Pass

Pass

==== Shimadzu LabSolutions System Check ====

Instrument Name : MARXLAB-HPLC

Date Tested: 7/12/2022 10:17:22 PM Perfomer: CJMarx System Check Summary: Pass Software Version: 5.82

LC-20AD Instrument Name Link Address Date Checked 7/13/2022 2:06 PM Serial Number L20105459442

Unit ID ROM Version

V2.10 ROM Check Pass RAM Check **Pass** Optical I/F Check Pass Leak Sensor Check T000000(hr) Pass

Leak Sensor Level T000000(hr) Total Operating Time (hr) 13426

L Seal Delivered (L) 12 90 (13%)Pass R Seal Delivered (L) 12 90 (13%)Pass

614139 Total Revolutions Flow Compensation Factor T000000(hr) Press. Sensor Compensation Factor 1 T000000(hr) 900 T000000(hr) Press. Sensor Compensation Factor 5

5404 T000000(hr) Flow Rate Accuracy Check(%) 0.10 Pulsation Check(MPa) T003559(hr)

0.04 T003558(hr) T003558(hr) T000000(hr) R SEAL REPLACED L SEAL REPLACED Maintenance Log No.1 Maintenance Log No.2 INITIALIZE PARAM Operation Log No.1 6/29/2022 10:06 AM ERROR P-MAX Error Log No.1 Error Log No.2 6/23/2022 2:51 AM ERROR P-MAX Error Log No.3 6/23/2022 2:48 AM ERROR P-MAX ERROR P-MAX ERROR P-MAX ERROR P-MAX Error Log No.4 6/9/2022 3:31 AM 6/9/2022 3:30 AM Error Log No.5

6/9/2022 3:28 AM 6/9/2022 3:26 AM Error Log No.6 ERROR P-MAX Error Log No.7 Error Log No.8 6/9/2022 3:21 AM OPEN DRAIN VALVE Error Log No.9 6/2/2022 4:35 AM OPEN DRAIN VALVE Error Log No.10 3/25/2022 10:27 PM ERROR P-MAX

Instrument Name RID-20A Link Address Date Checked 7/13/2022 2:06 PM Serial Number L21465402031 Unit ID

ROM Version V1.01 **ROM Check** Pass RAM Check Pass

Optical I/F Check Pass Leak Sensor Check T000000(hr) Pass Leak Sensor Level T000000(hr)

Total Operating Time (hr) 13761 20000 Lamp Operating Time (hr) 13761 Pass 7/13/2022 2:06 PM Lamp Energy

7207 6000 Pass T000000(hr) Span Factor(Anal., SPAN A) 1.01 Span Factor(Prep., SPAN P) T00000(hr) 0.81

Span Factor(L-Prep., SPAN L) T000000(hr) 0.81 Operation Log No.1 T000000(hr) INITIALIZE PARAM

Instrument Name CTO-20A

Link Address Date Checked 7/13/2022 2:06 PM Serial Number L20205452911 Unit ID ROM Version V2.02

