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1. Purpose

This document describes the production procedure for the execution of the standard coating for TDLS8000 and YH8000.

2. Target model

Tunable Diode Laser Spectrometer (TDLS8000) and HMI Unit (YH8000)



3. Coating specifications

3.1 Coating area

Applicable coating area is Laser Unit/Sensor Control Unit/HMI Interface Unit.

3.2 Specifications

Polyurethane resin coating

		Reference standard		
		JIS (ISO)	ASTM	
Coating	Solvent spraying coating, Heating/Drying			
Color	Deep sea moss green (RAL 190-30-15)			
Material	Polyurethane resin			
Layer Thickness	Under coating: 10 to 20 μm Final Coating: 30 to 60 μm Total: 40 to 80 μm			
Gloss	Gs70			
Evaluation test	Heat Resistance	125 \pm 2 degC, 24 h	K5600-6-3 (ISO 1513)	---
	Adhesion Test	In case of 0 to 60 μm (coating thickness) -> Peel Test for Grid: 1 mm width (Sampling QTY: 5) In case of 61 to 120 μm (coating thickness) -> Peel Test for Grid: 2 mm width (Sampling QTY: 5) Result: No "Comes Off"	K5600-5-6 (ISO 2409)	D3359
	Sun Test	Sunshine Weather Meter 500 h Result: Change in Gloss: 20% or smaller	K5600-7-7 (ISO 11341)	---
	Chemical Resistance	5% H ₂ SO ₄ Solution immersion 200 h Result: No Blister	---	---
		5% NaOH Solution immersion 200 h Result: No Blister	---	---
	Salt Spray Test	Spraying of 5% NaCl Solution (35 degC, 1000 h) Result: No Blister Comes Off at Cut Point: 2 mm or smaller	K5600-7-1 (ISO 7253)	B117

4. Procedure

4.1 preprocessing (rinse and chemical conversion coating)

Before coating, alkaline degreasing, water rinse and chromate coating are performed.

4.2 Coating

Polyurethane resin coating

Process No.	Process	Treatment / Paint material	Condition
1	Under coating	Epoxy resin type primer	Thickness: 10 to 20 μm
2	Natural drying	---	Drying Time: 15 min or more
3	Final coating	Polyurethane resin paint	Thickness: 30 to 60 μm
4	Forced drying	---	Drying Temp. & Time: $80\pm 10^{\circ}\text{C}$, 15 to 30 min

4.3 Inspection

No.	Inspection/test name	Test frequency	Test method	Details	Judgment
1	Visual inspection	All products	Visual test	Check for scratch, peeling, stain etc	Limit sample
2	Masking inspection	All products	Visual test	Confirm masking condition	No residual coating, no deposited coating
3	Coating thickness test	One test piece/ Quarter	Film thickness gauges	Measure thickness using film thickness gauge	Within tolerance which is defined in standard
4	Color difference test	One test piece/day	Visual test	Color sample	No color difference
5	Glossiness test	One test piece/day	Visual check	Color sample	Visual comparison
6	Adhesion test	One test piece/ Quarter	Adhesion test (ASTMD3359)	(Note)	4B minimum Small flakes of the coating are detached at intersections; less than 5% of the area is affected.
7	Hardness test	One test piece/ Quarter	Pencil hardness test (ASTMD3363)	Pencil method	Hardness: more than level F After scratch with nail, There is no damage.

Note: 1. Make 100 pcs of grid (1x1 mm) using utility knife.
2. Stick adhesive tape on the grids by finger press.
3. Peel off the tape

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