Film box Value
2010,0080	smoothing type	U/U	SHARP SMOOTH MEDIUM	Basic Film box Value
2010,0120	Min Density	U/U	0-300	Basic Film box Value
2010,0130	Max Density	U/U	0-300	Basic Film box Value
2010,0150	Configuration Information	U/U	See Appendix B.	Basic Film box Value
2020,0030	requested image size	U/U	See Appendix A.	Config
2020,0040	Requested Decimate/Crop Behavior	U/U	DECIMATE,CROP,FAI L	Config
2020,0110	preformatted grayscale image sequence	M/M		
0028,0002	>samples per pixel	M/M	1	None
0028,0004	>photometric interpretation	M/M	MONOCHROME1 MONOCHROME2	None

0028,0010	>rows	M/M	1-7000	None
0028,0011	>columns	M/M	1-7000	None
0028,0034	>pixel aspect ratio	MC/M	R/C(Vertical/Horizontal) R,C=1-65535	1/1
0028,0100	>bits allocated	M/M	8, 16	None
0028,0101	>bits stored	M/M	8, 10, 12	None
0028,0102	>high bit	M/M	7, 9, 11	None
0028,0103	>pixel representation	M/M	0	None
7fe0,0010	>pixel data	M/M	(any)	None

(Basic Image Box relationship module)

Tag	Name	Usage	Supported	Default
2020,0130	referenced image overlay box sequence ^(note)	U/MC	(Not supported)	
0008,1150	>referenced sop class uid	MC/M	(Not supported)	
0008,1155	>referenced sop instance uid	MC/M	(Not supported)	
2050,0500	Referenced Presentation LUT Sequence	U/U		
0008,1150	>SOP Class UID	U/U		
0008,1155	>SOP Instance UID	U/U		

□ Status

- Returns “Success:0000H” using the defaults, if values of “Usage SCU=U” elements have not been specified.
- Returns “Warning:0116H” using defaults, if values of “Usage SCU=U” exceed the range.
- Returns “Failure:0120H” if values of “Usage SCU=M” elements have not been specified. This also applies for when no values have been sent as the Data Set.
- Return “Failure:0106H” if values of “Usage SCU=M” elements exceed the range.
- Return “Failure:0106H” with regard to (7fe0,0010)(pixel data), if the data length calculated from (0028,0010)(rows), (0028,0011)(columns) and (0028,0100)(bits allocated) does not agree with that of (7fe0,0010)(pixel data).
- For the Warning status, updates attributes. Processing can be continued.
- For the Failure status, does not update attributes, remaining the same. Processing can be continued.
- When (2020,0040)(Requested Decimate/Crop Behavior) is CROP and the image should be reduced because the image is larger than the frame, cuts off image edges by matching the image with the image frame at their center.
- Returns “Warning:0116H” using maximum size when (2020,0030)(requested image size) exceeds the Max size that is determined by (2010,0010)(Image Display Format), (2010,0050)(Film Size ID), and (2020,0010)(Image position), if (2020,0040)(Requested

Decimate/Crop Behavior) is not specified or specified by DECIMATE. For CROP status, returns “Warning:B609H” and cuts off the image edges that exceed maximum size of image frame by matching the image with the image frame at their center after magnifying or reducing to the size specified by Requested Image Size. For the Fail status, returns “Failure:C603H” and refuses to receive images.

- See Appendix E for the maximum size of (2020,0030)(requested image size) to be determined by (2010,0010)(Image Display Format), (2010,0050)(Film Size ID), and (2020,0010)(Image position), and for the behavior to be specified by (2020,0040)(Requested Decimate/Crop Behavior).
- When “NONE” has been specified for (2010,0060)(Magnification Type), see Appendix E for the maximum size of (0028,0010)(rows) and (0028,0011)(columns) to be determined by (2010,0010)(Image Display Format), (2010,0050)(Film Size ID), (2020,0010)(Image position), and (2010,0040)(Film Orientation), and for the behavior to be specified by (2020,0040)(Requested Decimate/Crop Behavior).

Code	Status	Meaning
0000H	Success	Image instance has been updated successfully.
0106H	Failure	Invalid attribute value. Mandatory attribute has illegal value.
0107H	Warning	Attribute list error.
0110H	Failure	Processing failure. The Basic Grayscale Image Box SOP instance not belonging to the Film Box SOP instance created the last has been specified.
0116H	Warning	Attribute Value Out of Range.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.
0120H	Failure	Missing attribute Returned if a mandatory attribute of the Data Set, provided by the SCU AE, is missing.
B604H	Warning	Image size is larger than image box size, the image has been demagnified.
B605H	Warning	Requested Min Density or Max Density outside of printer’s operating range. The printer will use its respective minimum or maximum density value instead.
B609H	Warning	Image size is larger than the Image Box size. The Image has been cropped to fit.
B60AH	Warning	Image size or Combined Print Image size is larger than the Image Box size. Image or Combined Print Image has been decimated to fit.
C603H	Failure	Image size is larger than image box size.
C605H	Failure	Insufficient memory in printer to store images.

9 Print JOB SOP class (1.2.840.10008.5.1.1.14)

The following DIMSE services are supported.

- N-EVENT-REPORT
- N-GET

9.1 Overview

- One Print Job SOP Class instance represents one or more film print jobs belonging to the same film session and is possible to monitor execution of the job.
- The Print Job SOP Class instance will be created as requested by N-ACTION for Film Session SOP Class or Film Box SOP Class.
- The Print Job SOP Class instance will be deleted at the completion of printing job or when Failure status results.

9.2 N-EVENT-REPORT

□ Description

- When the status changes, N-EVENT-REPORT will be issued to the Association that created the relevant instance. (No notice will be issued if the Association has been released.)
- After FAILURE or DONE results, delete the instance if the relevant confirmation has been received from the SCU.

□ Event Types and Attributes

Event type Name	Event type ID	Attribute	Tag	Usage
PENDING	1	Print Job ID	2100,0010	U/MC
		Printer Name	2110,0030	U/U
		Film Session Label	2000,0050	U/U
		Execution Status Info	2100,0030	U/M
PRINTING	2	Print Job ID	2100,0010	U/MC
		Printer Name	2110,0030	U/U
		Film Session Label	2000,0050	U/U
		Execution Status Info	2100,0030	U/M
DONE	3	Print Job ID	2100,0010	U/MC
		Printer Name	2110,0030	U/U
		Film Session Label	2000,0050	U/U
		Execution Status Info	2100,0030	U/M
FAILURE	4	Print Job ID	2100,0010	U/MC
		Printer Name	2110,0030	U/U
		Film Session Label	2000,0050	U/U
		Execution Status Info	2100,0030	U/M

※The print Job ID (2100,0010) will be returned only when the Print Queue Management SOP Class is negotiated.

9.3 N-GET

□ Description

- Returns instance-specified attribute information, with the assigned UID. Returns all attribute information if Data Set has not come.

□ Attributes that can be Obtained

Tag	Name	Usage	Supported
2100,0020	Execution Status	U/M	PENDING PRINTING DONE FAILURE
2100,0030	Execution Status Info	U/M	Execution Status is DONE NORMAL Execution Status is PRINTING NORMAL Execution Status is FAILURE UNKNOWN Execution Status is PENDING See Appendix C.
2000,0020	Print Priority	U/M	HIGH, MED, LOW
2100,0040	Creation Date	U/U	
2100,0050	Creation Time	U/U	
2110,0030	Printer Name	U/U	Up to 16 characters (set at installation)
2100,0070	Originator	U/U	

□ Status

- Returns “Warning: 0107H” if an attribute defined as an attribute of Basic Film Box SOP instance, but not supported by the DRYPIX2000, has been specified.

Code	Status	Meaning
0000H	Success	Print Job information is returned.
0107H	Warning	Attribute list error. An attribute not applicable to the Print Job SOP instance has been specified.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.

1 0 Printer SOP Class (1.2.840.10008.5.1.1.16)

The following DIMSE services are supported.

- N-EVENT-REPORT
- N-GET

1 0.1 Overview

- Used to represent the printer and to obtain printer status.
- At time of printer startup, the SCP automatically creates instance and waits the “well known SOP instance UID.” The value will be “1.2.840.10008.5.1.1.17.”

1 0.2 N-EVENT-REPORT

□ Description

- When the printer status changes, N-EVENT-REPORT will be issued to all associated SCUs for using the relevant printer.

□ Event Types and Attributes

Event type Name	Event type ID	Attribute	Tag	Usage
Normal	1			
Warning	2	Printer Name	2110,0030	U/U
		Printer Status Info	2110,0020	U/M
Failure	3	Printer Name	2110,0030	U/U
		Printer Status Info	2110,0020	U/M

1 0.3 N-GET

□ Description

- Returns printer-instance-specified attribute information if the Data Set has not come.

□ Attribute that can be Obtained

Tag	Name	Usage	Supported
2110,0010	printer status	U/M	NORMAL WARNING FAILURE
2110,0020	printer status info	U/M	Printer Status is NORMAL NORMAL Printer Status is WARNING See Appendix C. Printer Status is FAILURE UNKNOWN
2110,0030	printer name	U/U	Up to 16 characters (set at installation)
0008,0070	manufacture	U/U	FUJIFILM Corporation
0008,1090	manufacture model name	U/U	DRYPIX
0018,1000	device serial number	U/U	Not supported
0018,1020	software versions	U/U	
0018,1200	date of last calibration	U/U	Not supported

0018,1201	time of last calibration	U/U	Not supported
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※(0018,1020) are represented by the “major.minor” format. The “major” represent an alphabet from A to Z and the “minor”, a two-digit decimal number from 00 to 99.

□ Status

- Returns “Warning: 0107H” if an attribute of defined as an attribute of the Basic Film Box SOP instance, but not supported by the DRYPIX2000, has been specified.

Code	Status	Meaning
0000H	Success	Printer information is returned.
0107H	Warning	Attribute list error. An attribute not supported by the DRYPIX2000 has been specified. An attribute not applicable to the Print Job SOP instance has been specified.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.

1 1 Presentation LUT (1.2.840.10008.5.1.1.23)

The following DIMSE services are supported.

- N-CREATE
- N-DELETE

1 1.1 N-CREATE

□ Description

- Creates Presentation LUT SOP instance and initializes it according to values sent by the SCU.
- To combine the instance thus created to the Basic Film Session SOP instance, Basic Film Box SOP instance and Basic Grayscale Image Box SOP instance, it is necessary to set the UID of this instance for each instance using the N-CREATE or the N-SET function.
- Setting using Presentation LUT prevail those using the Configuration Information (2010,0150).

