

**CB TEST REPORT**

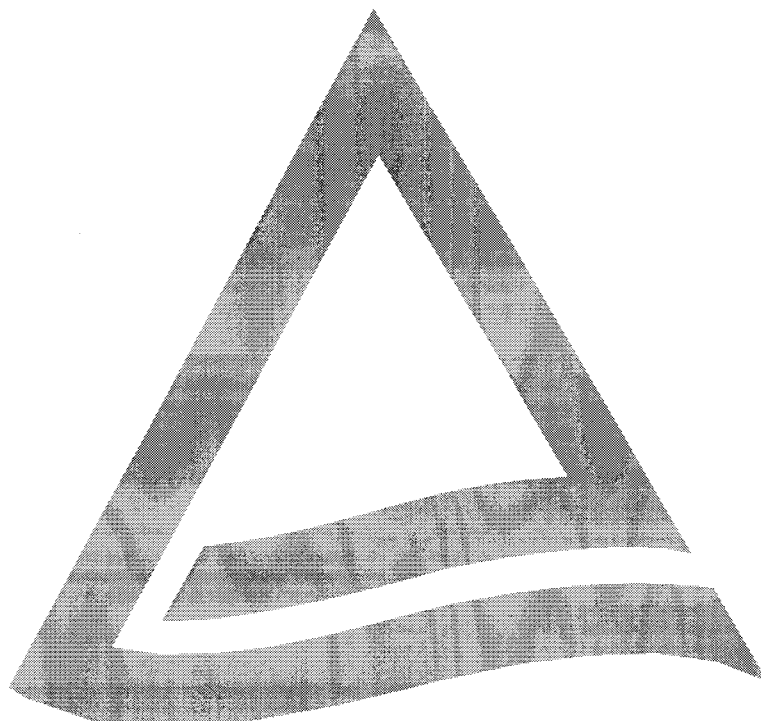
**12701352 004**

**for**

**Blu-ray Disc Drive**

**UJ-110, UJ-120, UJ-210, UJ-220, UJ130A, UJ130E,  
UJ230A, UJ230E, UJ140A, UJ240, UJ141, UJ230,  
UJ150, UJ160, UJ260**

**Panasonic System Networks Co., Ltd.**



**This documentation consists of 7 pages (excluding this cover page).**



Test report issued under the responsibility of:



**TEST REPORT**

**IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006  
Information technology equipment – Safety –**

**Part 1: General requirements**

<b>Report Reference No</b> .....	12701352 004
<b>Date of issue</b> .....	2011.05.17
<b>Total number of pages</b> .....	7
<b>CB/CCA Testing Laboratory</b> .....	TÜV Rheinland Japan Ltd., Osaka Laboratory
<b>Address</b> .....	Wakasugi Center Bldg., Honkan 16F, 9-1, Higashi Tenma 2-chome, Kita-ku, Osaka-shi, 530-0044, Japan
<b>Applicant's name</b> .....	Panasonic System Networks Co., Ltd.
<b>Address</b> .....	1080 Takano Nagomi-machi, Tamana-gun, Kumamoto 865-0193, Japan
<b>Manufacturer's name</b> .....	(same as Applicant)
<b>Address</b> .....	(same as Applicant)
<b>Factory's name</b> .....	1. (same as Applicant)
<b>Address</b> .....	(same as Applicant)
	2. Panasonic System Networks Philippines Corporation Santa Rosa Factory  102 Laguna Boulevard Bo. Don Jose, Laguna Technopark Santa Rosa, Laguna 4026, Philippines
	3. Integrated Microelectronics, Inc.  North Science Avenue, Laguna Techno Park Inc. Binan, Laguna, Philippines.
<b>Test specification:</b>	
<b>Standard</b> .....	<input checked="" type="checkbox"/> IEC 60950-1:2005 (2nd Edition) and/or <input checked="" type="checkbox"/> EN 60950-1:2006
<b>Test procedure</b> .....	CB-scheme
<b>Non-standard test method</b> .....	N/A

IEC/EN 60950-1

**Test Report Form No**.....: IECEN60950\_1C

Test Report Form(s) Originator .....: SGS Fimko Ltd

Master TRF.....: Dated 2007-06

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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.

**This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA**

**Test item description** .....: Blu-ray Disc Drive

Trade Mark.....: (not provided)

Manufacturer .....: (same as applicant )

Model/Type reference.....: UJ-110, UJ-120, UJ-210, UJ-220, UJ130A, UJ130E, UJ230A, UJ230E, UJ140A, UJ240, UJ141, UJ230, UJ150, UJ160, UJ260

Ratings.....: DC 5V (Specified 1.6A max.)

**Testing procedure and testing location:**
 **CB/CCA Testing Laboratory:** TÜV Rheinland Japan Ltd. Osaka Laboratory

Testing location/ address.....: Wakasugi Center Bldg., Honkan 16F, 9-1, Higashi Tenma 2-chome, Kita-ku, Osaka-shi, 530-0044, Japan

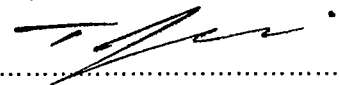
 **Associated CB Laboratory:** (see above)

Testing location/ address.....: (see above)

Tested by (name + signature).....: M. Teng



Approved by (+ signature).....: T. Izumi



IEC/EN 60950-1

**Summary of testing:**

No tests were considered necessary.