ROM Check Pass RAM Check Pass Optical I/F Check Pass

T000000(hr) Leak Sensor Check Pass T000000(hr) Leak Sensor Level 14490

Total Operating Time (hr) Rotary Valve L Rotary Valve R Column Management Device Temperature Accuracy Check Temperature Stability Check Temperature1 Calibration Temperature2 Calibration Operation Log No.1 Error Log No.1 Error Log No.2 Error Log No.3	13466 NONE NONE T000000(hr) T000000(hr) T000000(hr) 40.1 (at 40.0) T000000(hr) 59.7 (at 60.0) T000000(hr) 7/27/2019 4:06 AM 11/17/2016 2:52 AM T000000(hr)	INITIALIZE PARAM ERR LEAK DETECT ERR LEAK DETECT ERR LEAK DETECT		Pass Pass
Instrument Name Link Address	SIL-20ACHT 1			
Date Checked Serial Number	7/13/2022 2:29 PM L20355457049			
Unit ID				
ROM Version ROM Check	V2.05			Pass
RAM Check				Pass
Optical I/F Check				Pass
Leak Sensor Check Leak Sensor Level	T000000(hr) T000000(hr) 162			Pass
Total Operating Time (hr)	13529			
Rack Position Adjustment	T000000(hr)			
Injection Port Adjustment Injection Compensation Factor	T003640(hr) T000000(hr) 1.00			
Max Injection Volume	100			
Needle Seal Used	718	40000	(1%)	Pass
High Pressure Valve Rotations(Rotor)	720	100000	(0%)	Pass
Low Pressure Valve Rotations(Rotor) External Rinse Pump Operating Time(sec)	5082 0	60000 0	(8%) (%)	Pass Pass
Position Sensor Check	T000000(hr)	ŭ	(70)	Pass
Operation Log No.1	T000000(hr)	INITIALIZE PARAM		
Maintenance Log No.1	T003639(hr)	LPVSEAL REPLACED		
Maintenance Log No.2 Maintenance Log No.3	T003639(hr) T003639(hr)	HPVSEAL REPLACED N-SEAL REPLACED		
Error Log No.1	T003640(hr)	ERR LEAK DETECT		
Error Log No.2	10/25/2019 8:20 AM	NO VIAL 1		
Error Log No.3 Error Log No.4	10/10/2019 8:59 PM 10/10/2019 8:58 PM	NO VIAL 38 NO VIAL 37		
Error Log No.5	10/10/2019 8:57 PM	NO VIAL 37 NO VIAL 36		
Error Log No.6	9/4/2019 6:20 PM	NO VIAL 1		
Error Log No.7	8/29/2019 10:14 PM	NO VIAL 62		
Error Log No.8 Error Log No.9	8/28/2019 8:49 PM 8/18/2019 12:01 PM	NO VIAL 1 NO VIAL 16		
Error Log No.10	8/17/2019 7:22 PM	NO VIAL 10		
Instrument Name	FRC-10A			
Link Address	2			
Serial Number				
Unit ID ROM Version	V5.03			
ROM Check	V 3.00			Pass
RAM Check				Pass
Instrument Name	CBM-20A			
Date Checked	7/13/2022 2:06 PM			
Serial Number	L20235456603			
Unit ID ROM Version	V3.20			
IP Address	192.168.200.99			
Subnet Mask	255.255.255.0			
Default Gateway	20 50 20 20 20 40			
MAC Address ROM Check	00:E0:96:03:C2:1C			Pass
RAM Check				Pass
Total Operating Time (hr)	11709			
Operation Log No.1	T000000(hr)	INITIALIZE PARAM		
Error Log No.1 Error Log No.2	6/29/2022 10:06 AM 6/23/2022 2:51 AM	0030 Pump A 0030 Pump A		
Error Log No.3	6/23/2022 2:48 AM	0030 Pump A		
Error Log No.4	6/9/2022 3:32 AM	0030 Pump A		
Error Log No.5 Error Log No.6	6/9/2022 3:30 AM 6/9/2022 3:28 AM	0030 Pump A 0030 Pump A		
Error Log No.7	6/9/2022 3:27 AM	0030 Pump A		
Error Log No.8	6/9/2022 3:21 AM	81D4 Pump A		
Error Log No.9	6/2/2022 8:31 AM	0019 System Controller		
Error Log No.10 Error Log No.11	6/2/2022 8:27 AM 6/2/2022 8:26 AM	0019 System Controller 0019 System Controller		
Error Log No.12	6/2/2022 4:34 AM	81D4 Pump A		
Error Log No.13	3/25/2022 10:27 PM	0030 Pump A		