□ Attribute information

Tag	Name	Usage	Supported	Default
2050,0010	Presentation LUT Sequence	MC/M		None
0028,3002	>LUT Descriptor	MC/M	The first value represents the number of elements that (0028,3006) includes. The second value represents the value of pixels to be mapped to the first element of (0028,3006). The third value represents the valid bit numbers of (0028,3006). Ignore this value.	None
0028,3003	>LUT Explanation	U/U	Any value is OK. Ignore this value.	None
0028,3006	>LUT Data	MC/M		None
2050,0020	Presentation LUT Shape	MC/M	IDENTITY LIN OD	None

※ (2050,0020) is valid only when (2050,0010) has not been specified. When both have been specified, make sure to use (2050,0010).

□ Status

- If values of each element of “Usage SCU=U” have not been specified, uses default values and returns “Success: 0000H”.
- If values of each element of ”Usage SCU=MC” have not been specified although needed, returns “Failure:0120H”. This applies also no Data Set has come.
- If values of each element of “Usage SCU=M” exceed the range, returns “Failure:

0106H”.

- The LUT Data (0028,3003) length must be twice as large as the first value of LUT Descriptor (0028,3002). For other than this, returns “Failure: 0106H” to the LUT Descriptor (0028,3002).
- For a Failure case, the Presentation LUT SOP instance will not be created and the Affected SOP Instance UID (0000,1000) will not be returned.
- Returns “Warning:0116H” when an attempt was made to specify to the LUT Explanation (0028,3003) a character string that exceeds 64 characters.

Code	Status	Meaning
0000H	Success	Presentation LUT is successfully created.
0106H	Failure	Invalid attribute value. Mandatory attribute has illegal value.
0107H	Warning	Attribute list error.
0111H	Failure	Duplicate SOP instance. Instance UID given is already in use.
0116H	Warning	Attribute Value Out of Range.
0117H	Failure	Invalid Object Instance. Returned if a given instance UID has violated the UID construction rules.
0120H	Failure	Missing attribute Returned if a mandatory attribute of the Data Set, provided by the SCU AE, is missing.

1 1.2 N-DELETE

□ Description

- Delete the Presentation LUT SOP instance, which, however, cannot be deleted when it is referenced by the Basic Film Session SOP instance, Basic Film Box SOP instance and Basic Grayscale Image Box SOP instance.

□ Status

Code	Status	Meaning
0000H	Success	The specified SOP Instance has been deleted.
0110H	Failure	Processing failure. An attempt was made to delete an instance that has been referenced to.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.

1 2 Basic Annotation Box SOP Class (1.2.840.10008.5.1.1.15)

The following DIMSE service is supported.

- N-SET

1 2.1 N-SET

□ Description

- Updates the attribute information of Basic Annotation Box SOP instance belonging to Film Box SOP instance that was created the last.
- The Annotation already specified can be deleted if (2030,0020)(Text String) is specified with the length set to 0.
- When a multiple number of settings have been made to the same (2030,0010)(Annotation position), those made the last will be taken valid.

□ Attribute information

(Basic Annotation Presentation Module)

Tag	Name	Usage	Supported	Default
0008,0005	Specific Character Set	U/U	ISO_IR 6, ISO_IR 100, ISO_IR 13, ISO 2022 IR 13¥ISO 2022 IR 87	None (ISO_IR 6)
2030,0010	Annotation position	M/M	1 – 6 ³	None
2030,0020	Text String	U/M		NULL
2031,1020	Annotation Image Sequence	U/U		
0028,0002	>Samples Per Pixel	M/M	1	None
0028,0004	>Photometric Interpretation	M/M	MONOCHROME1 MONOCHROME2	None
0028,0010	>Rows	M/M	1-7000	None
0028,0011	>Columns	M/M	1-7000	None
0028,0034	>Pixel Aspect Ratio	MC/M	R¥C(Vertical¥Horizontal) R,C=1-65535	1¥1
0028,0100	>Bits Allocated	M/M	8,16	None
0028,0101	>Bits Stored	M/M	8,10,12	None
0028,0102	>High Bit	M/M	7,9,11	None
0028,0103	>Pixel Representation	M/M	0	None
7fe0,0010	>Pixel Data	M/M	(any)	None
2031,1021	Annotation Image Polarity	U/U	NORMAL REVERSE	None

When both 2030,0020 and 2031,1020 are specified, 2031,1020 will be used.

※”2031,1020 Annotation Image Sequence” is a Private tag to be used between Fuji equipment units. The description above is presented for the purpose of releasing necessary specifications to equipment units for connection to Fuji equipment, and not included in the Conformance Statement that will be on public view.

³ There are six Annotation BOX as follows. 1 : Top left, 2 : Top center, 3 : Top right, 4 : Bottom left, 5 : Bottom center, 6 : Bottom right. Character fonts will depend on configuration settings. Cut the end of a line if it is too long for printing.

□ Status

- When no values have been specified for each element of the “Usage SCU=U”, uses the defaults and returns “Success: 0000H”.
- When no values have been specified for each element of the “Usage SCU=M”, returns “Failure: 0120H”. This applies also when no Data Set has come.
- If values of each element of “Usage SCU=M” exceed the range, returns “Failure: 0106H”.
- For a Failure case, attributes will not be updated, with the values remaining the same as before. Processing can be continued.

Code	Status	Meaning
0000H	Success	Annotation Box instance has been updated successfully.
0106H	Failure	Invalid attribute value. Mandatory attribute has illegal value.
0107H	Warning	Attribute list error.
0110H	Failure	Processing failure. The Basic Annotation Box SOP instance not belonging to the Film box SOP instance that was created the last has been specified.
0116H	Warning	Attribute Value Out of Range.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.
0120H	Failure	Missing attribute Returned if a mandatory attribute of the Data Set, provided by the SCU AE, is missing.

1 3 Print Queue Management SOP Class (1.2.840.10008.5.1.1.26)

The following DIMSE services are supported.

- N-EVENT-REPORT
- N-GET
- N-ACTION
-

1 3.1 Overview

- Used for monitoring the Print Queue and the print job. Also used for deleting the print job and changing the order of job priority.
- When the printer is started up, the SCP automatically creates the Print Queue. As the “well known SOP instance UID”, this queue will be provided with the value of “1.2.840.10008.5.1.1.25”.
- Jobs remaining in the Print queue when the printer was shut down the last time will be automatically restored.

1 3.2 N-EVENT-REPORT

□ Description

- Notifies status changes in the print queue, issuing the N-EVENT-REPORT, when status actually changes, to all SCUs that have agreed on with regard to the Print Queue Management SOP Class.

□ Event Type

Event type Name	Event type ID	Description	Attribute	Tag	Usage
HALTED	1	Queue operation is halted	—	—	U/M
FULL	2	Queue is full	—	—	U/M
NORMAL	3	Queue is operational	—	—	U/M

1 3.3 N-GET

□ Description

- Acquires information on all print jobs included in the Print Queue. Information on a job that has been deleted from the Print Queue because the job processing was completed will not be returned.

□ Attributes that can be Obtained

Tag	Name	Usage	Supported
2120,0010	Queue Status	U/M	NORMAL FULL HALTED
2120,0050	Print Job Description Sequence	U/MC	
2100,0010	>Print Job ID	U/MC	
2100,0020	>Execution Status	U/MC	PENDING

			PRINTING DONE FAILURE
2100,0030	>Execution Status Info	U/MC	Execution Status is DONE NORMAL Execution Status is PRINTING NORMAL Execution Status is FAILURE UNKNOWN Execution Status is PENDING See Appendix C.
2100,0040	>Creation Date	U/U	
2100,0050	>Creation Time	U/U	
2000,0020	>Print Priority	U/MC	HIGH MED LOW
2100,0070	>Origin AE	U/U	
2100,0140	>Destination AE	U/U	
2110,0030	>Printer Name	U/MC	Up to 16 characters (set at installation)
2000,0040	>Film Destination	U/U	Not supported
2000,0050	>Film Session Label	U/U	
2000,0030	>Medium Type	U/U	BLUE FILM
2100,0170	>Number Of Films	U/U	
2120,0070	>Referenced Print Job Sequence	U/MC	
0008,1150	>>Referenced SOP Class UID	U/MC	
0008,1155	>>Referenced SOP Instance UID	U/MC	

□ Status

- Returns “Warning : 0107H” if an attribute not supported by the DRYPIX2000 has been specified, even though it is specified as the attribute of the Print Queue Management SOP instance.

Code	Status	Meaning
0000H	Success	Print Queue information is returned.
0107H	Warning	Attribute list error. An attribute that is not applied to the Print Queue Management SOP instance has been specified.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.

1 3.4 N-ACTION

□ Description

- Changes the order of priority for print jobs specified.
- Deletes print jobs specified.

□ Parameters

Action type	Action type ID	Description	Attribute	Tag	Usage
-------------	----------------	-------------	-----------	-----	-------

Name					
PRIORITIZE	1	Change priority of queue entry	Print Job ID	2100,0010	M/M
			Print Priority	2000,0020	M/M
			Owner ID	2100,0160	M/M
DELETE	2	Delete queue entry	Print Job ID	2100,0010	M/M
			Owner ID	2100,0160	M/M

□ Status

Code	Status	Meaning
0000H	Success	Operation successfully completed.
0106H	Failure	Invalid Attribute Value. Returned if illegal print job id is set.
0107H	Warning	Attribute list error. An attribute not supported by the DRYPIX2000 has been specified.
0115H	Failure	Invalid argument value. Returned if the Action type provided by the SCU is not recognized.
0119H	Failure	Class-Instance Conflict. Returned if the SOP class Instance UID is not defined for the given SOP Class.
0120H	Failure	Missing Attribute. Returned if a mandatory attribute of the Data Set, provided by the SCU AE, is missing.
C651H	Failure	Print queue is halted.
C652H	Failure	Mismatch of owner ID
C653H	Failure	Action failed because the job was in process.

1 4 Communication Profiles

1 4.1 Supported Communication Stacks

The DRYPIX2000 provides DICOM V3.0 TCP/IP Network Communication support as defined in Part 8 of the DICOM Standard.

1 5 Extensions / Specializations / Privatizations

SOP Class: Basic Grayscale Image Box

Attribute : bits stored (0028,0101)

10 bits stored is supported. DICOM only specifies 8 and 12 for number of bits stored.

Attribute : high bit (0028,0102)

High bit position 9th is supported. DICOM specifies 7th or 11th bit.

Attribute : magnification type (2010,0060)

If Requested Image Size (2020,0030) is specified, this SOP class will be processed unconditionally as a CUBIC.

General

After session has been established, initiates monitoring “time for data transmission timeout” set in Configuration. The timeout monitoring will be reset every time a piece of data is received from the SCU. The session closes when a data transfer timeout occurs.

Reserves the following attributes using the Basic Annotation Box SOP class function.