Additionally evaluated Test specifications.

EN 60950-1:2006 + A11:2009

IEC 60825-1: 2007

EN 60825-1: 2007

**Summary of compliance with National Differences:**

EU Group Differences, EU Special National Conditions, EU A-Deviations, and National Differences  
AT, CH, DE, DK, FI, GB, NO, SE


AT=Austria, AU=Australia, CA=Canada, CH=Switzerland, DE=Germany, DK=Denmark, FI=Finland,  
FR=France, GB=United Kingdom, IT=Italy, JP=Japan, KR=Korea, NL=The Netherlands, NO=Norway,  
PL=Poland, SE=Sweden, SI=Slovenia, US=U.S.A.

For National Differences see the original test report.

Copy of marking plate:

Copy of marking label

MANUFACTURED: APRIL 2011  
SERIAL NO. 1DRWA000001 ABPSN-B




Model No. UJ160

POWER SUPPLY : DC 5 V  
COMPLIES WITH FDA RADIATION  
PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J. 130P.CP  
Panasonic System Networks Co., Ltd.  
1-62, 4-Chome Minoshima Hakata-Ku Fukuoka, Japan

**UL** E140407 **CE** D33083 **CS** Made in Philippines J0GS0449ZA

<p><b>CAUTION</b> CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. <b>ATTENTION</b> CLASSE 3B RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FASCIAILL.</p> <p><b>VORSICHT</b> KLASSE 3B SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WEENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHLE AUSSETZEN.</p> <p><b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING. <b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. <b>VARNING</b> KLASSE 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG. <b>VARO!</b> AVATTAESSA OLET ALTTIINA LUOKAN 3B NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESEEN.</p> <p><b>注意</b> 打开时有可见及不可见激光辐射。避免光束照射。</p>	<p>DO NOT OPEN THE DRIVE. NO USER ADJUSTMENT OR SERVICEABLE PARTS INSIDE. DO NOT PUSH COVER.</p> <p><b>CLASS 1 LASER PRODUCT</b></p> <p><b>LASER KLASSE 1</b></p> <p>1类激光产品</p>
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MANUFACTURED: APRIL 2011  
SERIAL NO. 1DRWA000001 ABPSN-B



Model No. UJ260

POWER SUPPLY : DC 5 V  
COMPLIES WITH FDA RADIATION  
PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J. 130P.CP  
Panasonic System Networks Co., Ltd.  
1-62, 4-Chome Minoshima Hakata-Ku Fukuoka, Japan

**UL** E140407 **CE** D33083 **CS** Made in Philippines J0GS0449ZA

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Caution label

<p><b>CAUTION</b> CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. <b>ATTENTION</b> CLASSE 3B RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FASCIAILL.</p> <p><b>VORSICHT</b> KLASSE 3B SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WEENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHLE AUSSETZEN.</p> <p><b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING. <b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. <b>VARNING</b> KLASSE 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG. <b>VARO!</b> AVATTAESSA OLET ALTTIINA LUOKAN 3B NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESEEN.</p> <p><b>注意</b> 打开时有可见及不可见激光辐射。避免光束照射。</p>	<p>DO NOT OPEN THE DRIVE. NO USER ADJUSTMENT OR SERVICEABLE PARTS INSIDE. DO NOT PUSH COVER.</p> <p><b>CLASS 1 LASER PRODUCT</b></p> <p><b>LASER KLASSE 1</b></p> <p>1类激光产品</p>
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**Test item particulars.....:**

- Equipment mobility .....:  movable  hand-held  transportable  
 stationary  for building-in  direct plug-in
- Connection to the mains.....:  pluggable equipment  type A  type B  
 permanent connection  
 detachable power supply cord  
 non-detachable power supply cord  
 not directly connected to the mains
- Operating condition .....:  continuous  
 rated operating / resting time:
- Access location.....:  operator accessible  
 restricted access location
- Over voltage category (OVC) .....:  OVC I  OVC II  OVC III  OVC IV  
 other: class III equipment
- Mains supply tolerance (%) or absolute mains supply values .....: DC supply
- Tested for IT power systems.....:  Yes  No
- IT testing, phase-phase voltage (V) .....: --
- Class of equipment.....:  Class I  Class II  Class III  
 Not classified
- Considered current rating (A) .....: Class III equipment
- Pollution degree (PD) .....:  PD 1  PD 2  PD 3
- IP protection class .....: Not rated, indoor use only
- Altitude during operation (m) .....: Up to 2000
- Altitude of test laboratory (m) .....: < 1000
- Mass of equipment (kg).....: < 1.0

**Possible test case verdicts:**

- test case does not apply to the test object.....: N/A
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

**Testing .....:**

- Date of receipt of test item.....: N/A
- Date(s) of performance of tests.....: N/A

**General remarks:**

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
 "(See Enclosure #)" refers to additional information appended to the report.  
 "(See appended table)" refers to a table appended to the report.

**Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.**

Throughout this report a point is used as the decimal separator.

IEC/EN 60950-1

**Changes of Manufacturer:**

(not changed)

**Changes of Factory(ies):**

(not changed)

**History of amendments and modifications:**

Ref. No. 12701352 001, dated 2010.08.26 (original test report)

Ref. No. 12701352 002, dated 2010.09.16 (modification)

Ref. No. 12701352 003, dated 2011.05.09 (modification)

**General product information:****Description of change(s):**

- 1) The nameplate of UJ260 has been added.
- 2) Correction of typo on "Differences between the models" table below:

No tests were considered necessary.

## IEC/EN 60950-1

## Differences between the models:

Function:	Model: UJ series															
	110	120	210	220	130A	130E	230A	230E	140A	240	230	260	141	150	160	
CD-R:	8X				24X											
CD-RW:	8X				24X											
DVD-RAM:	5X				5X											
DVD-R:	8X				8X											
DVD+R:	8X				8X											
DVD-RW:	4X				6X											
DVD+RW:	4X				8X											
BD-RE:	--	--	1X	2X	--	2X	--	2X	2X	2X	--	--	--	--	--	
BD-R:	--				--	4X	--	6X	4X	6X	--	--	--	--	--	--
BD-ROM:	1X	2X	--	--	4X	4X	4X	6X	4X	6X	6X	6X	6X	6X	6X	6X
Read:	24X															
Labelflash Function	--	--	--	--	--	Yes*	--	Yes*	--	Yes* (Optional)						

Note: Yes\* = provided.



**CB TEST REPORT**

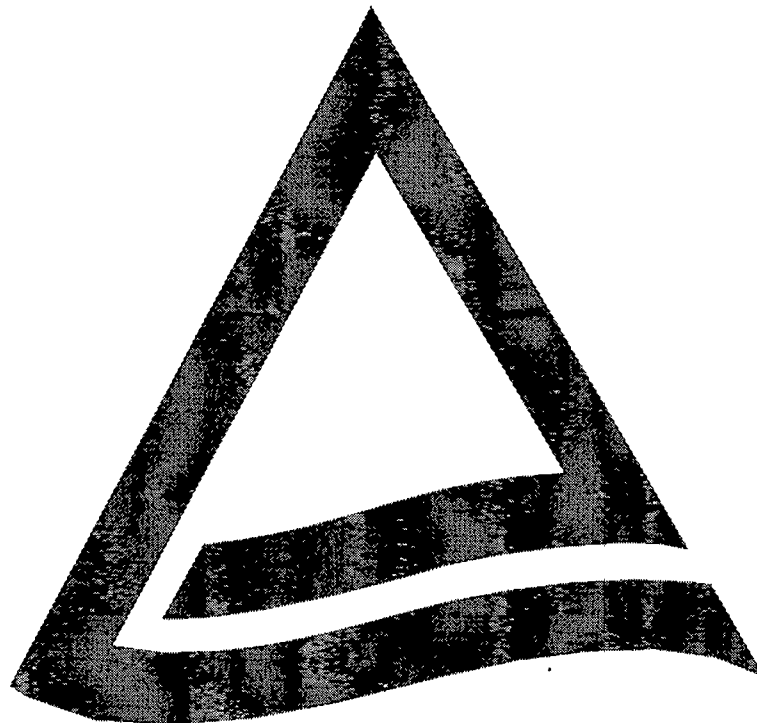
12701352 003

for

**Blu-ray Disc Drive**

UJ-110, UJ-120, UJ-210, UJ-220, UJ130A, UJ130E,  
UJ230A, UJ230E, UJ140A, UJ240, UJ141, UJ230,  
UJ150, UJ160, UJ260

**Panasonic System Networks Co., Ltd.**



This documentation consists of **17** pages (excluding this cover page).



Test report issued under the responsibility of:



<b>TEST REPORT</b>	
<b>IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006</b>	
<b>Information technology equipment – Safety –</b>	
<b>Part 1: General requirements</b>	
<b>Report Reference No</b> .....	12701352 003
<b>Date of issue</b> .....	2011.05.09
<b>Total number of pages</b> .....	17
<b>CB/CCA Testing Laboratory</b> .....	TÜV Rheinland Japan Ltd., Osaka Laboratory
<b>Address</b> .....	Wakasugi Center Bldg., Honkan 16F, 9-1, Higashi Tenma 2-chome, Kita-ku, Osaka-shi, 530-0044, Japan
<b>Applicant's name</b> .....	Panasonic System Networks Co., Ltd.
<b>Address</b> .....	1080 Takano Nagomi-machi, Tamana-gun, Kumamoto 865-0193, Japan
<b>Manufacturer's name</b> .....	(same as Applicant)
<b>Address</b> .....	(same as Applicant)
<b>Factory's name</b> .....	1. (same as Applicant)
<b>Address</b> .....	(same as Applicant)
	2. Panasonic System Networks Philippines Corporation Santa Rosa Factory 102 Laguna Boulevard Bo. Don Jose, Laguna Technopark Santa Rosa, Laguna 4026, Philippines
	3. Integrated Microelectronics, Inc. North Science Avenue, Laguna Techno Park Inc. Binan, Laguna, Philippines.
<b>Test specification:</b>	
<b>Standard</b> .....	<input checked="" type="checkbox"/> IEC 60950-1:2005 (2nd Edition) and/or <input checked="" type="checkbox"/> EN 60950-1:2006
<b>Test procedure</b> .....	CB-scheme
<b>Non-standard test method</b> .....	N/A

