

CERTIFICATE OF CONFORMITY

Project NO. :	<u>ZHCH2011-1580</u>	Test By:	<u>No.5</u>
Standard:	<u>IEC</u>	Length:	<u>4240</u> m
Type:	<u>OPGW-2S2/48B1</u>	G.W.:	<u>2750</u> kg
Specification:	<u>0/93-55.3</u>	N.W.:	<u>2523</u> kg
Manufacturing date:	<u>2011-12-7</u>	Ex-Work NO.:	<u>1</u>

All the test results meet the technical requirements of ZHCH2011-1580.



Quality Control Dept.

Zhongtian Hitachi Optical Fiber Cable Co., Ltd



CERTIFICATE OF CONFORMITY

Project NO. : ZHCH2011-1580

Test By: No.14

Standard: IEC

Length: 3400 m

Type: OPGW-2S2/48B1

G.W.: 2240 kg

Specification: 0/93-55.3

N.W.: 2023 kg

Manufacturing date: 2011-12-5

Ex-Work NO.: 2

All the test results meet the technical requirements of ZHCH2011-1580.



Quality Control Dept.

Zhongtian Hitachi Optical Fiber Cable Co.,Ltd



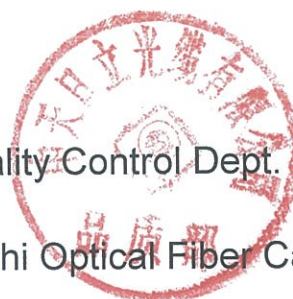
CERTIFICATE OF CONFORMITY

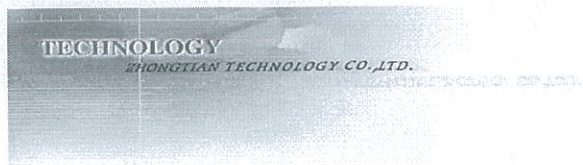
Project NO. :	<u>ZHCH2011-1580</u>	Test By:	<u>No.5</u>
Standard:	<u>IEC</u>	Length:	<u>3100</u> m
Type:	<u>OPGW-2S2/48B1</u>	G.W.:	<u>2070</u> kg
Specification:	<u>0/93-55.3</u>	N.W.:	<u>1844</u> kg
Manufacturing date:	<u>2011-12-6</u>	Ex-Work NO.:	<u>3</u>

All the test results meet the technical requirements of ZHCH2011-1580.

Quality Control Dept.

Zhongtian Hitachi Optical Fiber Cable Co., Ltd





CERTIFICATE OF CONFORMITY

Project NO. :	<u>ZHCH2011-1580</u>	Test By:	<u>No.11</u>
Standard:	<u>IEC</u>	Length:	<u>5000</u> m
Type:	<u>OPGW-2S2/48B1</u>	G.W.:	<u>3210</u> kg
Specification:	<u>0/93-55.3</u>	N.W.:	<u>2975</u> kg
Manufacturing date:	<u>2011-11-30</u>	Ex-Work NO.:	<u>4</u>

All the test results meet the technical requirements of ZHCH2011-1580.



Quality Control Dept.

Zhongtian Hitachi Optical Fiber Cable Co.,Ltd



CERTIFICATE OF CONFORMITY

Project NO. :	<u>ZHCH2011-1580</u>	Test By:	<u>No.11</u>
Standard:	<u>IEC</u>	Length:	<u>4680</u> m
Type:	<u>OPGW-2S2/48B1</u>	G.W.:	<u>3010</u> kg
Specification:	<u>0/93-55.3</u>	N.W.:	<u>2784</u> kg
Manufacturing date:	<u>2011-12-5</u>	Ex-Work NO.:	<u>5</u>

All the test results meet the technical requirements of ZHCH2011-1580.

Quality Control Dept.

Zhongtian Hitachi Optical Fiber Cable Co.,Ltd



CERTIFICATE OF CONFORMITY

Project NO. :	<u>ZHCH2011-1580</u>	Test By:	<u>No.3</u>
Standard:	<u>IEC</u>	Length:	<u>4250</u> m
Type:	<u>OPGW-2S2/48B1</u>	G.W.:	<u>2760</u> kg
Specification:	<u>0/93-55.3</u>	N.W.:	<u>2528</u> kg
Manufacturing date:	<u>2011-11-30</u>	Ex-Work NO.:	<u>6</u>

All the test results meet the technical requirements of ZHCH2011-1580.

Quality Control Dept.

Zhongtian Hitachi Optical Fiber Cable Co.,Ltd



Number : BY11-11-2011

BY/ZHC10304 (0)

OPGW EX-WORK TEST REPORT

OPGW Type: OPGW-2S2/48B1(0/93-55.3)

Contract NO.: W11340

Project Name: MANNIKS.COM Oü Project

Client: MANNIKS.COM Oü


Zhongtian Hitachi Optical Fiber Cable Co.,Ltd



1.OPGW CABLE EX-WORK LIST

OPGW TYPE: OPGW-2S2/48B1(0/93-55.3)

Serial number	Remark	Length of drum (m)		Serial number	Remark	Length of drum (m)
01	1	4240		04	4	5000
02	2	3400		05	5	4680
03	3	3100		06	6	4250
Remark: Total length		24670	m.			

1.Test Standard: IEC 61394-4-1,IEEE 1138 and DL/T832-2003.

2.Sampling Method: Full test of attenuation, and other items according to contract requirement.

3.Conclusion: The above goods after tested are QUALIFIED PRODUCTS according to the requirement of contract. Allowed to leave the factory.