- (2031,1020)
- (2031,1021)

1 6 Configuration

Specifying the entire DRYPIX2000

- Host name
- IP Address
- Subnet Mask
- TCP Port number used by SCP
- AE title (the two types for standard density can be handled)
- Data transmission timeout
- Annotation Text & Font

Specifying for each SCU AE title (defaults are used for unregistered AEs)

- Whether 0107H status is effective or not
- Whether 0116H status is effective or not
- Whether B604H status is effective or not

- Whether N-EVENT-REPORT is effective or not
- Film substitution
- Whether data transmission is applied or not
- Whether Presentation LUT is applied or not
- Whether advanced film removal is applied or not
- Whether density (Max/Min Density) is specified or not
- Number of Copies (2000,0010)
- Medium Type (2000,0030)
- Film orientation (2010,0040)
- Film Size ID (2010,0050)
- Smoothing type (2010,0080)
- Border Density (2010,0100)
- Min Density (2010,0120)
- Max Density (2010,0130)
- Trim (2010,0140)
- Configuration Information (2010,0150)
- Polarity (2020,0020)
- Requested Decimate/Crop Behavior (2020,0040)
- Annotation Text & Font

1.7 Support of Extended Character Sets

For elements whose VR is SH, LO, ST, PN, LT or UT, there are cases where extended characters are used by specifying a range for extended characters to Specific Character Set (0008,0005).

A supported range of extended characters includes the following.

ISO_IR 6,

ISO_IR 100,

ISO_IR 13,

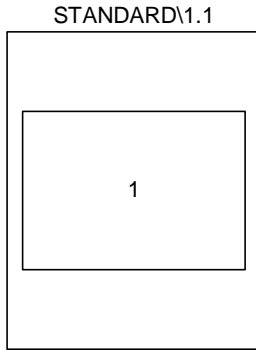
ISO 2022 IR 13¥ISO 2022 IR 87

Appendix A: Image Display Format (2010,0010)

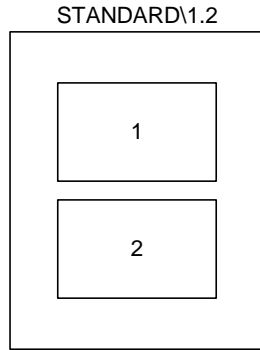
Image Position (2020,0010)

Requested Image Size (2020,0030)

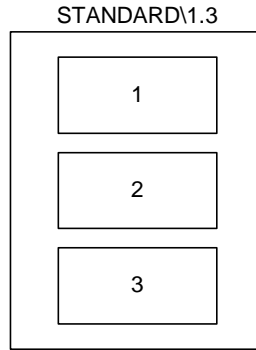
1. 14" x 17" (35cm x 43cm) PORTRAIT



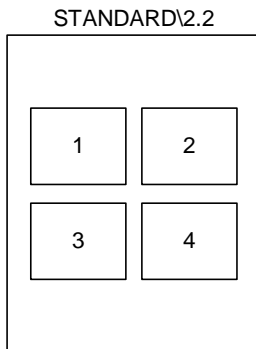
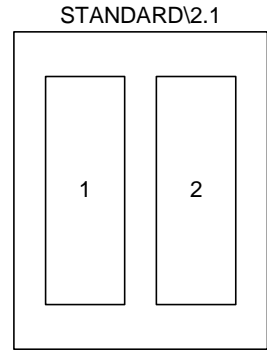
HP01



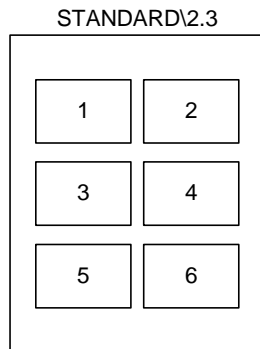
HP02



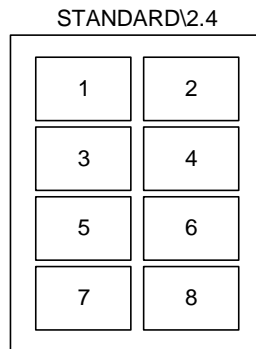
HP03



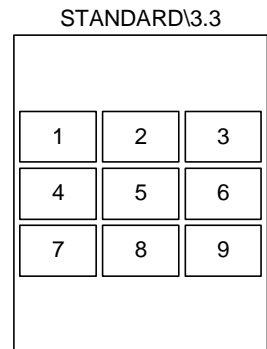
HP04



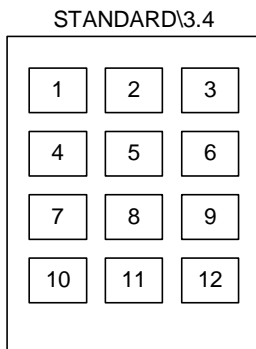
HP06



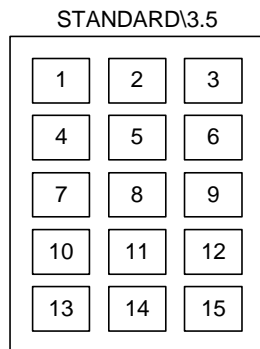
HP08



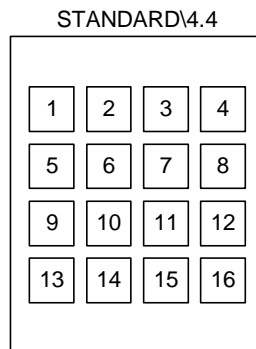
HP09



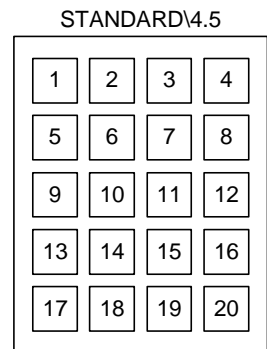
HP12



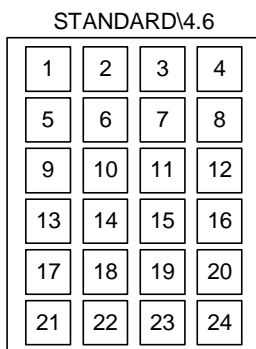
HP15



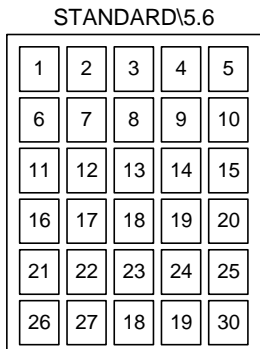
HP16



HP20

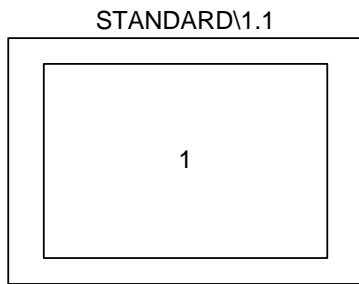


HP24

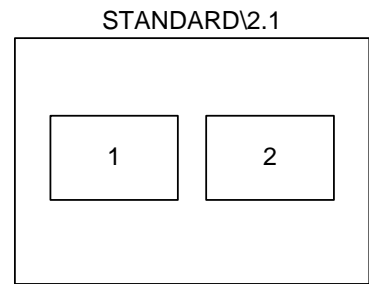
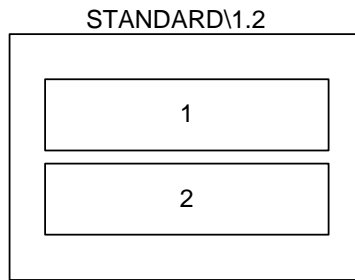


The other diagrams are omitted.
Refer to "14" x 17" Portrait" in the subsequent section for the relevant formats.

