

Santec Component Specification

santec Part Number: PDLA-1-S-LS-XXX-XX (PDL & DGD Adjuster)

This document divides the performance specifications into the following sections.

1. Revision History
2. Optical Specifications
3. Package and Optical Fiber Pigtail Specifications
 - 3.1. Package Schematic
 - 3.2. Optical Fiber Pigtails
 - 3.3. Label
 - 3.4. Packing
4. Reliability Specifications
 - 4.1. Max. Rating input optical power
 - 4.2. Design reliability
 - 4.3. End-of-Life Criteria
5. Data Presentation
 - 5.1. Test Report
 - 5.2. E-data

PDL & DGD Adjuster		SPN:PDLA-1-S-LS-XXX-XX	Revision: 1.0
Author: Kiyoteru Nabeno Checked: Saad Khan Approved: Jun Yokoyama	Date: 26-Sep-2012	Document Number: SS-12-0604	Page:1/8

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1.0 Revision History

Issue	Date	Author	Description of changes
1.0	26-Sep-2012	K.Nabeno	First Creation

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2.0 Optical Specifications

The device's performance remains within the ranges specified above throughout the specified wavelength range, for all operating temperatures and for all states of polarization.

santec Part number: PDLA-1-S-LS-"PDL"- "DGD"

PDL		
Code	Axis	Value
S05	Slow	0.5dB
F05	Fast	
S10	Slow	1.0dB
F10	Fast	
S15	Slow	1.5dB
F15	Fast	
S20	Slow	2.0dB
F20	Fast	

DGD	
Code	Value
00	0.0 ps
15	15.7ps

Max. Rating Input Optical Power

See sec 4.1

Optical Specifications

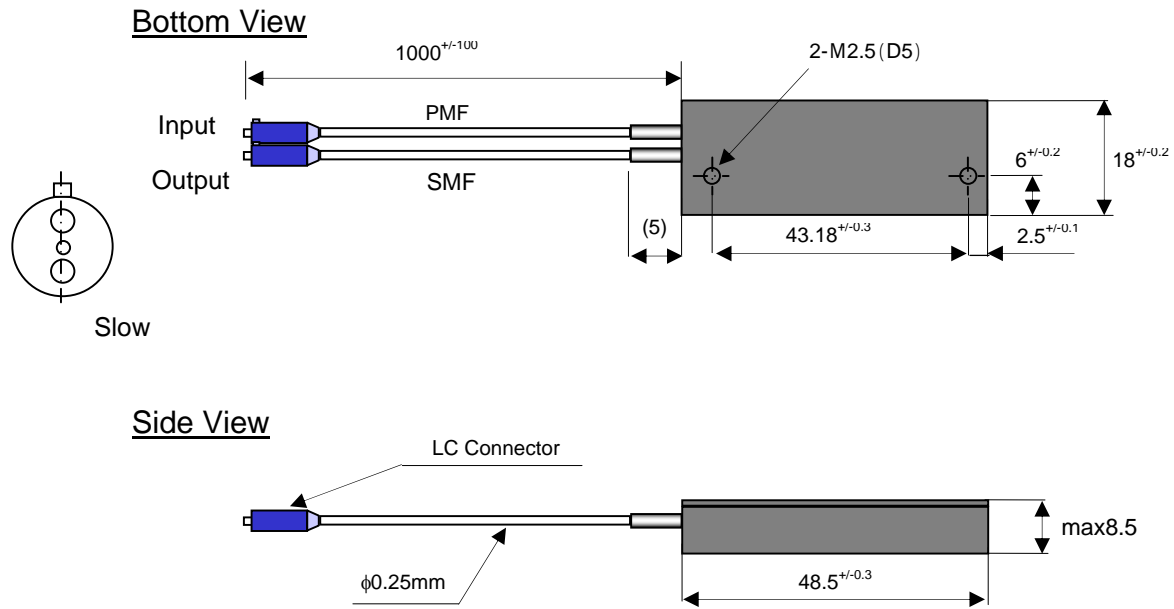
Parameter	Conditions	Min	Max	Units	Notes
Wavelength Range		1525	1570	nm	
Insertion Loss	Excluding connector	-	1.00	dB	Target
PDL		Refer to Table. Det. No in sec 2.0		dB	Target
	Accuracy	-0.10	+0.10	dB	
WDL		-	0.30	dB	
TDL		-	0.20	dB	Target
Return Loss (All port)	Including connector	40.0	-	dB	
Differential Group Delay		Refer to Table. Det. No in sec 2.0		ps	Target
	Accuracy	-1	1	ps	
Chromatic Dispersion		-	0.20	ps/nm	Target
Operating Temperature	<85%RH, Non Condensing	0	70	degC	
Storage Temperature	<85%RH, Non Condensing	-40	85	degC	

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3.0 Package and Optical Fiber Pigtail Specifications

3.1 Package Schematic

Following schematic diagram is the device dimensions, mounting holes, and connectors.