Submitted By: 徐文倩

Verified By: 杨小兰

2. OPGW and Component Wire Performance Test Report

		Item	Unit	Standard Requirment	Test result	Judgment
Component Wire	AS Wire	Diameter	mm	2.4 ± 0.04	2.403	Qualified
				3.0 ± 1.5%	3.002	Qualified
		Tensile Strength	Mpa	≥1340(2.4mm)	1421.63	Qualified
				≥880(3.0mm)	971.89	Qualified
		Stress at 1% elongation	Mpa	≥1200(2.4mm)	1286.42	Qualified
				≥650(3.0mm)	759.69	Qualified
		Elongation at breaking	%	≥1.5	2.1(2.4mm)	Qualified
					2.3(3.0mm)	Qualified
		20℃Resistivity	nΩ·m	≤84.8(2.4mm)	82.86	Qualified
				≤57.47(3.0mm)	55.69	Qualified
		Twist	cycles	≥20	47(2.4mm)	Qualified
					45(3.0mm)	Qualified
		Min. thickness of aluminium	mm	≥0.120(2.4mm)	0.126	Qualified
				≥0.225(3.0mm)	0.232	Qualified
Finished OPGW	Diameter of the OP Unit		mm	2.4 ± 0.05	2.40	Qualified
	Overall Diameter of OPGW		mm	13.2± 1.0	13.20	Qualified
	Lay ratio	Inner layer	/	10~16	13.61	Qualified
		Outer Layer	/	10~14	10.91	Qualified
	Derection of outer Layer		/	Right	Right	Qualified
	Surface Condition		/	Good	Good	Qualified

Submitted By:

徐文倩

Verified By:

缪小兰

3-1. Optics Performance

Drum No.	1	Type	OPGW-2S2/48B1(0/93-55.3)						length		4240 m	
OP-UNIT No.	fiber color	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion		
					1310nm	1550nm		1310nm	1550nm	1285~1339nm	1550nm	
1	Specification	125±0.7	≤0.5	≤1.0	9.2±0.4	10.4±0.5	≤1260	≤0.36	≤0.22	≤ 3.5	≤ 18	
	Unit	μm	μm	%	μm	μm	nm	dB/km		PS/nm.km		
	Blue	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.325	0.180	≤ 3.5	≤ 18	
	Orange	125.0	≤0.5	≤1.0	9.1	10.2	≤1260	0.320	0.180	≤ 3.5	≤ 18	
	Green	125.2	≤0.5	≤1.0	9.2	10.1	≤1260	0.325	0.183	≤ 3.5	≤ 18	
	Brown	125.2	≤0.5	≤1.0	9.1	10.0	≤1260	0.323	0.175	≤ 3.5	≤ 18	
	Gray	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.325	0.180	≤ 3.5	≤ 18	
	White	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.324	0.179	≤ 3.5	≤ 18	
	Red	124.9	≤0.5	≤1.0	9.0	10.2	≤1260	0.320	0.174	≤ 3.5	≤ 18	
	Black	125.2	≤0.5	≤1.0	9.2	10.1	≤1260	0.323	0.180	≤ 3.5	≤ 18	
	Yellow	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.317	0.187	≤ 3.5	≤ 18	
	Violet	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.178	≤ 3.5	≤ 18	
	Pink	124.9	≤0.5	≤1.0	9.2	10.2	≤1260	0.323	0.181	≤ 3.5	≤ 18	
	Aqua	125.2	≤0.5	≤1.0	9.0	10.1	≤1260	0.321	0.178	≤ 3.5	≤ 18	
	Blue	125.1	≤0.5	≤1.0	9.1	10.0	≤1260	0.323	0.178	≤ 3.5	≤ 18	
	Orange	125.0	≤0.5	≤1.0	9.0	10.1	≤1260	0.322	0.180	≤ 3.5	≤ 18	
	Green	125.2	≤0.5	≤1.0	9.0	10.2	≤1260	0.318	0.179	≤ 3.5	≤ 18	
	Brown	125.1	≤0.5	≤1.0	9.2	10.1	≤1260	0.321	0.176	≤ 3.5	≤ 18	
	Gray	125.0	≤0.5	≤1.0	9.1	10.1	≤1260	0.320	0.181	≤ 3.5	≤ 18	
	White	124.9	≤0.5	≤1.0	9.0	10.2	≤1260	0.323	0.175	≤ 3.5	≤ 18	
	Red	125.0	≤0.5	≤1.0	9.1	10.1	≤1260	0.323	0.182	≤ 3.5	≤ 18	
	Nature	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.316	0.177	≤ 3.5	≤ 18	
	Yellow	125.0	≤0.5	≤1.0	9.1	10.0	≤1260	0.322	0.179	≤ 3.5	≤ 18	
	Violet	125.0	≤0.5	≤1.0	9.2	10.2	≤1260	0.324	0.184	≤ 3.5	≤ 18	
	Pink	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.181	≤ 3.5	≤ 18	
Aqua	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.323	0.183	≤ 3.5	≤ 18		

Fibre colour: S60-single colouring printed each 60mm

Fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.5

Test date:

2011-12-7

3-1. Optics Performance

Drum No.	1	Type	OPGW-2S2/48B1(0/93-55.3)										length		4240 m	
OP-UNIT No.	fiber color	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation	Dispersion							
					1310nm	1550nm				1310nm	1550nm	1285~1339nm	1550nm			
2	Specification	125±0.7	≤0.5	≤1.0	9.2±0.4	10.4±0.5	≤1260	≤0.36	≤ 3.5	≤ 18						
	Unit	μm	μm	%	μm	μm	nm	dB/km	PS/nm.km							
	Blue	125.0	≤0.5	≤1.0	9.2	10.2	≤1260	0.320	0.179	≤ 3.5	≤ 18					
	Orange	125.1	≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.183	≤ 3.5	≤ 18					
	Green	124.9	≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.178	≤ 3.5	≤ 18					
	Brown	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.326	0.177	≤ 3.5	≤ 18					
	Gray	125.0	≤0.5	≤1.0	9.1	10.1	≤1260	0.325	0.176	≤ 3.5	≤ 18					
	White	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	0.325	0.177	≤ 3.5	≤ 18					
	Red	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.328	0.182	≤ 3.5	≤ 18					
	Black	125.0	≤0.5	≤1.0	9.1	10.2	≤1260	0.326	0.182	≤ 3.5	≤ 18					
	Yellow	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.326	0.184	≤ 3.5	≤ 18					
	Violet	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.321	0.185	≤ 3.5	≤ 18					
	Pink	125.0	≤0.5	≤1.0	9.2	10.0	≤1260	0.324	0.176	≤ 3.5	≤ 18					
	Aqua	125.2	≤0.5	≤1.0	9.0	10.1	≤1260	0.320	0.181	≤ 3.5	≤ 18					
	Blue	124.9	≤0.5	≤1.0	9.1	10.2	≤1260	0.324	0.185	≤ 3.5	≤ 18					
	Orange	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.322	0.184	≤ 3.5	≤ 18					
	Green	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	0.328	0.182	≤ 3.5	≤ 18					
	Brown	125.0	≤0.5	≤1.0	9.0	10.1	≤1260	0.327	0.187	≤ 3.5	≤ 18					
	Gray	125.1	≤0.5	≤1.0	9.1	10.2	≤1260	0.323	0.181	≤ 3.5	≤ 18					
	White	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.182	≤ 3.5	≤ 18					
	Red	125.2	≤0.5	≤1.0	9.2	10.1	≤1260	0.324	0.182	≤ 3.5	≤ 18					
	Nature	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	0.323	0.178	≤ 3.5	≤ 18					
	Yellow	124.9	≤0.5	≤1.0	9.0	10.2	≤1260	0.328	0.186	≤ 3.5	≤ 18					
	Violet	125.2	≤0.5	≤1.0	9.1	10.0	≤1260	0.324	0.182	≤ 3.5	≤ 18					
Pink	125.0	≤0.5	≤1.0	9.0	10.1	≤1260	0.324	0.182	≤ 3.5	≤ 18						
Aqua	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	0.322	0.186	≤ 3.5	≤ 18						