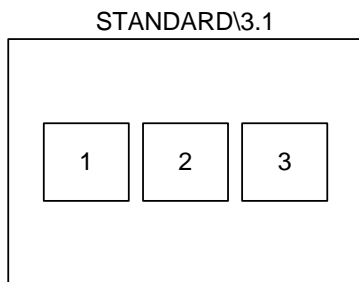
2. 14" x 17" (35cm x 43cm) LANDSCAPE



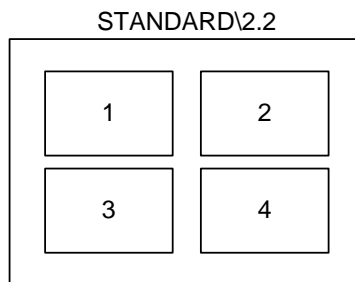
HL01



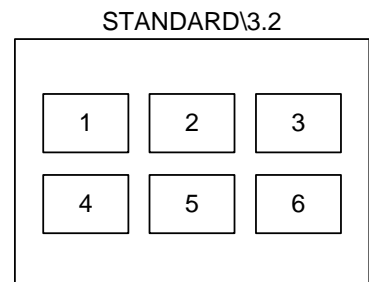
HL02



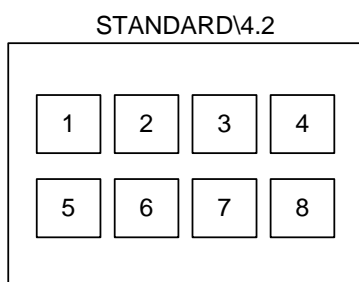
HL03



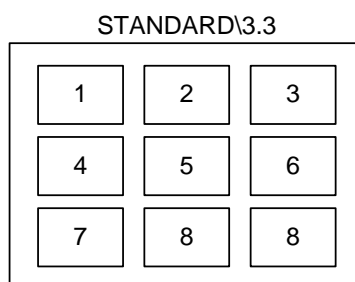
HL04



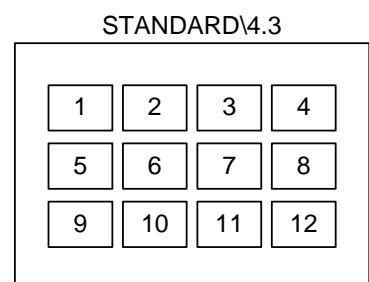
HL06



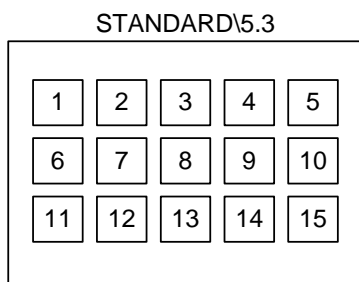
HL08



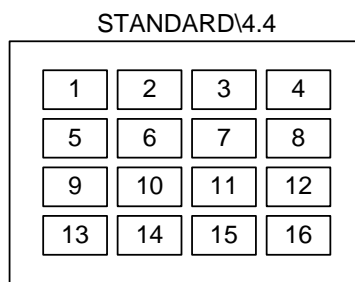
HL09



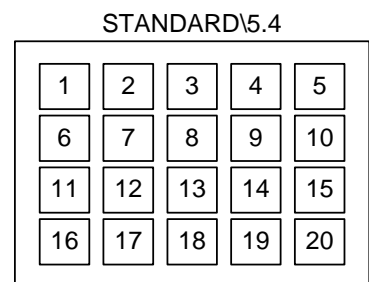
HL12



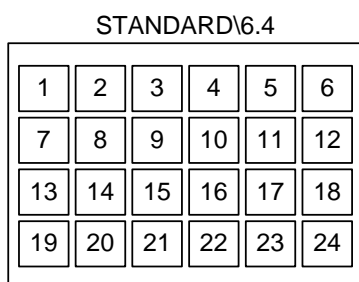
HL15



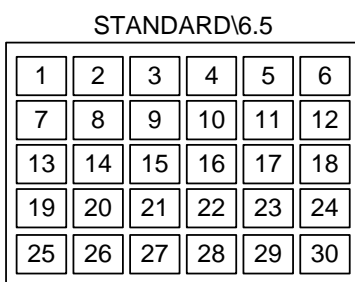
HL16



HL20

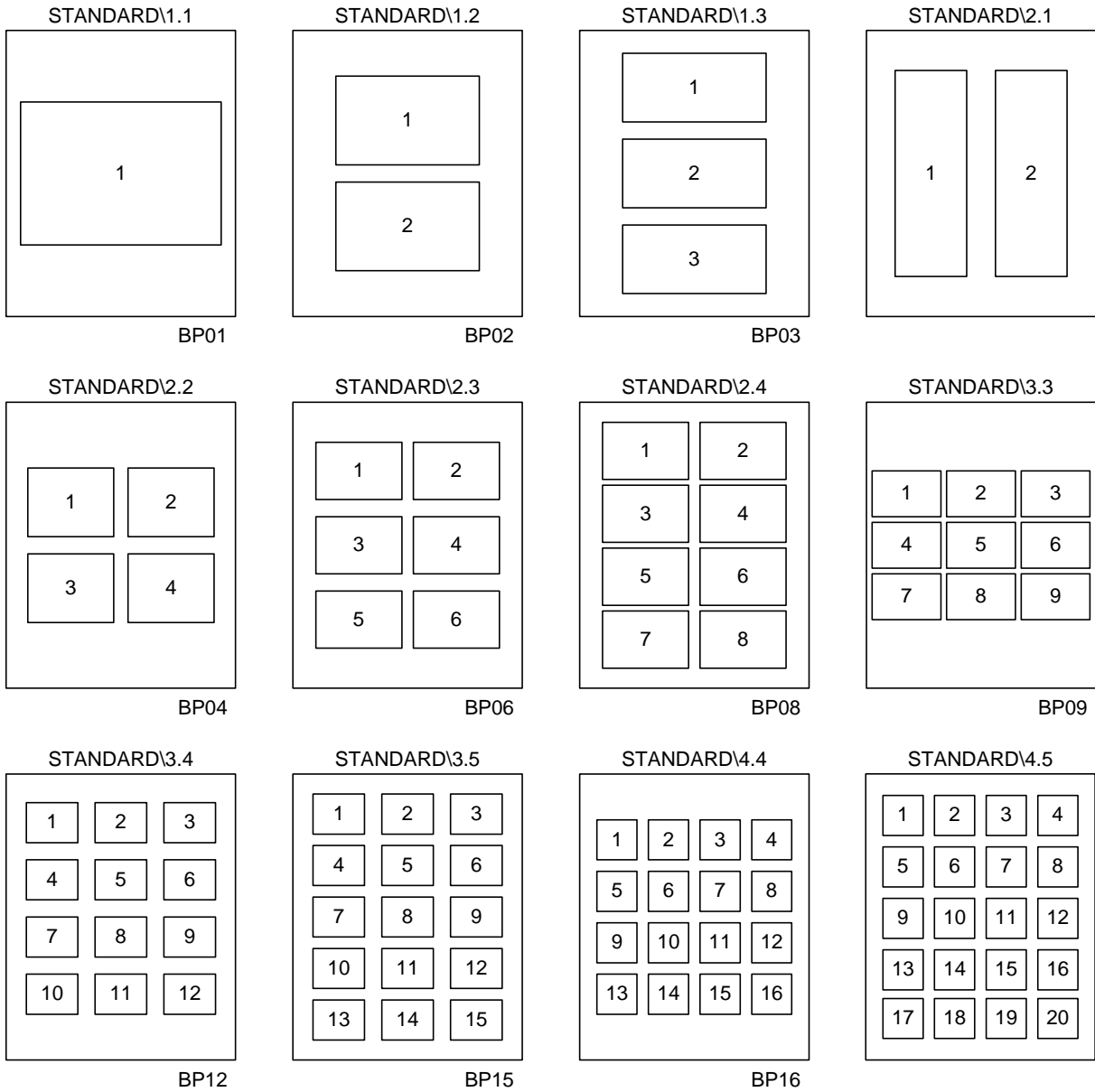


HL24



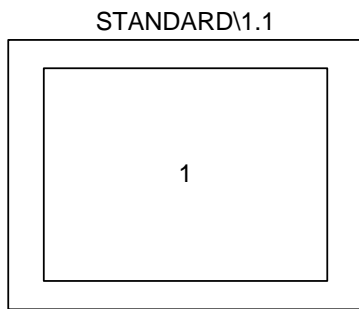
The other diagrams are omitted. Refer to "14" x 17" Landscape" in the subsequent section for the relevant formats.

3. 10" x 14" (26cm x 36cm) PORTRAIT

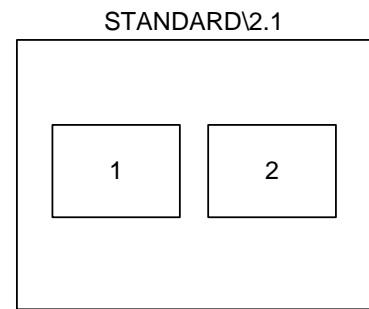
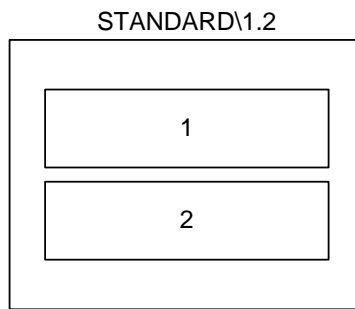


The other diagrams are omitted.
 Refer to "10" x 14" Portrait" in
 the subsequent section for the
 relevant formats.