[unit:mm]

* unspecified tolerance

Range	Tolerance
≤ 4	$+/-0.1$
$>4, \leq 16$	$+/-0.2$
$>16, \leq 63$	$+/-0.3$

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3.2 Optical Fiber Pigtails

Parameter	Conditions	Min	Max	Units
Length	-	0.9	1.1	m
Fiber Type	Input port	PMF		-
	Output port	SMF		-
Fiber Jacket diameter	Input port	0.25		mm
	Output port	0.25		mm
Fiber bending radius	-	25	-	mm
Fiber tension	-	-	5	N
Fiber Coloring	Input	White		-
	Output	White		-
Connector	Input port	LC		-
	Output port	LC		-
Connector Polish	Input port	SPC		-
	Output port	SPC		-
Key setting accuracy	Input port (PMF)	-3	3	degree

Connector end face visual inspection

Specification (PC-polished) of optical connector plug end face for optical components and modules

Zone	Scratches	Defects
Core zone ($\leq 15 \mu\text{m}$ diameter)	None	None
Cladding zone ($>15 \mu\text{m}$ and $\leq 115 \mu\text{m}$ diameter)	No limit for $\leq 3 \mu\text{m}$ width. None for $>3 \mu\text{m}$ width.	No limit for $\leq 2 \mu\text{m}$ diameter. < 5pcs for $>2 \mu\text{m}$ and $\leq 5 \mu\text{m}$ diameter. None for $> 5 \mu\text{m}$ diameter.
Adhesive zone ($> 115 \mu\text{m}$ and $\leq 135 \mu\text{m}$ diameter)	No limit	No limit.
Ferrule contact zone ($> 135 \mu\text{m}$ and $\leq 250 \mu\text{m}$ diameter)	No limit	No limit for $\leq 10 \mu\text{m}$ diameter. None for $>10 \mu\text{m}$ diameter

NOTE 1: There are the different specifications for the following products;

- PC-polished optical connector plug endface for optical connector patch cords and plug style attenuators,
- PC-polished receptacle endface for receptacle type optical transceivers,

NOTE 2: The definitions of "Scratches" and "Defects" accord to IEC 61300-3-35.

NOTE 3: Diameter of defects is defined as the longer diameter when the shapes of defects are oval.

NOTE 4: No visible subsurface cracks are allowed in the core or cladding zones.

NOTE 5: All loose particles should be removed. If defect(s) are non-removable, it should be within the criteria above to be acceptable for use.

NOTE 6: No contamination was allowed.

NOTE 7: Requirement for instruments for visual inspection: Scratches of $2 \mu\text{m}$ width and defects of $2 \mu\text{m}$ diameter can be detected.

Connector dust cap

The connector dust cap shall not contact to the ferrule end face when attached connector.

-- Dust cap image--



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3.3 *Label*

Device Label

Field Name	Note / Format	Define
Maker Name	Santec	-
Model Number	Part Number	PDLA-1-S-LS-xxx-xx
Serial Number	XXXXXXXX	8figures

Internal box Label

Field Name	Note / Format	Define
Maker Name	Santec	-
Model Number	Part Number	PDLA-1-S-LS-xxx-xx
Serial Number	XXXXXXXX	8figures

Fiber Port ID

Port	Note / Format
Input port	Black color paint (>50mm long from connector end)
Output port	-

3.4 *Packing*

Adequate component and fiber protection must be provided by the package. If component has electrical leads then they must be protected as well.

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4.0 Reliability Specifications

4.1 Max. Rating Input Optical Power

Parameter	Conditions	Min	Max	Units
Sustainable optical power	1525 to 1610nm	-	+25	dBm

4.2 Design reliability

Modules are designed to meet Telcordia GR-1221 CORE reliability test requirement. (Target)
Pass/Fail criteria are listed below.

Parameter	Conditions	Min	Max	Units
Insertion loss change	All conditions	-0.2	+0.2	dB
Return loss	All conditions	45	-	dB
PDL change		0.1	-	dB

Screening test

Temperature cycling

After screening test, values must satisfy the specifications of Section 2.0.

4.3 End-of-Life Criteria

The following tables represent the upper bound of the changes allowed over the lifetime of field devices. (Target)

Optical

Parameter	Conditions	Maximum Change	Units
Insertion loss change	Aging, due to environmental conditions	0.3	dB

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5.0 Data Presentation

5.1 Test Report

<i>Field</i>	<i>Field Name</i>	<i>Units</i>	<i>Format</i>
1	Santec Part Number	-	Santec Part Number
2	Serial Number	-	Text, 8 characters
3	Inspection Date	-	yyyy/mm/dd
4	Insertion Loss (Fast axis)	dB	-
5	Return Loss (Input)	dB	-
6	Wavelength Dependent Loss	dB	-
7	Temperature Dependent Loss	dB	-
8	Polarization Dependent Attenuation	dB	-
9	Chromatic Dispersion	ps/nm	

5.2 E-data

N/A

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