3-2. Optics Performance

Drum No.	OP-UNIT No.	2	Type	OPGW-2S2/48B1(0/93-55.3)						length		3400 m	
				Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion	
							1310nm	1550nm		1310nm	1550nm	1285~1339nm	1550nm
1		Specification	125±0.7	μm	≤0.5	≤1.0	9.2±0.4	10.4±0.5	λ _c	≤0.36	≤0.22	≤3.5	≤18
		Unit			μm	%	μm		nm	dB/km		PS/nm.km	
		Blue	125.2	μm	≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.185	≤3.5	≤18
		Orange	125.0		≤0.5	≤1.0	9.1	10.2	≤1260	0.324	0.181	≤3.5	≤18
		Green	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.324	0.184	≤3.5	≤18
		Brown	125.2		≤0.5	≤1.0	9.1	10.0	≤1260	0.325	0.186	≤3.5	≤18
		Gray	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.186	≤3.5	≤18
		White	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.181	≤3.5	≤18
		Red	124.9		≤0.5	≤1.0	9.0	10.2	≤1260	0.321	0.179	≤3.5	≤18
		Black	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.325	0.178	≤3.5	≤18
		Yellow	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.320	0.180	≤3.5	≤18
		Violet	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.322	0.185	≤3.5	≤18
		Pink	124.9		≤0.5	≤1.0	9.2	10.2	≤1260	0.325	0.182	≤3.5	≤18
		Aqua	125.2		≤0.5	≤1.0	9.0	10.1	≤1260	0.318	0.178	≤3.5	≤18
		Blue	125.1		≤0.5	≤1.0	9.1	10.0	≤1260	0.324	0.182	≤3.5	≤18
		Orange	125.0		≤0.5	≤1.0	9.0	10.1	≤1260	0.325	0.178	≤3.5	≤18
		Green	125.2		≤0.5	≤1.0	9.0	10.2	≤1260	0.319	0.186	≤3.5	≤18
		Brown	125.1		≤0.5	≤1.0	9.2	10.1	≤1260	0.319	0.179	≤3.5	≤18
		Gray	125.0		≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.180	≤3.5	≤18
		White	124.9		≤0.5	≤1.0	9.0	10.2	≤1260	0.321	0.179	≤3.5	≤18
		Red	125.0		≤0.5	≤1.0	9.1	10.1	≤1260	0.321	0.181	≤3.5	≤18
		Nature	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.184	≤3.5	≤18
		Yellow	125.0		≤0.5	≤1.0	9.1	10.0	≤1260	0.322	0.178	≤3.5	≤18
		Violet	125.0		≤0.5	≤1.0	9.2	10.2	≤1260	0.324	0.184	≤3.5	≤18
		Pink	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.326	0.181	≤3.5	≤18
		Aqua	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.320	0.179	≤3.5	≤18

Fibre colour: S60-single colouring printed each 60mm

Fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.14

Test date:

2011-12-5

3-2. Optics Performance

Drum No.	2		Type	OPGW-2S2/48B1(0/93-55.3)						length		3400 m	
OP-UNIT No.	Color ring	fiber color	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion		
						1310nm	1550nm		λ _c	1310nm	1550nm	1285~1339nm	1550nm
2	Specification	125±0.7	µm	≤0.5	≤1.0	9.2±0.4	10.4±0.5	≤1260	≤0.36	≤0.22	≤3.5	≤18	
	Unit			µm	%		µm	nm	dB/km				
	Blue	125.0		≤0.5	≤1.0	9.2	10.2	≤1260	0.323	0.180	≤3.5	≤18	
	Orange	125.1		≤0.5	≤1.0	9.0	10.0	≤1260	0.322	0.181	≤3.5	≤18	
	Green	124.9		≤0.5	≤1.0	9.1	10.1	≤1260	0.323	0.180	≤3.5	≤18	
	Brown	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.320	0.182	≤3.5	≤18	
	Gray	125.0		≤0.5	≤1.0	9.1	10.1	≤1260	0.320	0.182	≤3.5	≤18	
	White	125.1		≤0.5	≤1.0	9.2	10.2	≤1260	0.320	0.181	≤3.5	≤18	
	Red	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.178	≤3.5	≤18	
	Black	125.0		≤0.5	≤1.0	9.1	10.2	≤1260	0.323	0.178	≤3.5	≤18	
	Yellow	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.321	0.181	≤3.5	≤18	
	Violet	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.183	≤3.5	≤18	
	Pink	125.0		≤0.5	≤1.0	9.2	10.0	≤1260	0.322	0.182	≤3.5	≤18	
	Aqua	125.2		≤0.5	≤1.0	9.0	10.1	≤1260	0.319	0.179	≤3.5	≤18	
	Blue	124.9		≤0.5	≤1.0	9.1	10.2	≤1260	0.322	0.179	≤3.5	≤18	
	Orange	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.322	0.184	≤3.5	≤18	
	Green	125.1		≤0.5	≤1.0	9.2	10.2	≤1260	0.321	0.183	≤3.5	≤18	
	Brown	125.0		≤0.5	≤1.0	9.0	10.1	≤1260	0.321	0.185	≤3.5	≤18	
	Gray	125.1		≤0.5	≤1.0	9.1	10.2	≤1260	0.322	0.181	≤3.5	≤18	
	White	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.319	0.184	≤3.5	≤18	
	Red	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.321	0.179	≤3.5	≤18	
	Nature	125.1		≤0.5	≤1.0	9.2	10.2	≤1260	0.317	0.180	≤3.5	≤18	
	Yellow	124.9		≤0.5	≤1.0	9.0	10.2	≤1260	0.319	0.184	≤3.5	≤18	
	Violet	125.2		≤0.5	≤1.0	9.1	10.0	≤1260	0.322	0.184	≤3.5	≤18	
Pink	125.0		≤0.5	≤1.0	9.0	10.1	≤1260	0.322	0.184	≤3.5	≤18		
Aqua	125.1		≤0.5	≤1.0	9.2	10.2	≤1260	0.319	0.184	≤3.5	≤18		