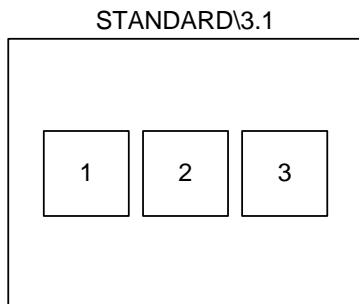
4. 10" x 14" (26cm x 36cm) LANDSCAPE



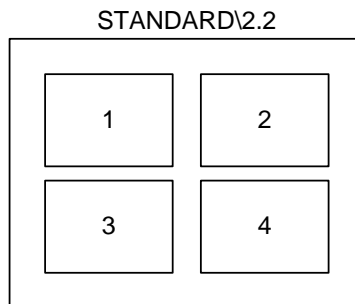
BL01



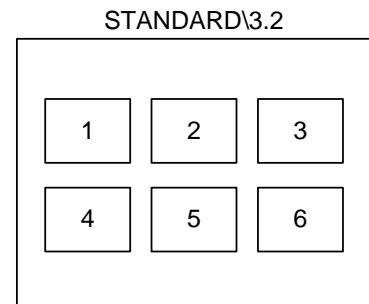
BL02



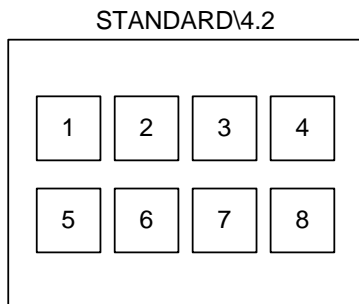
BL03



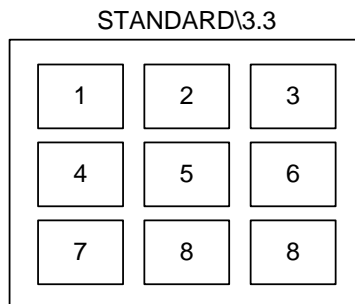
BL04



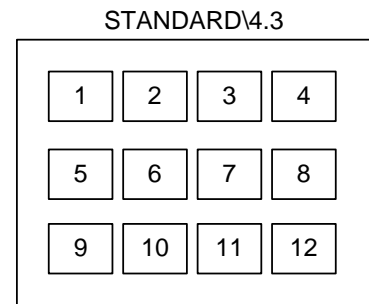
BL06



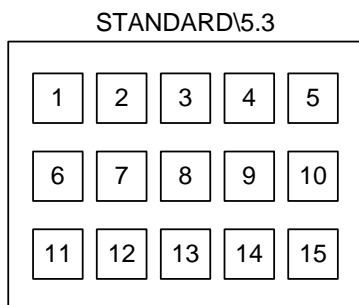
BL08



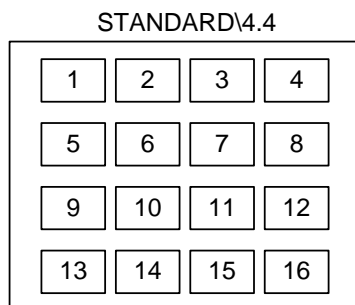
BL09



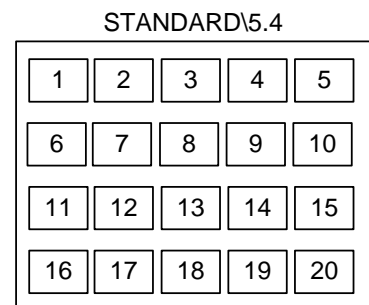
BL12



BL15

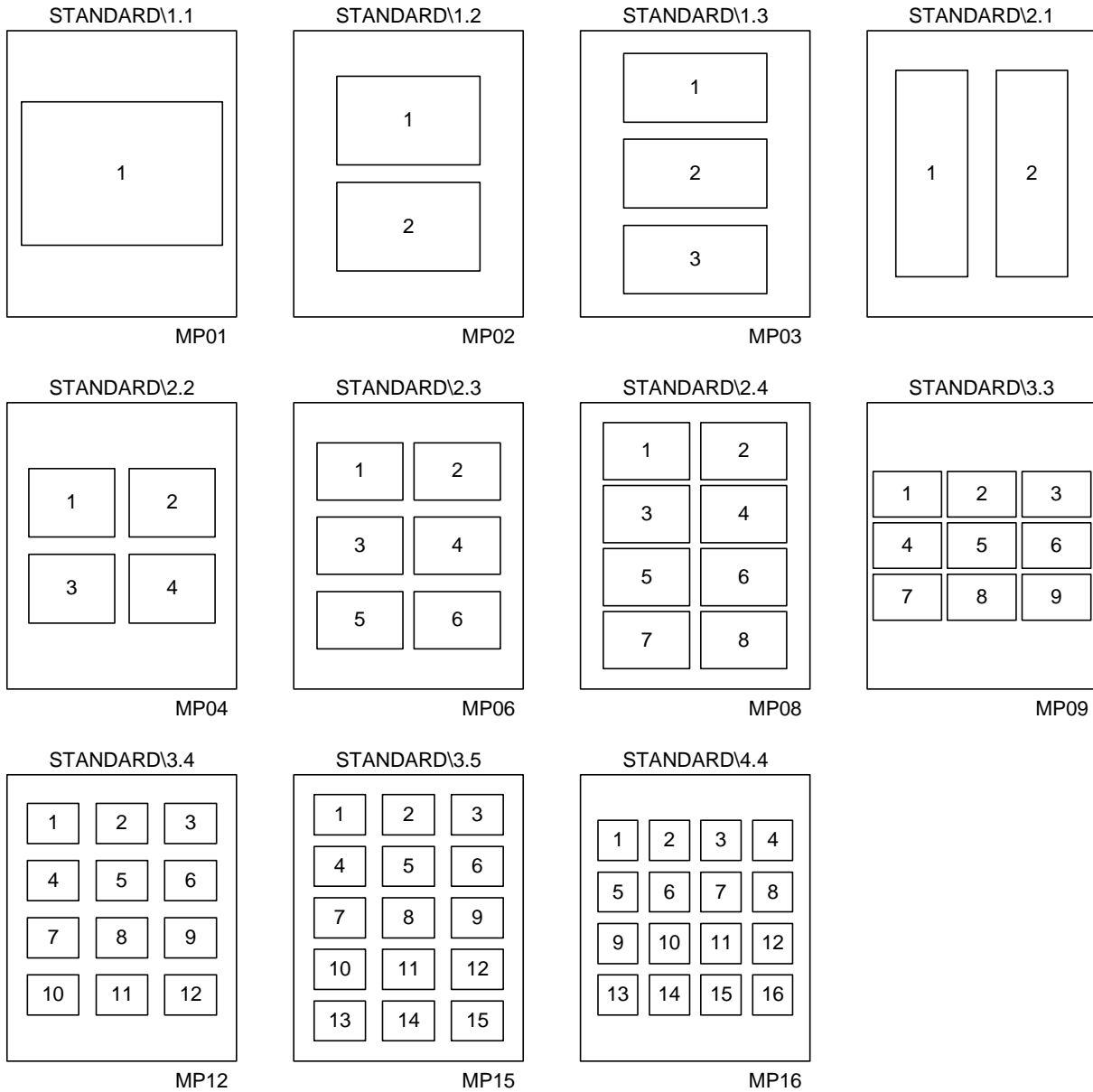


BL16



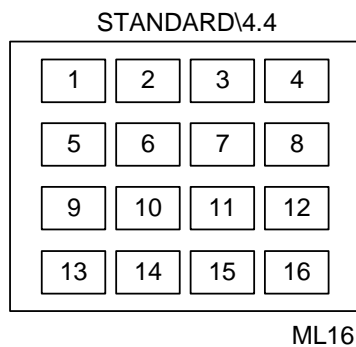
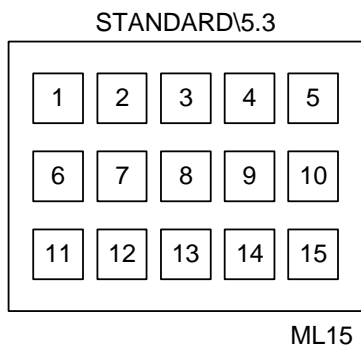
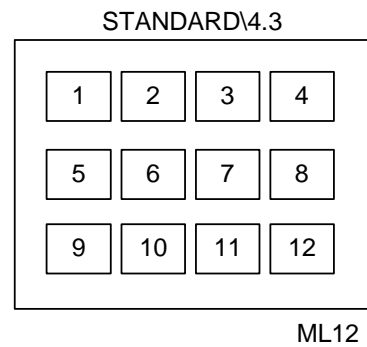
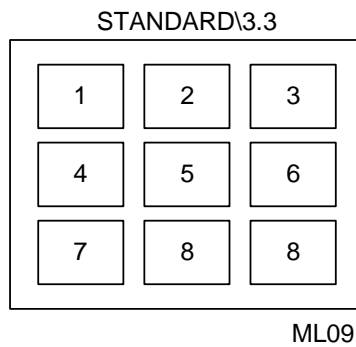
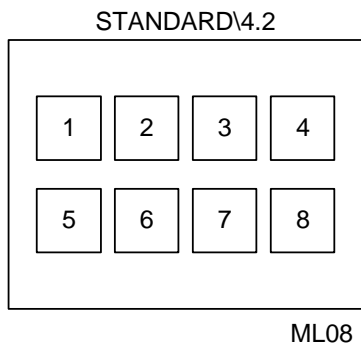
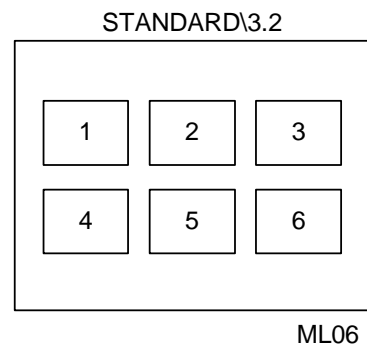
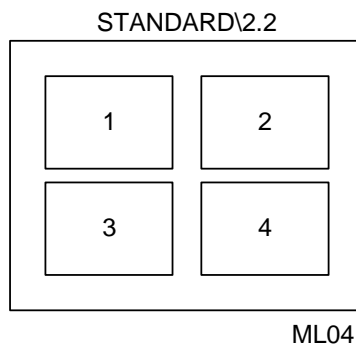
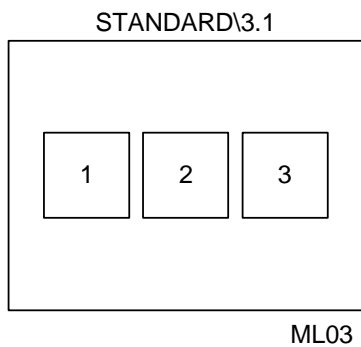
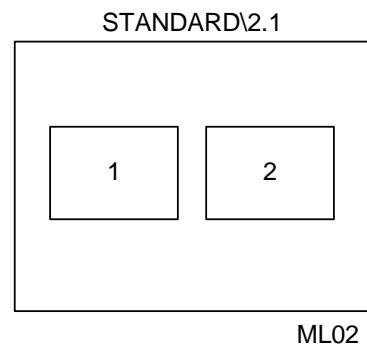
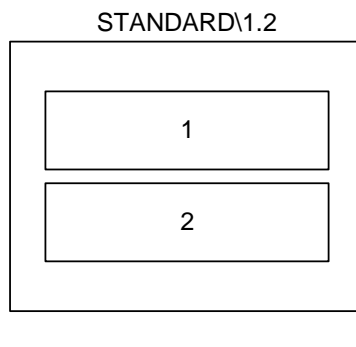
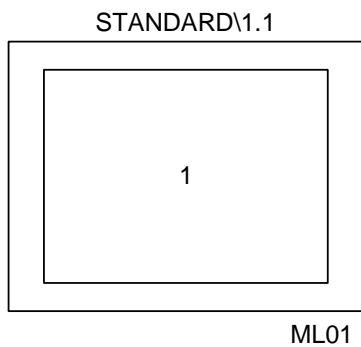
The other diagrams are omitted.
Refer to "10" x 14" Landscape" in the subsequent section for the relevant formats.

5. 8" x 10" (20cm x 25cm) PORTRAIT



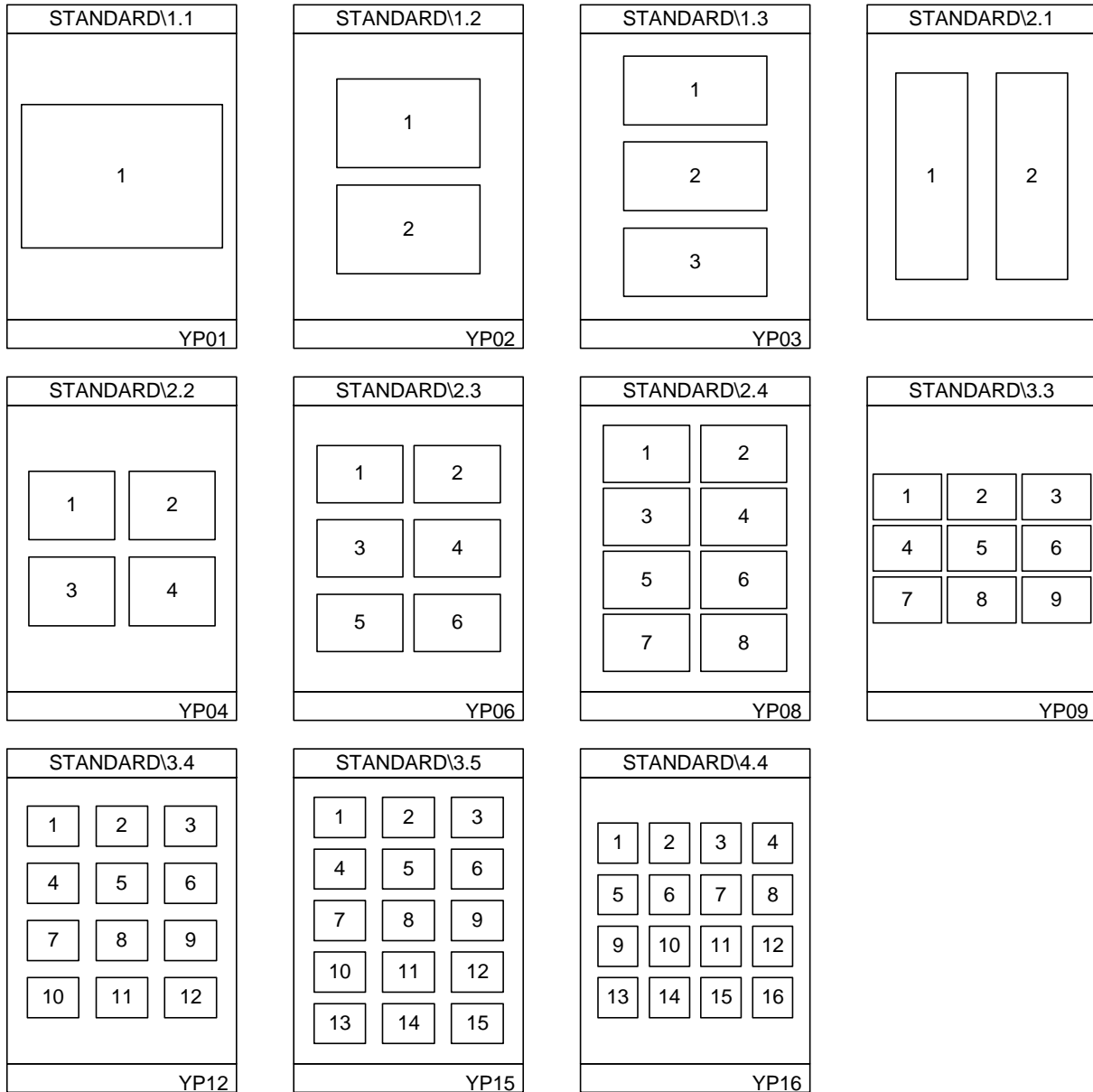
The other diagrams are omitted.
Refer to "8" x 10" Portrait" in the subsequent section for the relevant formats.