IEC/EN 60950-1

**Test Report Form No.**.....: IECEN60950\_1C

Test Report Form(s) Originator .....: SGS Fimko Ltd

Master TRF.....: Dated 2007-06

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**This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA**

**Test item description** .....: Blu-ray Disc Drive

Trade Mark .....: (not provided)

Manufacturer .....: (same as applicant)

 Model/Type reference.....: UJ-110, UJ-120, UJ-210, UJ-220, UJ130A, UJ130E, UJ230A, UJ230E, UJ140A, UJ240, UJ141, UJ230, UJ150, **UJ160, UJ260**

Ratings.....: DC 5V (Specified 1.6A max.)

**Testing procedure and testing location:**
 **CB/CCA Testing Laboratory:** TÜV Rheinland Japan Ltd. Osaka Laboratory

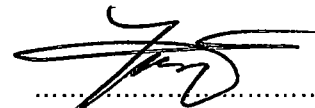
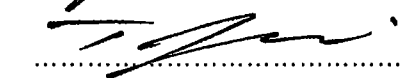
Testing location/ address.....: Wakasugi Center Bldg., Honkan 16F, 9-1, Higashi Tenma 2-chome, Kita-ku, Osaka-shi, 530-0044, Japan

 **Associated CB Laboratory:** (see above)

Testing location/ address.....: (see above)

Tested by (name + signature).....: M. Teng

Approved by (+ signature).....: T. Izumi

IEC/EN 60950-1

**Summary of testing:**

To confirm the continued compliance with the standard, the following tests were performed:  
(see Description of Changes)

**Tests performed (name of test and test clause):**  
(see below)

**Testing location:**  
(see Testing Location above)

Testing		Applicable (Yes/No)	Comments
Clause	Test description		
1.6.2	Input current	Yes	
4.3.13	Radiation	Yes	(see IEC/EN 60825-1 report)
Annex B	Locked-rotor overload test	Yes	

Additionally evaluated Test specifications.

EN 60950-1:2006 + A11:2009

IEC 60825-1: 2007

EN 60825-1: 2007

**Summary of compliance with National Differences:**

 EU Group Differences, EU Special National Conditions, EU A-Deviations, and National Differences  
 AT, CH, DE, DK, FI, GB, NO, SE


 AT=Austria, AU=Australia, CA=Canada, CH=Switzerland, DE=Germany, DK=Denmark, FI=Finland,  
 FR=France, GB=United Kingdom, IT=Italy, JP=Japan, KR=Korea, NL=The Netherlands, NO=Norway,  
 PL=Poland, SE=Sweden, SI=Slovenia, US=U.S.A.

For National Differences see the original test report.

Copy of marking plate:

Copy of marking label

MANUFACTURED: APRIL 2011  
SERIAL NO. 1DRWA000001 ABPSN-B




Model No. UJ160

POWER SUPPLY: DC 5 V  
COMPLIES WITH FDA RADIATION PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J. 130 P CP  
Panasonic System Networks Co., Ltd.  
1-62, 4-Chome Minoshima Hakata-Ku Fukuoka, Japan

**UL** **US** **CE** **TH** **SA** **CS**  
E140407 D33083 Made in Philippines JGGS0449ZA

<b>CAUTION</b> CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. <b>ATTENTION</b> CLASSE 3B RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU. <b>VORSICHT</b> KLASSE 3B SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN. <b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅPNING. UNNGÅ UDSÆTTELSE FOR STRÅLING. <b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNER. UNNGÅ EKSPONERING FOR STRÅLING. <b>VARNING</b> KLASSE 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG. <b>VARO!</b> AVTÄTTA OLET ALTTIIN LUOKAN 3B NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESEEN. <b>注意</b> 打开时有可见及不可见激光辐射。避免光束照射。	<b>DO NOT OPEN THE DRIVE. NO USER ADJUSTMENT OR SERVICEABLE PARTS INSIDE. DO NOT PUSH COVER.</b>
<b>CLASS 1 LASER PRODUCT</b> <b>LASER KLASSE 1</b> 1类激光产品	

MANUFACTURED: APRIL 2011  
SERIAL NO. 1DRWA000001 ABPSN-B



Model No. UJ160

POWER SUPPLY: DC 5 V  
COMPLIES WITH FDA RADIATION PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J. 130 P CP  
Panasonic System Networks Co., Ltd.  
1-62, 4-Chome Minoshima Hakata-Ku Fukuoka, Japan

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<b>CLASS 1 LASER PRODUCT</b> <b>LASER KLASSE 1</b> 1类激光产品	