Fibre colour: D80- double colouring printed each 80mm.

fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.14

Test date:

2011-12-5

3-3. Optics Performance

Drum No.	OP-UNIT No.	3	Type	OPGW-2S2/48B1(0/93-55.3)						length		3100 m	
				Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion	
							1310nm	1550nm		1310nm	1550nm	1285~1339nm	1550nm
1	S60	Specification	125±0.7	/	≤0.5	≤1.0	9.2±0.4	10.4±0.5	≤1260	≤0.36	≤0.22	≤3.5	≤18
		Unit	μm		μm	%	μm		nm	dB/km		PS/nm.km	
		Blue	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.317	0.175	≤3.5	≤18
		Orange	125.0		≤0.5	≤1.0	9.1	10.2	≤1260	0.318	0.180	≤3.5	≤18
		Green	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.319	0.183	≤3.5	≤18
		Brown	125.2		≤0.5	≤1.0	9.1	10.0	≤1260	0.318	0.175	≤3.5	≤18
		Gray	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.319	0.181	≤3.5	≤18
		White	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.317	0.180	≤3.5	≤18
		Red	124.9		≤0.5	≤1.0	9.0	10.2	≤1260	0.323	0.177	≤3.5	≤18
		Black	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.321	0.180	≤3.5	≤18
		Yellow	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.181	≤3.5	≤18
		Violet	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.318	0.183	≤3.5	≤18
		Pink	124.9		≤0.5	≤1.0	9.2	10.2	≤1260	0.319	0.183	≤3.5	≤18
		Aqua	125.2		≤0.5	≤1.0	9.0	10.1	≤1260	0.318	0.176	≤3.5	≤18
		Blue	125.1		≤0.5	≤1.0	9.1	10.0	≤1260	0.319	0.181	≤3.5	≤18
		Orange	125.0		≤0.5	≤1.0	9.0	10.1	≤1260	0.322	0.181	≤3.5	≤18
		Green	125.2		≤0.5	≤1.0	9.0	10.2	≤1260	0.323	0.179	≤3.5	≤18
		Brown	125.1		≤0.5	≤1.0	9.2	10.1	≤1260	0.316	0.177	≤3.5	≤18
		Gray	125.0		≤0.5	≤1.0	9.1	10.1	≤1260	0.318	0.185	≤3.5	≤18
		White	124.9		≤0.5	≤1.0	9.0	10.2	≤1260	0.322	0.188	≤3.5	≤18
		Red	125.0		≤0.5	≤1.0	9.1	10.1	≤1260	0.318	0.182	≤3.5	≤18
		Nature	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.320	0.185	≤3.5	≤18
		Yellow	125.0		≤0.5	≤1.0	9.1	10.0	≤1260	0.321	0.183	≤3.5	≤18
		Violet	125.0		≤0.5	≤1.0	9.2	10.2	≤1260	0.313	0.179	≤3.5	≤18
		Pink	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.182	≤3.5	≤18
		Aqua	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.321	0.185	≤3.5	≤18

Fibre colour: S60-single colouring printed each 60mm

Fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.5

Test date:

2011-12-6

3-3. Optics Performance

Drum No.	3	Type	OPGW-2S2/48B1(0/93-55.3)						length		3100 m	
			fiber color	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion
							1310nm	1550nm		1310nm	1550nm	
OP-UNIT No.	Color ring	Specification	Unit	μm	≤0.5	≤1.0	μm		λ _c	dB/km		PS/nm.km
							9.2±0.4	10.4±0.5		≤0.36	≤0.22	
2	/	Blue	125.0	≤0.5	≤1.0	9.2	10.2	≤1260	≤1260	0.318	0.183	≤3.5
		Orange	125.1	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.319	0.181	≤3.5
		Green	124.9	≤0.5	≤1.0	9.1	10.1	≤1260	≤1260	0.320	0.185	≤3.5
		Brown	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.327	0.184	≤3.5
		Gray	125.0	≤0.5	≤1.0	9.1	10.1	≤1260	≤1260	0.317	0.177	≤3.5
		White	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	≤1260	0.319	0.174	≤3.5
		Red	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.317	0.177	≤3.5
		Black	125.0	≤0.5	≤1.0	9.1	10.2	≤1260	≤1260	0.317	0.182	≤3.5
		Yellow	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.323	0.178	≤3.5
		Violet	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	≤1260	0.322	0.185	≤3.5
	D80	Pink	125.0	≤0.5	≤1.0	9.2	10.0	≤1260	≤1260	0.330	0.186	≤3.5
		Aqua	125.2	≤0.5	≤1.0	9.0	10.1	≤1260	≤1260	0.318	0.172	≤3.5
		Blue	124.9	≤0.5	≤1.0	9.1	10.2	≤1260	≤1260	0.326	0.178	≤3.5
		Orange	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.321	0.180	≤3.5
		Green	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	≤1260	0.319	0.181	≤3.5
		Brown	125.0	≤0.5	≤1.0	9.0	10.1	≤1260	≤1260	0.319	0.180	≤3.5
		Gray	125.1	≤0.5	≤1.0	9.1	10.2	≤1260	≤1260	0.322	0.183	≤3.5
		White	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.319	0.178	≤3.5
		Red	125.2	≤0.5	≤1.0	9.2	10.1	≤1260	≤1260	0.317	0.176	≤3.5
		Nature	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	≤1260	0.323	0.181	≤3.5
		Yellow	124.9	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.318	0.178	≤3.5
		Violet	125.2	≤0.5	≤1.0	9.1	10.1	≤1260	≤1260	0.320	0.184	≤3.5
		Pink	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	≤1260	0.321	0.187	≤3.5
		Aqua	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	≤1260	0.313	0.182	≤3.5