6. 8" x 10" (20cm x 25cm) LANDSCAPE



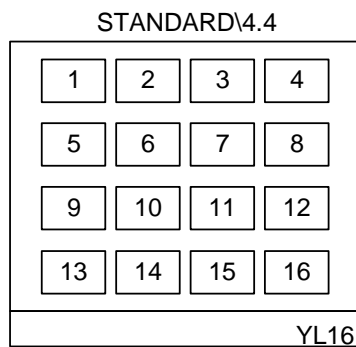
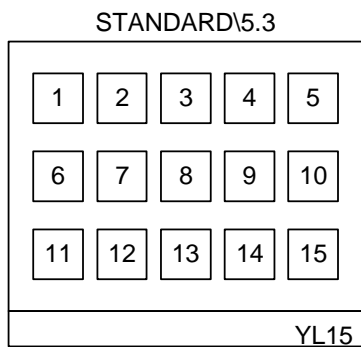
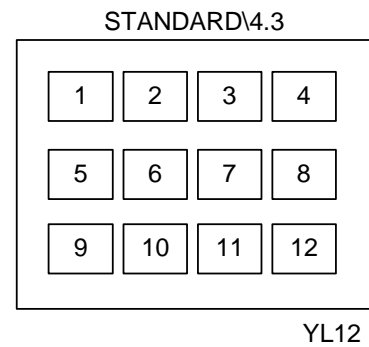
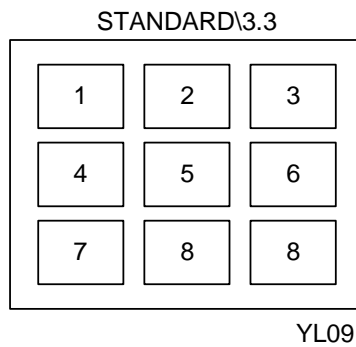
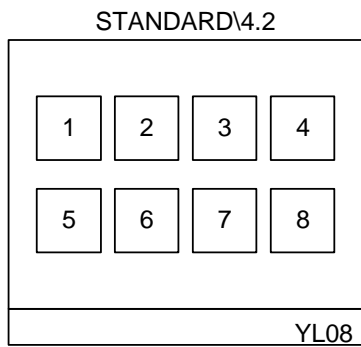
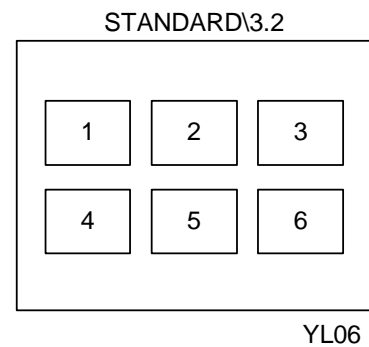
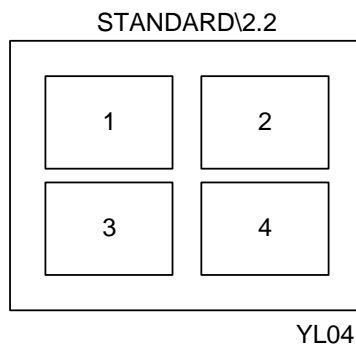
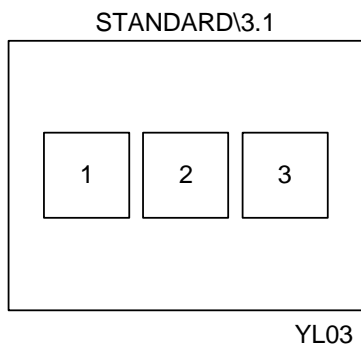
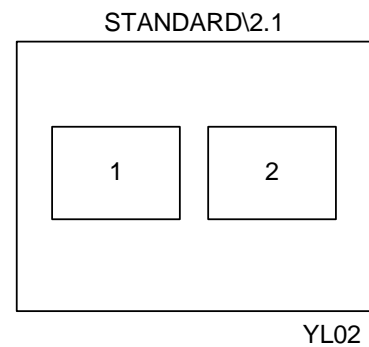
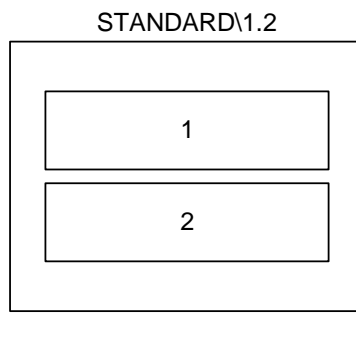
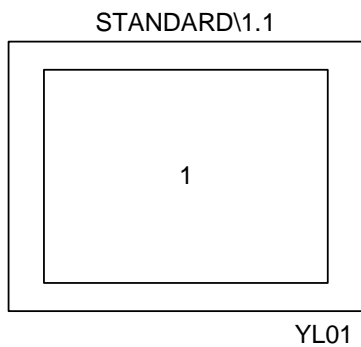
The other diagrams are omitted.
 Refer to "8" x 10" Landscape" in
 the subsequent section for the
 relevant formats.

7. 10" x 12" (25cm x 30cm) PORTRAIT



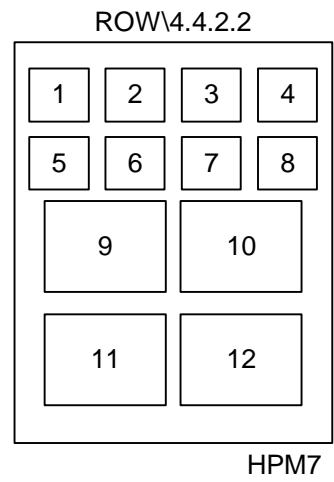
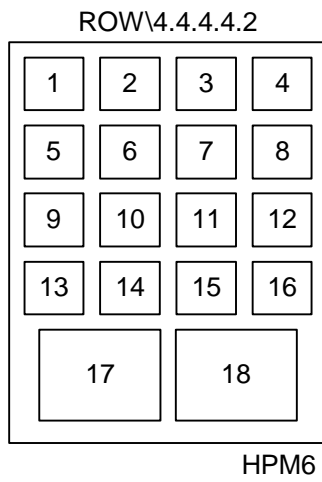
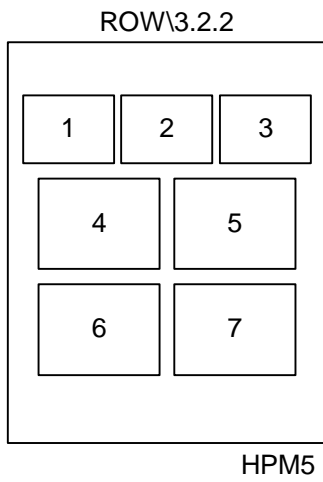
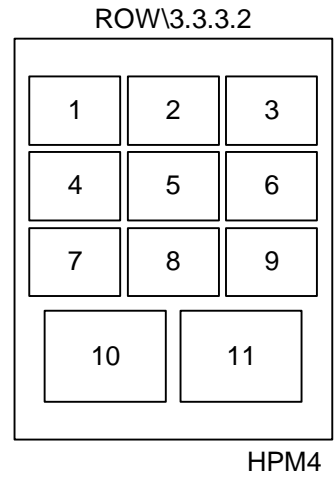
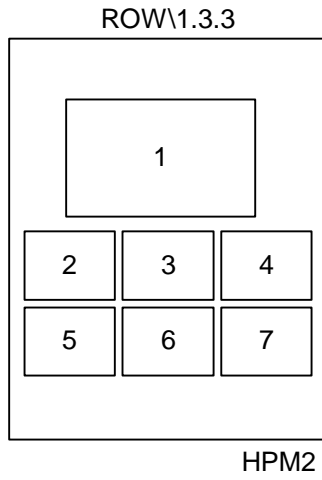
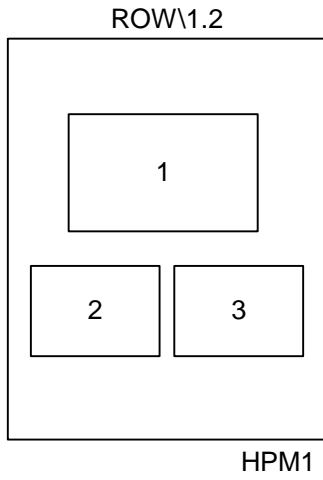
The other diagrams are omitted. Refer to "10" x 12" Portrait" in the subsequent section for the relevant formats.

8. 10" x 12" (25cm x 30cm) LANDSCAPE

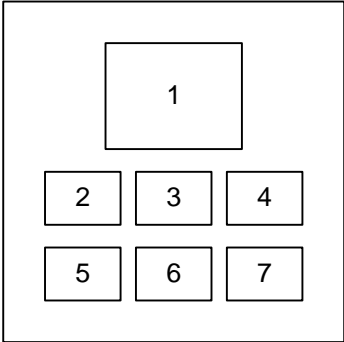


The other diagrams are omitted. Refer to "10" x 12" Landscape" in the subsequent section for the relevant formats.