Caution label

<b>CAUTION</b> CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. <b>ATTENTION</b> CLASSE 3B RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU. <b>VORSICHT</b> KLASSE 3B SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN. <b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅPNING. UNNGÅ UDSÆTTELSE FOR STRÅLING. <b>ADVARSEL</b> KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNER. UNNGÅ EKSPONERING FOR STRÅLING. <b>VARNING</b> KLASSE 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD. STRÅLEN ÄR FARLIG. <b>VARO!</b> AVTÄTTA OLET ALTTIIN LUOKAN 3B NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESEEN. <b>注意</b> 打开时有可见及不可见激光辐射。避免光束照射。	<b>DO NOT OPEN THE DRIVE. NO USER ADJUSTMENT OR SERVICEABLE PARTS INSIDE. DO NOT PUSH COVER.</b>
<b>CLASS 1 LASER PRODUCT</b> <b>LASER KLASSE 1</b> 1类激光产品	

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<b>Test item particulars</b> .....:	
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....:	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
Operating condition .....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location.....:	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC).....:	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: class III equipment
Mains supply tolerance (%) or absolute mains supply values .....	DC supply
Tested for IT power systems.....:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	--
Class of equipment.....:	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating (A) .....	Class III equipment
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class .....	Not rated, indoor use only
Altitude during operation (m) .....	Up to 2000
Altitude of test laboratory (m) .....	< 1000
Mass of equipment (kg).....:	< 1.0
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
<b>Testing</b> .....	
Date of receipt of test item.....:	2011.04.12
Date(s) of performance of tests.....:	2011.04.22
<b>General remarks:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
<b>Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.</b>	
Throughout this report a point is used as the decimal separator.	

**Changes of Manufacturer:**

(not changed)

**Changes of Factory(ies):**

(not changed)

**History of amendments and modifications:**

Ref. No. 12701352 001, dated 2010.08.26 (original test report)

Ref. No. 12701352 002, dated 2010.09.16 (modification)

**General product information:****Description of change(s):**1) Additional models: **UJ160, UJ260**

The models are identical to previous certified models except for the components and function as mentioned on table below. And these models are essentially the same construction except UJ160 has no write function of BD-media.

- Spindle motor type 24C075G011xx of Nidec Corp.
- Laser diode for BD type NDV4632x and NDV1733x of Nichiha.
- Pick up module type JMA160xx and JMA260xxx of Panasonic System Networks.

Models: Function:	Model: UJ series													
	110	120	210	220	130A	130 E	230 A	230 E	140 A	240	230	UJ160 UJ260	141	150
CD-R:	8X				24X									
CD-RW:	8X				24X									
DVD- RAM:	5X				5X									
DVD-R:	8X				8X									
DVD+R:	8X				8X									
DVD-RW:	4X				6X									
DVD+RW:	4X				8X									
BD-RE:	--	1X	--	2X	--	2X	--	2X	--	2X	2X	--	--	--
BD-R:	--				--	4X	--	6X	--	6X	4X	--	--	--
BD-ROM:	1X	--	2X	--	4X	4X	4X	6X	4X	4X	--	--	6X	6X
Read:	24X													
Labelflash Function	--	--	--	--	--	Yes*	--	Yes *	--	--	--	--	Yes* (Optional)	--

Note: Yes\* = provided.

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For the above described change(s) the following was considered to be necessary:

Change	Testing (Please use test data sheet)		Comments
	Clause	Test description	
1	1.6.2	Input current	(see appended table 1.6.2)
	4.3.13	Radiation	(see clause 9 of IEC 60825-1:2007 report)
	Annex B	Motor tests under abnormal condition	(see appended table 5.3)

No other test considered necessary.



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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
Main enclosure	(Various)	(Various)	Metal Plate	--	--	
Front Panel (Bezel)	(Various)	(Various)	Min. V-2 Except for dummy bezel marked "DUMMY BEZEL" and "FOR TRANSPORTATION ONLY" on the bezel.	UL94	UL	
I/O Bus and Power Connector	(Various)	(Various)	Min. V-2	UL94	UL	
Tray	(Various)	(Various)	Min. HB	UL94	UL	
Spindle Motor (Brushless motor, for model UJ-110/-210, UJ-120/-220)	Nidec Corp.	24C075A09x (x = any character or blank)	5Vdc, 750mA Class A	--	Tested inside unit	
Alternate (Brushless motor)	Panasonic System Networks	JSA210xx (x = any character or blank)	5Vdc, 750mA Class A	--	Tested inside unit	
Spindle Motor (Brushless motor, for model UJ130A/130E, UJ230A/230E)	Nidec Corp.	24C075D50xx (x = any character or blank)	5Vdc, 750mA Class A	--	Tested inside unit	
Spindle Motor (Brushless motor, for model UJ140A)	Nidec Corp.	24C075E06x (x = any character or blank)	5Vdc, 750mA Class A	--	Tested inside unit	
Spindle Motor (Brushless motor, for model UJ240/230/141)	Nidec Corp.	24C075E10xx (x = any character or blank)	5Vdc, 750mA Class B	--	Tested inside unit	
Alternate (Brushless motor, for model UJ240/230/141/ 160/260)	Nidec Corp.	24C075G01x (x = any character or blank)	5Vdc, 750mA Class B	--	Tested inside unit	
Alternate (Brushless motor, for model UJ150)	Nidec Corp.	24C075E11xxx (x = any character or blank)	5Vdc, 750mA Class B	--	Tested inside unit	