Fibre colour: D80- double colouring printed each 80mm.

fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.5

Test date:

2011-12-6

3-4. Optics Performance

Drum No.	4	Type	OPGW-2S2/48B1(0/93-55.3)					length		5000 m	
			fiber color	Cladding Non-circularity	Core Concentricity Error	Mode Field Diameter		Cut-off length	Attenuation		Dispersion
						1310nm	1550nm		1310nm	1550nm	
OP-UNIT No.	Color ring	Specification	Unit	≤1.0	μm	μm		λ _c	dB/km		PS/nm.km
						9.2±0.4	10.4±0.5		≤0.36	≤0.22	
1	S60	125±0.7	μm	≤1.0	≤0.5	9.1	10.2	≤1260	0.322	0.184	≤3.5
		Blue	125.2	≤1.0	≤0.5	9.1	10.2	≤1260	0.325	0.183	≤3.5
		Orange	125.1	≤1.0	≤0.5	9.0	10.0	≤1260	0.322	0.182	≤3.5
		Green	125.0	≤1.0	≤0.5	9.2	10.1	≤1260	0.322	0.181	≤3.5
		Brown	125.2	≤1.0	≤0.5	9.2	10.0	≤1260	0.324	0.177	≤3.5
		Gray	125.2	≤1.0	≤0.5	9.1	10.1	≤1260	0.323	0.183	≤3.5
		White	125.1	≤1.0	≤0.5	9.0	10.0	≤1260	0.321	0.180	≤3.5
		Red	124.9	≤1.0	≤0.5	9.2	10.1	≤1260	0.321	0.182	≤3.5
		Black	125.0	≤1.0	≤0.5	9.1	10.0	≤1260	0.321	0.179	≤3.5
		Yellow	125.1	≤1.0	≤0.5	9.0	10.2	≤1260	0.321	0.183	≤3.5
		Violet	125.0	≤1.0	≤0.5	9.2	10.1	≤1260	0.324	0.182	≤3.5
		Pink	125.1	≤1.0	≤0.5	9.1	10.0	≤1260	0.327	0.184	≤3.5
		Aqua	125.0	≤1.0	≤0.5	9.2	10.1	≤1260	0.325	0.185	≤3.5
		Blue	125.2	≤1.0	≤0.5	9.0	10.2	≤1260	0.322	0.180	≤3.5
		Orange	125.1	≤1.0	≤0.5	9.1	10.0	≤1260	0.323	0.178	≤3.5
		Green	125.0	≤1.0	≤0.5	9.2	10.1	≤1260	0.326	0.189	≤3.5
		Brown	125.1	≤1.0	≤0.5	9.0	10.0	≤1260	0.324	0.184	≤3.5
		Gray	125.0	≤1.0	≤0.5	9.1	10.2	≤1260	0.325	0.184	≤3.5
		White	125.0	≤1.0	≤0.5	9.2	10.1	≤1260	0.325	0.181	≤3.5
		Red	125.2	≤1.0	≤0.5	9.0	10.2	≤1260	0.325	0.187	≤3.5
		Nature	125.1	≤1.0	≤0.5	9.2	10.1	≤1260	0.322	0.184	≤3.5
		Yellow	125.1	≤1.0	≤0.5	9.1	10.0	≤1260	0.325	0.187	≤3.5
		Violet	125.2	≤1.0	≤0.5	9.0	10.2	≤1260	0.325	0.187	≤3.5
		Pink	124.9	≤1.0	≤0.5	9.2	10.1	≤1260	0.323	0.186	≤3.5
		Aqua	125.0	≤1.0	≤0.5	9.0	10.0	≤1260	0.323	0.186	≤3.5

Fibre colour: S60-single colouring printed each 60mm

Fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.11

Test date:

2011-11-30

3-4. Optics Performance

Drum No.	OP-UNIT No.	4	Type	OPGW-2S2/48B1(0/93-55.3)						length		5000 m	
				Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion	
							1310nm	1550nm		1310nm	1550nm	1285~1339nm	1550nm
		Specification	125±0.7	μm	≤0.5	≤1.0	9.2±0.4	10.4±0.5	λ _{oc}	≤0.36	≤0.22	≤3.5	≤18
		Unit				%		μm	nm			PS/nm.km	
		Blue	125.2		≤0.5	≤1.0	9.2	10.0	≤1260	0.327	0.187	≤3.5	≤18
		Orange	125.0		≤0.5	≤1.0	9.0	10.2	≤1260	0.325	0.186	≤3.5	≤18
		Green	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.323	0.185	≤3.5	≤18
		Brown	125.2		≤0.5	≤1.0	9.1	10.0	≤1260	0.326	0.185	≤3.5	≤18
		Gray	125.1		≤0.5	≤1.0	9.0	10.0	≤1260	0.325	0.183	≤3.5	≤18
		White	125.0		≤0.5	≤1.0	9.1	10.2	≤1260	0.322	0.181	≤3.5	≤18
		Red	125.0		≤0.5	≤1.0	9.0	10.1	≤1260	0.320	0.183	≤3.5	≤18
		Black	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.324	0.184	≤3.5	≤18
		Yellow	125.2		≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.184	≤3.5	≤18
		Violet	125.1		≤0.5	≤1.0	9.1	10.0	≤1260	0.319	0.182	≤3.5	≤18
		Pink	124.9		≤0.5	≤1.0	9.0	10.2	≤1260	0.323	0.179	≤3.5	≤18
		Aqua	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.320	0.181	≤3.5	≤18
		Blue	125.1		≤0.5	≤1.0	9.1	10.0	≤1260	0.324	0.184	≤3.5	≤18
		Orange	125.0		≤0.5	≤1.0	9.0	10.1	≤1260	0.323	0.184	≤3.5	≤18
		Green	125.2		≤0.5	≤1.0	9.2	10.2	≤1260	0.326	0.182	≤3.5	≤18
		Brown	125.1		≤0.5	≤1.0	9.1	10.0	≤1260	0.320	0.183	≤3.5	≤18
		Gray	125.0		≤0.5	≤1.0	9.1	10.1	≤1260	0.321	0.185	≤3.5	≤18
		White	125.1		≤0.5	≤1.0	9.0	10.2	≤1260	0.322	0.183	≤3.5	≤18
		Red	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.323	0.183	≤3.5	≤18
		Nature	124.9		≤0.5	≤1.0	9.2	10.2	≤1260	0.323	0.185	≤3.5	≤18
		Yellow	125.1		≤0.5	≤1.0	9.1	10.0	≤1260	0.325	0.184	≤3.5	≤18
		Violet	125.2		≤0.5	≤1.0	9.2	10.1	≤1260	0.325	0.184	≤3.5	≤18
		Pink	125.0		≤0.5	≤1.0	9.0	10.0	≤1260	0.325	0.185	≤3.5	≤18
		Aqua	125.1		≤0.5	≤1.0	9.1	10.1	≤1260	0.313	0.182	≤3.5	≤18