9. 14" x 17" (35cm x 43cm) PORTRAIT MIXED FORMAT

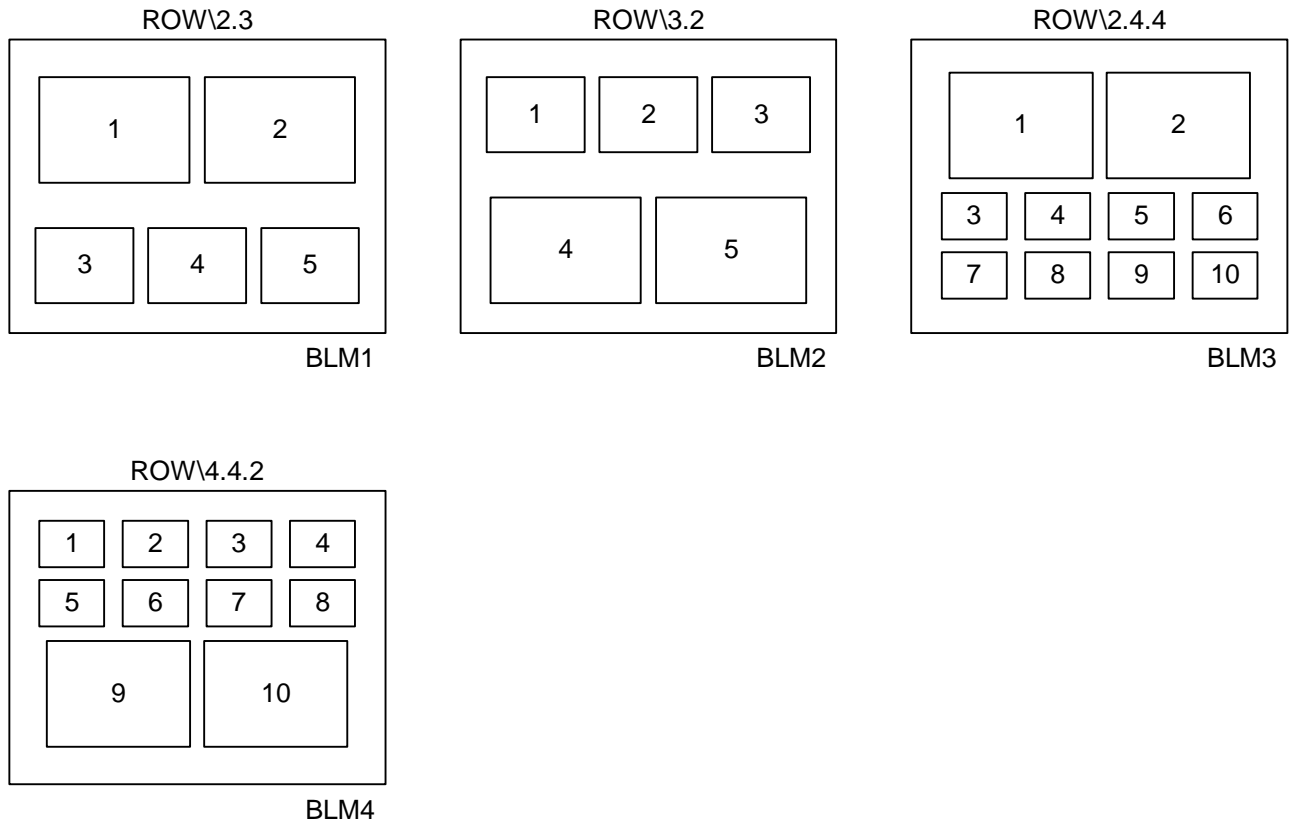


10. 10" x 14" (26cm x 36cm) PORTRAIT MIXED FORMAT



BPM1

11. 10" x 14" (26cm x 36cm) LANDSCAPE MIXED FORMAT



As the mixed formats of 8" x 10" and 10" x 12" films are the same as those of 10" x 14" film, their diagrams are omitted.

Requested Image Size (2020,0030)

- Requested Image Size

The tables presented herein show the maximum number of pixels that can be recorded without reducing the image size. Calculate the maximum value of the requested image size⁴ based on values shown in the Column of those tables.

Image recording in standard density pixel sizeA value divided by 10

(the printer's image recording density is 10 lines/mm.)

The above values are given on the assumption that the frame width to be 0 and interval between each image data to be 20 for the configuration settings with the DRYPIX 2000.

Increasing the frame width by 1 will reduce the size by 2. If interval between each image data is changed, such a change will be reflected or assigned equally to each image data.

Note that values shown in "Column" are applicable to the X dimension (horizontal) and "Row", the Y dimension (vertical).

⁴ It used to be specified "Length in mm that Image rows of the Image are to be printed". But, it has been changed to "Width (X-dimension) in mm of the image to be printed" according to CP108. Thus, calculate it based on the values shown in Column.

◆ 14"×17" Portrait

		Standard Density Recording	
Format		Column	Row
STANDARD¥1,1		4072	4891
STANDARD¥1,2		4072	2435
STANDARD¥1,3		4072	1617
STANDARD¥2,1		2026	4891
STANDARD¥2,2		2026	2435
STANDARD¥2,3		2026	1617
STANDARD¥2,4		2026	1207
STANDARD¥3,3		1344	1617
STANDARD¥3,4		1344	1207
STANDARD¥3,5		1344	962
STANDARD¥3,6		1344	798
STANDARD¥4,4		1003	1207
STANDARD¥4,5		1003	962
STANDARD¥4,6		1003	798
STANDARD¥4,7		1003	681
STANDARD¥4,8		1003	593
STANDARD¥5,5		798	962
STANDARD¥5,6		798	798
STANDARD¥5,7		798	681
STANDARD¥5,8		798	593
STANDARD¥6,6		662	798
STANDARD¥6,7		662	681
STANDARD¥6,8		662	593
STANDARD¥6,9		662	525
STANDARD¥6,10		662	471
STANDARD¥7,7		564	681
STANDARD¥7,8		564	593
STANDARD¥7,9		564	525
STANDARD¥7,10		564	471
STANDARD¥8,8		491	593
ROW¥1,2	1	4072	2435
	2-3	2026	2433
ROW¥1,3,3	1	4072	2423
	2-7	1344	1212
ROW¥3,3,3,2	1-9	1344	1114
	10-11	2026	1485
ROW¥3,2,2	1-3	1344	1412
	4-7	2026	1717
ROW¥4,4,4,4,2	1-16	1003	802
	17-18	2026	1598
ROW¥4,4,2,2	1-8	1003	805
	9-12	2026	1608

◆ 14"×17" Landscape

Format	Standard Density Recording	
	Column	Row
STANDARD¥1,1	4972	3993
STANDARD¥2,1	2476	3993
STANDARD¥3,1	1644	3993
STANDARD¥1,2	4972	1986
STANDARD¥2,2	2476	1986
STANDARD¥3,2	1644	1986
STANDARD¥4,2	1228	1986
STANDARD¥3,3	1644	1317
STANDARD¥4,3	1228	1317
STANDARD¥5,3	978	1317
STANDARD¥6,3	812	1317
STANDARD¥4,4	1228	983
STANDARD¥5,4	978	983
STANDARD¥6,4	812	983
STANDARD¥7,4	693	983
STANDARD¥8,4	604	983
STANDARD¥5,5	978	782
STANDARD¥6,5	812	782
STANDARD¥7,5	693	782
STANDARD¥8,5	604	782
STANDARD¥6,6	812	648
STANDARD¥7,6	693	648
STANDARD¥8,6	604	648
STANDARD¥9,6	534	648
STANDARD¥10,6	479	648
STANDARD¥7,7	693	553
STANDARD¥8,7	604	553
STANDARD¥9,7	534	553
STANDARD¥10,7	479	553
STANDARD¥8,8	604	481

◆ 10"×14" Portrait

		Standard Density Recording	
Format		Column	Row
STANDARD¥1,1		2962	4005
STANDARD¥1,2		2962	1992
STANDARD¥1,3		2962	1321
STANDARD¥2,1		1417	4005
STANDARD¥2,2		1417	1992
STANDARD¥2,3		1417	1321
STANDARD¥2,4		1417	986
STANDARD¥3,3		974	1321
STANDARD¥3,4		974	986
STANDARD¥3,5		974	785
STANDARD¥3,6		974	650
STANDARD¥4,4		725	986
STANDARD¥4,5		725	785
STANDARD¥4,6		725	650
STANDARD¥4,7		725	555
STANDARD¥4,8		725	483
STANDARD¥5,5		576	785
STANDARD¥5,6		576	650
STANDARD¥5,7		576	555
STANDARD¥5,8		576	483
STANDARD¥6,6		477	650
STANDARD¥6,7		477	555
STANDARD¥6,8		477	483
STANDARD¥6,9		477	427
STANDARD¥6,10		477	382
STANDARD¥7,7		406	555
STANDARD¥7,8		406	483
STANDARD¥7,9		406	427
STANDARD¥7,10		406	382
STANDARD¥8,8		352	483
ROW¥1,3,3	1	2962	1958
	2-7	974	1008

◆ 10" × 14" Landscape

		Standard Density Recording	
Format		Column	Row
STANDARD¥1,1		4096	2871
STANDARD¥2,1		2038	2871
STANDARD¥3,1		1352	2871
STANDARD¥1,2		4096	1425
STANDARD¥2,2		2038	1425
STANDARD¥3,2		1352	1425
STANDARD¥4,2		1009	1425
STANDARD¥3,3		1352	943
STANDARD¥4,3		1009	943
STANDARD¥5,3		803	943
STANDARD¥6,3		666	943
STANDARD¥4,4		1009	702
STANDARD¥5,4		803	702
STANDARD¥6,4		666	702
STANDARD¥7,4		568	702
STANDARD¥8,4		494	702
STANDARD¥5,5		803	558
STANDARD¥6,5		666	558
STANDARD¥7,5		568	558
STANDARD¥8,5		494	558
STANDARD¥6,6		666	461
STANDARD¥7,6		568	461
STANDARD¥8,6		494	461
STANDARD¥9,6		437	461
STANDARD¥10,6		391	461
STANDARD¥7,7		568	393
STANDARD¥8,7		494	393
STANDARD¥9,7		437	393
STANDARD¥10,7		391	393
STANDARD¥8,8		494	341
ROW¥2,3	1-2	2038	1662
	3-5	1352	1190
ROW¥3,2	1-3	1352	1186
	4-5	2038	1666
ROW¥2,4,4	1-2	2038	1412
	3-10	1009	710
ROW¥4,4,2	1-8	1009	707
	9-10	2038	1417