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1.5.1	TABLE: list of critical components				P
Object/part no.	Manufacturer/trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>
Alternate (Brushless motor, for model UJ160/260)	Nidec Corp.	24C075G011xx (x = any character or blank)	5Vdc, 750mA Class B	--	Tested inside unit
Feed Motor (stepping motor)	Nidec Sankyo Corp.	MSAW016Bxx (x = any character or blank)	4Vdc Class A	--	Tested inside unit
Eject Solenoid (for model UJ-110/-210, UJ-120/-220)	Shinmei Denki	DL0916S2-030-xxx (x = any character or blank)	Rated 5.5VDC (max.) Class A	--	Tested inside unit
Alternate	Mitsumi	R-51 60xx (x = any character or blank)	Rated 6.5VDC (max.) Class A	--	Tested inside unit
Eject Solenoid (for model UJ130A/130E, UJ230A/230E)	Shinmei Denki	DL0916S2-020-xxx (x = any character or blank)	Rated 5.5VDC (max.) Class A	--	Tested inside unit
Pick Up Module (for model UJ-110/-210)	Panasonic System Networks Co., Ltd.	JMA210xx or JMA110xx (x = any character or blank)	--	--	Tested inside unit
Pick Up Module (for model UJ-120)	Panasonic System Networks Co., Ltd.	JMA120xx (x = any character or blank)	--	--	Tested inside unit
Pick Up Module (for model UJ-220)	Panasonic System Networks Co., Ltd.	JMA220xx or JMA210xx (x = any character or blank)	--	--	Tested inside unit
Pick Up Module (for model UJ130)	Panasonic System Networks Co., Ltd.	JMA130xx (x = any character or blank)	--	--	Tested inside unit
Pick Up Module (for model UJ230)	Panasonic System Networks Co., Ltd.	JMA230xx (x = any character or blank)	--	--	Tested inside unit
Pick Up Module (for model UJ240/230/141)	Panasonic System Networks Co., Ltd.	JMA240xx or JMA141xx (x = any character or blank)	--	--	Tested inside unit

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
Pick Up Module (for model UJ140A)	Panasonic System Networks Co., Ltd. (include pick up type RD- DKP025x by Panasonic AVC Networks Company Device Business Unit) (x = any character or blank)	JMA140xx (x = any character or blank)	--	--	Tested inside unit	
Pick Up Module (for model UJ150)	Panasonic System Networks Co., Ltd. (include pick up type SF-BC621x by Sanyo Electric Co., Ltd.) (x = any character or blank)	JMA150x (x = any characters or blank)	--	--	Tested inside unit	
Pick Up Module (for model UJ160)	Panasonic System Networks Co., Ltd.	JMA160xx (x = any characters or blank)	--	--	Tested inside unit	
Pick Up Module (for model UJ160/260)	Panasonic System Networks Co., Ltd.	JMA260xxxx (x = any characters or blank)	--	--	Tested inside unit	
Blue Diode (for model UJ-110/-120 /UJ130A/130E)	Nichia	NDV1122-xx (x = any character or blank)	405nm, Laser output power: 25mW (CW)	--	Tested inside unit	
Blue Diode (for model UJ-210/-220)	Nichia	NDHV210DFA- S01	405nm Laser output power: 80mW (CW) 160mW (pulse)	--	Tested inside unit	
Blue Diode (for model UJ130A/130E UJ141)	Nichia	NDV1322-xx (x = any character or blank)	405nm, Laser output power: 55mW (CW)	--	Tested inside unit	
Blue Diode (for model UJ230A/230E)	Nichia	NDV43xx-xx (x = any character or blank)	405nm, Laser output power: 280mW (CW)	--	Tested inside unit	
Blue Diode (for model UJ140A)	Nichia	NDV1342x (x = any character or blank)	405nm Laser output power: 20mW (CW)	--	Tested inside unit	

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
Blue Diode (for model UJ240/230/141)	Nichia	NDV4322x (x = any character or blank)	405nm Laser output power: 140mW (CW) 280mW (pulse)	--	Tested inside unit	
Alternate (for model UJ240/230/141)	Nichia	NDV4522xx (x = any character or blank)	405nm Laser output power: 200mW (CW) 400mW (pulse)	--	Tested inside unit	
Alternate (for model UJ150)	Sanyo	DL-4366-101x (x = any character or blank)	405nm Laser output power: 20mW (CW)	--	Tested inside unit	
Alternate (for model UJ160)	Nichia	NDV1733x (x = any character or blank)	405nm Laser output power: 20mW (CW)	--	Tested inside unit	
Alternate (for model UJ160/260)	Nichia	NDV4632x (x = any character or blank)	405nm Laser output power: 250mW (CW) 500mW (pulse)	--	Tested inside unit	
DVD/CD Laser Diode (for model UJ-110/-210, UJ-120/-220)	Sanyo	DL-1195-251B	For DVD: 662nm Laser output power: 70mW (CW) 160mW (pulse)  For CD: 784nm Laser output power: 80mW (CW) 240mW (pulse)	--	Tested inside unit	
DVD/CD Laser Diode (for model UJ130A/130E, UJ230A/230E)	Sanyo	DL-1195-261A	For DVD: 662nm Laser output power: 90mW (CW) 300mW (pulse)  For CD: 784nm Laser output power: 160mW (CW) 340mW (pulse)	--	Tested inside unit	
DVD/CD Laser Diode (for model UJ140A)	Panasonic	LNCT16PFx (x = any character or blank)	For DVD: 661nm Laser output power: 90mW (CW) 300mW (pulse)  For CD: 783nm Laser output power: 160mW (CW) 350mW (pulse)	--	Tested inside unit	