Fibre colour: D80- double colouring printed each 80mm.

fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.11

Test date:

2011-11-30

3-5. Optics Performance

Drum No.	5	Type	OPGW-2S2/48B1(0/93-55.3)						length		4680 m	
			fiber color	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion
							1310nm	1550nm		1310nm	1550nm	
OP-UNIT No.	Color ring	Specification	125±0.7	≤0.5	≤1.0	9.2±0.4	10.4±0.5	≤1260	≤0.36	≤0.22	≤3.5	≤18
		Unit	μm	μm	%	μm	μm	nm	dB/km	PS/nm.km		
1	/	Blue	125.2	≤0.5	≤1.0	9.1	10.2	≤1260	0.324	0.181	≤3.5	≤18
		Orange	125.1	≤0.5	≤1.0	9.1	10.2	≤1260	0.319	0.184	≤3.5	≤18
		Green	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.184	≤3.5	≤18
		Brown	125.2	≤0.5	≤1.0	9.2	10.1	≤1260	0.316	0.183	≤3.5	≤18
		Gray	125.2	≤0.5	≤1.0	9.2	10.0	≤1260	0.324	0.184	≤3.5	≤18
		White	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.182	≤3.5	≤18
		Red	124.9	≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.182	≤3.5	≤18
		Black	125.0	≤0.5	≤1.0	9.2	10.1	≤1260	0.322	0.182	≤3.5	≤18
		Yellow	125.1	≤0.5	≤1.0	9.1	10.0	≤1260	0.322	0.182	≤3.5	≤18
		Violet	125.0	≤0.5	≤1.0	9.0	10.2	≤1260	0.310	0.182	≤3.5	≤18
		Pink	125.1	≤0.5	≤1.0	9.2	10.1	≤1260	0.324	0.184	≤3.5	≤18
		Aqua	125.0	≤0.5	≤1.0	9.1	10.0	≤1260	0.319	0.180	≤3.5	≤18
	S60	Blue	125.2	≤0.5	≤1.0	9.0	10.2	≤1260	0.322	0.180	≤3.5	≤18
		Orange	125.1	≤0.5	≤1.0	9.2	10.1	≤1260	0.320	0.183	≤3.5	≤18
		Green	125.0	≤0.5	≤1.0	9.1	10.0	≤1260	0.323	0.183	≤3.5	≤18
		Brown	125.1	≤0.5	≤1.0	9.0	10.0	≤1260	0.320	0.183	≤3.5	≤18
		Gray	125.0	≤0.5	≤1.0	9.1	10.2	≤1260	0.323	0.183	≤3.5	≤18
		White	125.0	≤0.5	≤1.0	9.2	10.0	≤1260	0.324	0.183	≤3.5	≤18
		Red	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.324	0.186	≤3.5	≤18
		Nature	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.324	0.185	≤3.5	≤18
		Yellow	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	0.324	0.183	≤3.5	≤18
		Violet	125.2	≤0.5	≤1.0	9.1	10.1	≤1260	0.321	0.182	≤3.5	≤18
		Pink	124.9	≤0.5	≤1.0	9.0	10.2	≤1260	0.323	0.182	≤3.5	≤18
		Aqua	125.0	≤0.5	≤1.0	9.2	10.0	≤1260	0.317	0.180	≤3.5	≤18

Fibre colour: S60-single colouring printed each 60mm

Fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.11

Test date:

2011-12-5

3-5. Optics Performance

Drum No.	5	Type	OPGW-2S2/48B1(0/93-55.3)						length		4680 m	
			fiber color	Color ring	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Dispersion	
								1310nm	1550nm		1285~1339nm	1550nm
2	D80	Specification	125±0.7		μm	≤0.5	≤1.0	9.2±0.4	10.4±0.5	λ _{cc}	≤0.36	≤18
		Unit			μm		%			nm	PS/nm.km	
		Blue	125.2			≤0.5	≤1.0	9.2	10.0	≤1260	0.324	≤3.5
		Orange	125.0			≤0.5	≤1.0	9.0	10.2	≤1260	0.322	≤3.5
		Green	125.1			≤0.5	≤1.0	9.1	10.1	≤1260	0.324	≤3.5
		Brown	125.2			≤0.5	≤1.0	9.1	10.0	≤1260	0.323	≤3.5
		Gray	125.1			≤0.5	≤1.0	9.0	10.0	≤1260	0.320	≤3.5
		White	125.0			≤0.5	≤1.0	9.1	10.2	≤1260	0.323	≤3.5
		Red	125.0			≤0.5	≤1.0	9.0	10.1	≤1260	0.324	≤3.5
		Black	125.2			≤0.5	≤1.0	9.2	10.1	≤1260	0.324	≤3.5
		Yellow	125.2			≤0.5	≤1.0	9.0	10.0	≤1260	0.326	≤3.5
		Violet	125.1			≤0.5	≤1.0	9.1	10.0	≤1260	0.319	≤3.5
		Pink	124.9			≤0.5	≤1.0	9.0	10.2	≤1260	0.327	≤3.5
		Aqua	125.2			≤0.5	≤1.0	9.2	10.1	≤1260	0.321	≤3.5
		Blue	125.1			≤0.5	≤1.0	9.1	10.0	≤1260	0.324	≤3.5
		Orange	125.0			≤0.5	≤1.0	9.0	10.1	≤1260	0.322	≤3.5
		Green	125.2			≤0.5	≤1.0	9.2	10.2	≤1260	0.325	≤3.5
		Brown	125.1			≤0.5	≤1.0	9.1	10.0	≤1260	0.318	≤3.5
		Gray	125.0			≤0.5	≤1.0	9.1	10.1	≤1260	0.322	≤3.5
		White	125.1			≤0.5	≤1.0	9.0	10.2	≤1260	0.322	≤3.5
		Red	125.1			≤0.5	≤1.0	9.1	10.1	≤1260	0.326	≤3.5
		Nature	124.9			≤0.5	≤1.0	9.2	10.2	≤1260	0.325	≤3.5
		Yellow	125.1			≤0.5	≤1.0	9.1	10.0	≤1260	0.321	≤3.5
		Violet	125.2			≤0.5	≤1.0	9.2	10.1	≤1260	0.324	≤3.5
		Pink	125.0			≤0.5	≤1.0	9.0	10.0	≤1260	0.325	≤3.5
		Aqua	125.1			≤0.5	≤1.0	9.1	10.1	≤1260	0.319	≤3.5

Fibre colour: D80- double colouring printed each 80mm.

fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.11

Test date:

2011-12-5

3-6. Optics Performance

Drum No.	6	Type	OPGW-2S2/48B1(0/93-55.3)							length		4250 m	
OP-UNIT No.	Color ring	fiber color	Cladding Diameter	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter		Cut-off length	Attenuation		Dispersion		
						1310nm	1550nm		λ _c	1310nm	1550nm	1285~1339nm	1550nm
1	/	Specification	125±0.7	≤0.5	≤1.0	9.2±0.4	10.4±0.5	≤1260	≤0.36	≤0.22	≤3.5	≤18	
		Unit	μm	μm	%	μm	μm	nm	dB/km		PS/nm.km		
		Blue	125.2	≤0.5	≤1.0	9.1	10.2	≤1260	0.321	0.185	≤3.5	≤18	
		Orange	125.1	≤0.5	≤1.0	9.1	10.2	≤1260	0.324	0.186	≤3.5	≤18	
		Green	125.0	≤0.5	≤1.0	9.0	10.0	≤1260	0.320	0.186	≤3.5	≤18	
		Brown	125.2	≤0.5	≤1.0	9.2	10.1	≤1260	0.321	0.182	≤3.5	≤18	
		Gray	125.2	≤0.5	≤1.0	9.2	10.0	≤1260	0.326	0.183	≤3.5	≤18	
		White	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.324	0.185	≤3.5	≤18	
		Red	124.9	≤0.5	≤1.0	9.0	10.0	≤1260	0.323	0.181	≤3.5	≤18	
		Black	125.0	≤0.5	≤1.0	9.2	10.1	≤1260	0.325	0.184	≤3.5	≤18	
		Yellow	125.1	≤0.5	≤1.0	9.1	10.0	≤1260	0.322	0.183	≤3.5	≤18	
		Violet	125.0	≤0.5	≤1.0	9.0	10.2	≤1260	0.325	0.185	≤3.5	≤18	
		Pink	125.1	≤0.5	≤1.0	9.2	10.1	≤1260	0.322	0.186	≤3.5	≤18	
		Aqua	125.0	≤0.5	≤1.0	9.1	10.0	≤1260	0.319	0.185	≤3.5	≤18	
		Blue	125.2	≤0.5	≤1.0	9.0	10.2	≤1260	0.325	0.186	≤3.5	≤18	
		Orange	125.1	≤0.5	≤1.0	9.2	10.1	≤1260	0.328	0.184	≤3.5	≤18	
		Green	125.0	≤0.5	≤1.0	9.1	10.0	≤1260	0.324	0.185	≤3.5	≤18	
		Brown	125.1	≤0.5	≤1.0	9.0	10.0	≤1260	0.322	0.183	≤3.5	≤18	
		Gray	125.0	≤0.5	≤1.0	9.1	10.2	≤1260	0.323	0.187	≤3.5	≤18	
		White	125.0	≤0.5	≤1.0	9.2	10.0	≤1260	0.323	0.188	≤3.5	≤18	
S60	Red	125.2	≤0.5	≤1.0	9.0	10.0	≤1260	0.322	0.183	≤3.5	≤18		
	Nature	125.1	≤0.5	≤1.0	9.1	10.1	≤1260	0.325	0.188	≤3.5	≤18		
	Yellow	125.1	≤0.5	≤1.0	9.2	10.2	≤1260	0.325	0.183	≤3.5	≤18		
	Violet	125.2	≤0.5	≤1.0	9.1	10.1	≤1260	0.322	0.184	≤3.5	≤18		
	Pink	124.9	≤0.5	≤1.0	9.0	10.2	≤1260	0.328	0.190	≤3.5	≤18		
		Aqua	125.0	≤0.5	≤1.0	9.2	10.0	≤1260	0.327	0.193	≤3.5	≤18	

Fibre colour: S60-single colouring printed each 60mm

Fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.3

Test date:

2011-11-30

3-6. Optics Performance

Drum No.	6	Type	OPGW-2S2/48B1(0/93-55.3)					length		4250 m	
OP-UNIT No.	Color ring	fiber color	Core Concentricity Error	Cladding Non-circularity	Mode Field Diameter	Cut-off length	Attenuation	Dispersion			
		Specification	125±0.7		1310nm	1550nm	1310nm	1550nm	1285~1339nm	1550nm	
		Unit	μm		9.2±0.4	10.4±0.5	≤0.36	≤0.22	≤3.5	≤18	
		Blue	125.2	≤0.5	9.2	10.0	0.328	0.189	≤3.5	≤18	
		Orange	125.0	≤0.5	9.0	10.2	0.325	0.184	≤3.5	≤18	
		Green	125.1	≤0.5	9.1	10.1	0.325	0.187	≤3.5	≤18	
		Brown	125.2	≤0.5	9.1	10.0	0.327	0.187	≤3.5	≤18	
		Gray	125.1	≤0.5	9.0	10.0	0.325	0.184	≤3.5	≤18	
		White	125.0	≤0.5	9.1	10.2	0.324	0.187	≤3.5	≤18	
		Red	125.0	≤0.5	9.0	10.1	0.321	0.179	≤3.5	≤18	
		Black	125.2	≤0.5	9.2	10.1	0.326	0.183	≤3.5	≤18	
		Yellow	125.2	≤0.5	9.0	10.0	0.325	0.181	≤3.5	≤18	
		Violet	125.1	≤0.5	9.1	10.0	0.322	0.185	≤3.5	≤18	
		Pink	124.9	≤0.5	9.0	10.2	0.324	0.184	≤3.5	≤18	
		Aqua	125.2	≤0.5	9.2	10.1	0.322	0.183	≤3.5	≤18	
		Blue	125.1	≤0.5	9.1	10.0	0.327	0.182	≤3.5	≤18	
		Orange	125.0	≤0.5	9.0	10.1	0.322	0.183	≤3.5	≤18	
		Green	125.2	≤0.5	9.2	10.2	0.326	0.187	≤3.5	≤18	
		Brown	125.1	≤0.5	9.1	10.0	0.319	0.182	≤3.5	≤18	
		Gray	125.0	≤0.5	9.1	10.1	0.323	0.186	≤3.5	≤18	
		White	125.1	≤0.5	9.0	10.2	0.326	0.185	≤3.5	≤18	
		Red	125.1	≤0.5	9.1	10.1	0.326	0.185	≤3.5	≤18	
		Nature	124.9	≤0.5	9.2	10.2	0.326	0.184	≤3.5	≤18	
		Yellow	125.1	≤0.5	9.1	10.0	0.321	0.182	≤3.5	≤18	
		Violet	125.2	≤0.5	9.2	10.1	0.324	0.184	≤3.5	≤18	
		Pink	125.0	≤0.5	9.0	10.0	0.325	0.184	≤3.5	≤18	
		Aqua	125.1	≤0.5	9.1	10.1	0.322	0.185	≤3.5	≤18	

Fibre colour: D80- double colouring printed each 80mm.

fibre temperature specification: ≤0.05dB/km (-40℃~+80℃, compared with 20℃)

Conclusion: qualified

Test by:

NO.3

Test date:

2011-11-30

4. OPGW Mechanical Characteristics Test

OPGW TYPE OPGW-2S2/48B1(0/93-55.3)

Test Item	Unit	Standard & Requirement	Test Result	Conclusion
Stress-Strain Test	dB/km	IEC 60794-1-E1 EN 187000/501 Under 40%RTS load, additional attenuation of optical fiber,0.00 Under 75%RTS load, additional attenuation of optical fiber ≤ 0.05	Under 40%RTS load, additional attenuation of optical fiber,0.00 Under 75%RTS load, additional attenuation of optical fiber ≤ 0.05	Qualified
	%	IEC 60794-1-E1 EN 187000/501 Under 40%RTS load, additional attenuation of optical fiber,0% Under 75%RTS load, additional attenuation of optical fiber $\leq 0.33\%$	Under 40%RTS load, additional attenuation of optical fiber,0% Under 75%RTS load, additional attenuation of optical fiber $\leq 0.33\%$	
Tensile Test	/	IEC 61089 Under not less than 95%RTS , without fracture of any wire.	Under 100%UTS, No Strand Wire broken	Qualified
Crush Test	dB	IEC 60794-1-E3 EN 187000/504 Under short tension10000N, Absolute value of additional attenuation in fiber ≤ 0.10	Fiber attenuation ≤ 0.03	Qualified
Impact Test	dB	IEC 60794-1-E4 EN 187000/505 Drop Height: 1 meter; Weight: 4.5Nm, Times: 3 times, Absolute value of additional attenuation in fiber ≤ 0.1	Fiber attenuation ≤ 0.1	Qualified
SheaveTest	dB	IEC 60794-4-1 Puling angle: 30°C ; Pulling load: 15%RTS; Number of cycle: 3 cycles; Pulley diameter: not less than 40 times of the OPGW diameter; Added attenuation: $\leq 0.1\text{dB}$ at 1550nm	Fiber attenuation ≤ 0.1	Qualified
Temperature Cycleing Test	dB	IEC 60794-1-F1. Temperature range:-40/+80 °C; Duration of time is 12h at each extreme temperature point; Time of one cycle: $\geq 24\text{h}$; Number of cycles:2 ; $ \Delta\alpha \leq 0.05 \text{ dB/km}$ at1550nm	Fiber attenuation ≤ 0.05	Qualified

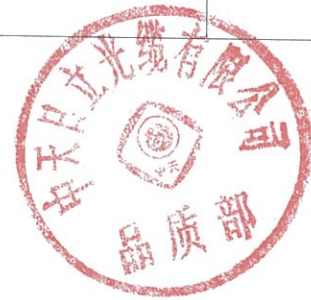


5.Other Test

OPGW TYPE: OPGW-2S2/48B1(0/93-55.3)

Test Item	Requirement	Test Result	Conclusion
Overall Diameter	13.2±1%D	13.2 mm	qualified
Cross section	93± 2%	93 mm ²	qualified
Unit weight	595± 2%	595 kg/km	qualified
Appearance of Conductor	The surface of the conductor shall be free from all imperfection visible to the unaided eye(normal corrective lenses accepted)	qualified	qualified
Lay Direction	Adjacent wire layers shall be stranded with reverse lay directions. The direction of lay of the external layer shall be "right hand".	qualified	qualified

Test standard:IEC 61089; IEC60794



6.Packing List

Ex-work number	Delivery drum number	Net length(m)	require length(m)
01	1	4240	4240
02	2	3400	3400
03	3	3100	3100
04	4	5000	5000
05	5	4680	4680
06	6	4250	4250