◆ 8"×10" Portrait

		Standard Density Recording	
Format		Column	Row
STANDARD¥1,1		2280	2812
STANDARD¥1,2		2280	1396
STANDARD¥1,3		2280	924
STANDARD¥2,1		1130	2812
STANDARD¥2,2		1130	1396
STANDARD¥2,3		1130	924
STANDARD¥2,4		1130	688
STANDARD¥3,3		746	924
STANDARD¥3,4		746	688
STANDARD¥3,5		746	546
STANDARD¥3,6		746	452
STANDARD¥4,4		555	688
STANDARD¥4,5		555	546
STANDARD¥4,6		555	452
STANDARD¥4,7		555	384
STANDARD¥4,8		555	334
STANDARD¥5,5		440	546
STANDARD¥5,6		440	452
STANDARD¥5,7		440	384
STANDARD¥5,8		440	334
STANDARD¥6,6		363	452
STANDARD¥6,7		363	384
STANDARD¥6,8		363	334
STANDARD¥6,9		363	294
STANDARD¥6,10		363	263
STANDARD¥7,7		308	384
STANDARD¥7,8		308	334
STANDARD¥7,9		308	294
STANDARD¥7,10		308	263
STANDARD¥8,8		267	334
ROW¥1,3,3	1	2280	1347
	2-7	746	711

◆ 8"×10" Landscape

Format	Standard Density Recording		
	Column	Row	
STANDARD¥1,1	2877	2215	
STANDARD¥2,1	1428	2215	
STANDARD¥3,1	945	2215	
STANDARD¥1,2	2877	1097	
STANDARD¥2,2	1428	1097	
STANDARD¥3,2	945	1097	
STANDARD¥4,2	704	1097	
STANDARD¥3,3	945	725	
STANDARD¥4,3	704	725	
STANDARD¥5,3	559	725	
STANDARD¥6,3	462	725	
STANDARD¥4,4	704	538	
STANDARD¥5,4	559	538	
STANDARD¥6,4	462	538	
STANDARD¥7,4	393	538	
STANDARD¥8,4	342	538	
STANDARD¥5,5	559	427	
STANDARD¥6,5	462	427	
STANDARD¥7,5	393	427	
STANDARD¥8,5	342	427	
STANDARD¥6,6	462	352	
STANDARD¥7,6	393	352	
STANDARD¥8,6	342	352	
STANDARD¥9,6	301	352	
STANDARD¥10,6	269	352	
STANDARD¥7,7	393	299	
STANDARD¥8,7	342	299	
STANDARD¥9,7	301	299	
STANDARD¥10,7	269	299	
STANDARD¥8,8	342	259	
ROW¥2,3	1-2	1428	1263
	3-5	945	930
ROW¥3,2	1-3	945	889
	4-5	1428	1305
ROW¥2,4,4	1-2	1428	1067
	3-10	704	553
ROW¥4,4,2	1-8	704	532
	9-10	1428	1109

◆ 10"×12" Portrait

Format	Standard Density Recording		
	Column	Row	
STANDARD¥1,1	2902	3413	
STANDARD¥1,2	2902	1696	
STANDARD¥1,3	2902	1123	
STANDARD¥2,1	1440	3413	
STANDARD¥2,2	1440	1696	
STANDARD¥2,3	1440	1123	
STANDARD¥2,4	1440	837	
STANDARD¥3,3	953	1123	
STANDARD¥3,4	953	837	
STANDARD¥3,5	953	665	
STANDARD¥3,6	953	551	
STANDARD¥4,4	709	837	
STANDARD¥4,5	709	665	
STANDARD¥4,6	709	551	
STANDARD¥4,7	709	469	
STANDARD¥4,8	709	408	
STANDARD¥5,5	563	665	
STANDARD¥5,6	563	551	
STANDARD¥5,7	563	469	
STANDARD¥5,8	563	408	
STANDARD¥6,6	466	551	
STANDARD¥6,7	466	469	
STANDARD¥6,8	466	408	
STANDARD¥6,9	466	360	
STANDARD¥6,10	466	322	
STANDARD¥7,7	396	469	
STANDARD¥7,8	396	408	
STANDARD¥7,9	396	360	
STANDARD¥7,10	396	322	
STANDARD¥8,8	344	408	
ROW¥1,3,3	1	2902	1590
	2-7	953	885

◆ 10"×12" Landscape

Format	Standard Density Recording		
	Column	Row	
STANDARD¥1,1	3460	2810	
STANDARD¥2,1	1719	2810	
STANDARD¥3,1	1139	2810	
STANDARD¥1,2	3460	1394	
STANDARD¥2,2	1719	1394	
STANDARD¥3,2	1139	1394	
STANDARD¥4,2	849	1394	
STANDARD¥3,3	1139	922	
STANDARD¥4,3	849	922	
STANDARD¥5,3	675	922	
STANDARD¥6,3	559	922	
STANDARD¥4,4	849	686	
STANDARD¥5,4	675	686	
STANDARD¥6,4	559	686	
STANDARD¥7,4	476	686	
STANDARD¥8,4	414	686	
STANDARD¥5,5	675	545	
STANDARD¥6,5	559	545	
STANDARD¥7,5	476	545	
STANDARD¥8,5	414	545	
STANDARD¥6,6	559	450	
STANDARD¥7,6	476	450	
STANDARD¥8,6	414	450	
STANDARD¥9,6	365	450	
STANDARD¥10,6	327	450	
STANDARD¥7,7	476	383	
STANDARD¥8,7	414	383	
STANDARD¥9,7	365	383	
STANDARD¥10,7	327	383	
STANDARD¥8,8	414	332	
ROW¥2,3	1-2	1721	1341
	3-5	1140	1451
ROW¥3,2	1-3	1140	1341
	4-5	1721	1451
ROW¥2,4,4	1-2	1721	1341
	3-10	850	715
ROW¥4,4,2	1-8	850	660
	9-10	1721	1451

Appendix B: Configuration Information (2010,0150)

Specifies gradation tables in the DRYPIX2000. Eight types of gradation tables can be registered for each SCU AE, which will be specified by “1” to “8” or “CS000” to “CS999.” For the latter, used LUT are as follows.

Specified Value	Used LUT
CS000 – CS199	1
CS200 – CS299	2
CS300 – CS399	3
CS400 – CS499	4
CS500 – CS599	5
CS600 – CS699	6
CS700 – CS799	7
CS800 – CS999	8

Appendix C: 2100,0030/2110,0020 Values

- Applicable to (2100,0030) and (2110,0020) when (2100,0020)=PENDING and (2110,0010)=WARNING/FAILURE.

BAD RECEIVE MGZ	There is a problem with the film receive magazine. Films from the printer cannot be transported into the magazine.
BAD SUPPLY MGZ	There is a problem with a film supply magazine. Films from this magazine cannot be transported into the printer.
COVER OPEN	One or more printer or processor covers, drawers, doors are open.
FILM JAM	A film transport error has occurred and a film is jammed in the printer or processor.
PRINTER OFFLINE	The printer has been disabled by an operator or service person.
QUEUED	Print Job in Queue
SUPPLY EMPTY	The printer is out of film.
UNKNOWN	There is an unspecified problem.

Appendix D: Error Comment

Specify Error Comment (0000,0902) when returning the following Status. (Maximum 64 characters)

Code	Description	Error Comment (0000,0902)
0110H	An attempt was made to create 2nd Basic Film Session SOP instance.	Unable to handle multiple film session (BFS, N-CREATE)
0110H	No films of base color specified by BFS N-CREATE have been loaded.	Requested medium type does not exist on printer (BFS, N-CREATE)
0110H	No films of base color specified by BFS N-SET have been loaded.	Requested medium type does not exist on printer (BFS, N-SET)
0110H	The number of instances exceeded 32 in BFB N-CREATE.	Number of film boxes exceeds 32(BFB, N-CREATE)
0110H	The instance created the last using BFB N-SET has not been specified.	Unable to handle a instance not created last (BFB, N-SET)
0110H	The instance created the last using BFB N-DELETE has not been specified.	Unable to handle a instance not created last (BFB, N-DELETE)
0110H	The instance not belonging to BFB created the last using BIB N-SET has been specified.	The instance doesn't belong to the last created FB (BIB, N-SET)
0110H	The instance that should be referred to by Presentation LUT N-DELETE has been specified.	Can't delete a instance which is referred to (LUT, N-DELETE)
0110H	BFBs of different film sizes were present in BFSN-ACTION.	Unable to print mixed film size Basic Film Boxes (BFS, N-ACTION)
0110H	No films of specified size were loaded.	Requested film size does not exist on printer (BFB, N-CREATE)
0110H	No films in combination of specified base color and film size have been loaded.	Requested medium type or film size does not exist on printer
0122H	A SOP class that is not supported has been specified.	SOP class not supported.
B602H	There were no image Boxes while executing BFS N-ACTION.	No Image Box SOP instances (BFS, N-ACTION)
B603H	There were no image Boxes while executing BFB N-ACTION.	No Image Box SOP instances (BFB, N-ACTION)
B604H	As the image is larger than the image box, it should be reduced while executing BIB N-SET.	Image size is larger than image box, demagnified (BIB, N-SET)
B605H	Maximum and minimum densities exceeded the specified range.	Requested Min Density or Max Density outside of printer's range
C600H	There were no Film Boxes while BFS N-ACTION.	No Film Box SOP instances (BFS, N-ACTION)
C601H	Because the print queue was full, jobs could not be created while executing BFS N-ACTION.	Unable to create Print Job : Resource limitation(BFS, N-ACTION)
C602H	Because the print queue was full, jobs could not be created while executing BFB N-ACTION.	Unable to create Print Job : Resource limitation(BFB, N-ACTION)
C605H	No image storage areas were available while executing BIB N-SET.	Unable to store image data : Resource limitation(BIB, N-SET)

Appendix E: Behaviors as Specified by (2020,0040)(Requested Decimate/Crop Behavior)

Parameters		(2020,0040) specified			
		Not specified particularly	DECIMATE	CROP	FAIL
(2010,0060)=CUBIC		Returns (0000H)(S). CUBIC interpolation is applied.			
(2010,0060)=NONE	When the image size is larger than image frame.	Returns B604H(W). ^{*1} CUBIC interpolation is applied by (2010,0060)=CUBIC.	Returns B60AH(W). ^{*2} CUBIC interpolation is applied by (2010,0060)=CUBIC.	Returns B609H(W). ^{*2} Image edges are cut off by matching the specified image with the image frame at their centers.	Returns C603H(F). No images are received.
	When the image size is smaller than image frame.	Returns 0000H(S). No interpolation processing is applied.			
Size specified by (2020,0030).	When the specified size is larger than the image frame.	Returns 0116H(W). (2020,0030) is disregarded, applying CUBIC interpolation.		Returns B609H(W). ^{*2} An image is created based on the specified image size, and the edges are cut off by matching the two images at their centers.	Returns C603H(F). No images are received.
	When the specified size is smaller than the image frame.	Returns 0000H(S). CUBIC interpolation is applied.			

*1) (0000H)(S) is returned when the B604H(W) notification of reducing an image that cannot be accommodated with the image frame is disregarded, as determined by Config settings.

*2) (0000H)(S) is returned when both B60AH(W) and B609H(W) disregard B604H(W).