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Clause	Requirement + Test	Result - Remark	Verdict
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1.5.1	TABLE: list of critical components				P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>
DVD/CD Laser Diode (for model UJ240/230/141)	Mitsubishi	ML203A7xxx (x = any character or blank)	For DVD: 660nm Laser output power: 200mW (CW) 300mW (pulse)  For CD: 786nm Laser output power: 200mW (CW) 350mW (pulse)	--	Tested inside unit
Alternate	Panasonic	LNCT26PFxx (x = any character or blank)	For DVD: 661.5nm Laser output power: 90mW (CW) 300mW (pulse)  For CD: 783nm Laser output power: 200mW (CW) 350mW (pulse)	--	Tested inside unit
Alternate (for model UJ150)	Panasonic	LNCT22PKx (x = any character or blank)	For DVD: 661nm Laser output power: 100mW (CW) 300mW (pulse)  For CD: 784nm Laser output power: 200mW (CW) 365mW (pulse)	--	Tested inside unit

## Note(s):

<sup>1)</sup> An asterisk indicates a mark that assures the agreed level of surveillance.

## Supplementary information:

The suffix "x" in the type designation above can be any character or blank are used with no difference in specification and electrical characteristics not influence to safety.

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)					P
U (V)	I (A)	I <sub>rated</sub> (A)	P (W)	Fuse No.	I <sub>fuse</sub> (A)	Condition/status
DC 5	0.68	1.6	3.42	--	--	UJ160: BD-ROM read mode
DC 5	0.76	1.6	3.79	--	--	UJ260: BD-R write mode

Supplementary information:

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C) .....				See below.	---
	Power source for EUT: Manufacturer, model/type, output rating .....				--	---
Component No.	Fault	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Spindle motor	L	DC 5	7 hrs.	--	--	Max. measured temp. at surface of motor: 26°C. No hazards. Ambient: 25°C

Supplementary information:  
 During the tests no fire or other hazards occurred.  
 L = locked



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Clause	Requirement + Test	Result - Remark	Verdict

<b>9</b>	<b>DETERMINATION OF ACCESSIBLE EMISSION LEVELS</b> <i>Laser emission through enclosure in the limit of class 1 laser source.</i> <i>Embedded laser class 3B radiation.</i>		<b>P</b>
9.1	Tests	Tests conducted normal and single fault conditions to determine classification.	<b>P</b>
	Single fault eliminated	Not class 4.	<b>N/A</b>
	Housing material withstanding degradation		<b>N/A</b>
	Fault detection		<b>N/A</b>
9.2	Measurement conditions .....	(see appended table)	<b>P</b>
	Measured laser radiation .....	See appended table "measured laser radiation, calculations and comparison with AEL limits".	<b>P</b>
9.3	Measurement geometry	(see appended table)	<b>P</b>
9.3.1	General, evaluation scheme		
	a) Simplified (default) method	(see appended table)	<b>P</b>
	b) Increased AEL by parameter C <sub>6</sub>	Not used.	<b>N/A</b>
9.3.2	Default (simplified) evaluation		<b>P</b>
	Condition applied .....	Applied for Condition 2.	<b>P</b>
	Aperture stop diameter (mm) .....	(see appended table)	<b>P</b>
	Measurement distance (mm) .....	(see appended table)	<b>P</b>
9.3.3	Extended sources	Not used.	<b>N/A</b>
	C <sub>6</sub> .....		<b>N/A</b>
9.3.3a	Aperture diameters		<b>P</b>
	Condition applied .....	Applied for Condition 2.	<b>P</b>
	Aperture stop diameter (mm) .....	(see appended table)	<b>P</b>
	Angular subtense of the apparent source α .....	(see appended table)	<b>P</b>
9.3.3b	Angle of acceptance		<b>P</b>
	Condition applied .....	Applied for Condition 2.	<b>P</b>
	1) Photochemical retinal limits .....	Not used.	<b>N/A</b>
	Angel of acceptance .....		<b>N/A</b>
	2) All other retinal limits .....	(see appended table)	<b>P</b>
	Angel of acceptance .....	(see appended table)	<b>P</b>

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Clause	Requirement + Test	Result - Remark	Verdict

<p><b>Measured laser radiation, calculations and comparison with AEL limits:</b></p> <p>Time base: <math>t = 100s</math>            Size of apparent source: <math>0mrad</math>            Diameter of aperture stop: <math>7mm</math>            Distance of aperture stop to source: <math>r = \text{see below}</math>.            Angular subtense: <math>\alpha = 0mrad (\alpha \leq \alpha_{min}) \rightarrow T_2 = 100s \rightarrow t = T_2</math></p>											
Wavelength $\lambda(nm)$	Formula used	Accessible Emission Limit (AEL)									
		Class 1	Class 3B								
BD: 405	$3.9 \times 10^{-3} J$	3.9mJ (0.039mW) (39 $\mu$ W)	0.5W								
<p><b>Measured laser radiation results: (for DL-4366-101)</b>            (1) &amp; (2): Laser emission through enclosure in the limit of class 1 laser source.            (3) &amp; (4): Embedded laser class 3B radiation.</p>											
<p><b>(1) Normal operation:</b> (<math>r = \text{closest access to laser}</math>)</p> <table border="0"> <tr> <td>- Gap between metal cover – right/left side:</td> <td>0.003<math>\mu</math>W</td> </tr> <tr> <td>- Gap between metal cover – DC connector:</td> <td>0.001<math>\mu</math>W</td> </tr> <tr> <td>- Removed front bezel cover with disc-in:</td> <td>0.07<math>\mu</math>W</td> </tr> <tr> <td>- Removed front bezel cover without disc:</td> <td>2.8<math>\mu</math>W</td> </tr> </table>				- Gap between metal cover – right/left side:	0.003 $\mu$ W	- Gap between metal cover – DC connector:	0.001 $\mu$ W	- Removed front bezel cover with disc-in:	0.07 $\mu$ W	- Removed front bezel cover without disc:	2.8 $\mu$ W
- Gap between metal cover – right/left side:	0.003 $\mu$ W										
- Gap between metal cover – DC connector:	0.001 $\mu$ W										
- Removed front bezel cover with disc-in:	0.07 $\mu$ W										
- Removed front bezel cover without disc:	2.8 $\mu$ W										
<p><b>(2) Single fault condition:</b> (<math>r = \text{closest access to laser}</math>)</p> <table border="0"> <tr> <td>- Gap between metal cover – right/left side:</td> <td>0.001<math>\mu</math>W</td> </tr> <tr> <td>- Gap between metal cover – DC connector:</td> <td>0.001<math>\mu</math>W</td> </tr> <tr> <td>- Removed front bezel cover with disc-in:</td> <td>0.23<math>\mu</math>W</td> </tr> <tr> <td>- Removed front bezel cover without disc:</td> <td>6.15<math>\mu</math>W</td> </tr> </table>				- Gap between metal cover – right/left side:	0.001 $\mu$ W	- Gap between metal cover – DC connector:	0.001 $\mu$ W	- Removed front bezel cover with disc-in:	0.23 $\mu$ W	- Removed front bezel cover without disc:	6.15 $\mu$ W
- Gap between metal cover – right/left side:	0.001 $\mu$ W										
- Gap between metal cover – DC connector:	0.001 $\mu$ W										
- Removed front bezel cover with disc-in:	0.23 $\mu$ W										
- Removed front bezel cover without disc:	6.15 $\mu$ W										
<b>(3) Laser pick-up direct:</b> ( $r = 70$ )		48.9mW*									
<b>(4) Laser pick-up direct:</b> ( $r = 100$ )		31.0 $\mu$ W*									
<p>Note:            - (1) measured normal operation condition with continuous writing (pulsed) as mfg. setting.            - (2), (3) &amp; (4) are measured abnormal condition with maximum power continuous writing (pulsed) as mfg. setting.            * measured radiation direct from BD is over the limit of class 1 but lower than class 1M requirement.            Caution label on equipment is stated with class 3B as worst case condition. Therefore, class 1M caution label is not required.</p>											



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Clause	Requirement + Test	Result - Remark	Verdict

Appended table	EQUIPMENT MANUFACTURE INFORMATION ( DATA SHEET ) ABOUT THE CONTAINING LASER COMPONENT/S		P
	Manufacturer .....	(see appended table 1.5.1)	—
	Type designation .....		—
	Structure .....		—
	Wavelength .....		—
	Output power (min. and max.) .....		—
	Radiation is		—
	Continuous .....	Continuous.	—
	Pulsed .....	—	—
	Pulse time .....	—	—
	Pulse repetition frequency .....	—	—
	Others .....	—	—

	PIC UP UNIT		P
	Manufacturer .....	(see appended table 1.5.1)	—
	Type designation .....		—
	Others .....	—	—
		—	—

	TRANSMITTER/TRANSCIEVER UNIT		P
	Manufacturer .....	Yokogawa	—
	Type designation .....	3292 01 (Optical Power Meter) 3293 05 (Optical Power Sensor)	—
	Others .....	—	—

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Clause	Requirement + Test	Result - Remark	Verdict

**List of test equipment used:**

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
--	--	--	--	--

Supplementary information:

No listing of test equipment used necessary for chosen test procedure.