Error Log No.14	3/25/2022 10:27 PM	8003 System Controller		
Error Log No.15	3/25/2022 3:07 AM	0030 Pump A		
Error Log No.16 Error Log No.17	3/9/2022 12:18 PM 3/9/2022 8:01 AM	0030 Pump A 0077 Oven A		
Error Log No.18	3/9/2022 7:31 AM	0077 Oven A		
Error Log No.19	3/9/2022 6:55 AM	0077 Oven A		
Error Log No.20	3/9/2022 6:30 AM	0077 Oven A		
locks as out None	CDD MOOA			
Instrument Name Date Checked	SPD-M20A 7/12/2022 9:19 PM			
Serial Number	L20155451603			
Unit ID	220100101000			
ROM Version	V2.03			
IP Address	192.168.200.98			
Subnet Mask	255.255.255.0			
Default Gateway MAC Address	00:E0:96:03:BE:C7			
ROM Check	00.L0.30.03.DL.01			Pass
RAM Check				Pass
Leak Sensor Check	5/4/2016 1:00 PM			Pass
Leak Sensor Level	5/4/2016 12:59 PM			
Total Operating Time (hr)	135 11550			
Total Operating Time (hr) D2 Lamp Operating Time (hr)	3373	2000	(168%)	***
D2 Lamp Energy(Narrow)	7/12/2022 9:19 PM	2000	(10070)	
5 7 5 37(5 5 7)	2882	5000		***
D2 Lamp Energy(Wide)	7/12/2022 9:19 PM			
Miles Constitution Time (b)	2936	5000	(4000()	***
W Lamp Operating Time (hr)	3373 7/12/2022 9:19 PM	2000	(168%)	***
W Lamp Energy(Narrow)	8520	3000		Pass
W Lamp Energy(Wide)	7/12/2022 9:19 PM			. 400
7	8243	3000		Pass
Wavelength Calibration	5/27/2021 12:43 PM			_
Slit Check	7/12/2022 9:19 PM			Pass
Slit Switch Time Absorbance Compensation Factor	271 5/4/2016 1:01 PM			
Absorbance compensation ractor	1.00			
Stray Light Energy(Narrow)	54			
Stray Light Background(Narrow)	4207			
Stray Light Energy(Wide)	60			
Stray Light Background(Wide)	4299 105			
D2 Lamp Exposure Time(Narrow)(ms) W Lamp Exposure Time(Narrow)(ms)	316			
	18			
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms)	18 44			
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check	44 7/12/2022 9:19 PM			Pass
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM	656.3(nm)	0.2(nm)	(Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM	485.8(nm)	-0.2(nm)	(Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM	485.8(nm) 287.1(nm)	-0.2(nm) -0.5(nm)	(Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM	485.8(nm)	-0.2(nm)	(Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV)	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm)	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM (mV) 197	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm)	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM (mV) 197 222	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm)	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm)	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM (mV) 197 222	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm)	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 655.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 658.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ************	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 656.1(nm) 657.1(nm) 658.1(nm) 658.1(nm) 659.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 658.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *********************	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 659.1(nm) 659.1(nm) 660.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV)	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *********************	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 486nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 656.1(nm) 657.1(nm) 658.1(nm) 658.1(nm) 659.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 655.1(nm) 656.1(nm) 656.1(nm) 658.1(nm) 658.1(nm) 648.1(nm) 659.1(nm) 648.1(nm) 659.1(nm) 659.1(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 658.1(nm) 659.1(nm) 648.0(nm) 482.0(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 486.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 484.0(nm) 482.0(nm) 485.0(nm) 485.0(nm) 486.0(nm) 487.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 486.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 656.1(nm) 660.1(nm) 488.0(nm) 488.0(nm) 488.0(nm) 487.0(nm) 488.0(nm) 488.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 486.0(nm) 488.0(nm) 488.0(nm) 489.0(nm) 489.0(nm) 499.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs)	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 488.0(nm) 488.0(nm) 488.0(nm) 488.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 485.0(nm) 487.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 881 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 658.1(nm) 659.1(nm) 480.0(nm) 481.0(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 488.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 485.0(nm) 487.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 881 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 487.0(nm) 487.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 283.6(nm) 284.6(nm) 285.6(nm) 286.6(nm) 287.6(nm) 288.6(nm) 288.6(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 0 163 180 83	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 658.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 485.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 488.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 283.6(nm) 284.6(nm) 285.6(nm) 286.6(nm) 287.6(nm) 288.6(nm) 288.6(nm) 288.6(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 1114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 163 180 83 92	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 484.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 488.0(nm) 488.0(nm) 283.6(nm) 283.6(nm) 284.6(nm) 285.6(nm) 286.6(nm) 287.6(nm) 288.6(nm) 288.6(nm) 289.6(nm) 289.6(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 0 163 180 83 92 45	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 658.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 485.0(nm) 485.0(nm) 485.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 488.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 283.6(nm) 284.6(nm) 285.6(nm) 286.6(nm) 287.6(nm) 288.6(nm) 288.6(nm) 288.6(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 0 163 180 83 92 445 8	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 365nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 656.1(nm) 659.1(nm) 484.0(nm) 483.0(nm) 484.0(nm) 484.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 489.0(nm) 283.6(nm) 283.6(nm) 283.6(nm) 284.6(nm) 286.6(nm) 287.6(nm) 288.6(nm) 288.6(nm) 288.6(nm) 289.6(nm) 290.6(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 0 163 180 83 92 45	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 484.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 488.0(nm) 488.0(nm) 283.6(nm) 283.6(nm) 284.6(nm) 285.6(nm) 286.6(nm) 287.6(nm) 288.6(nm) 288.6(nm) 289.6(nm) 289.6(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 0 163 180 83 92 45 8 (mAbs)	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 484.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 488.0(nm) 488.0(nm) 283.6(nm) 284.6(nm) 285.6(nm) 285.6(nm) 286.6(nm) 287.6(nm) 289.6(nm) 290.6(nm) 290.6(nm) 291.6(nm) 356.8(nm) 357.8(nm) 358.8(nm) 358.8(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 163 180 83 92 45 8 (mAbs) 0 0 196	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)
D2 Lamp Exposure Time(Wide)(ms) W Lamp Exposure Time(Wide)(ms) Wavelength Accuracy Check Wavelength Accuracy 656nm Narrow Wavelength Accuracy 288nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 361nm Narrow Wavelength Accuracy 656nm Wide Wavelength Accuracy 656nm Wide Wavelength Accuracy Check Data 652.1(nm) 653.1(nm) 654.1(nm) 655.1(nm) 656.1(nm) 657.1(nm) 660.1(nm) 482.0(nm) 483.0(nm) 484.0(nm) 487.0(nm) 485.0(nm) 486.0(nm) 487.0(nm) 283.6(nm) 284.6(nm) 287.6(nm) 288.6(nm) 289.6(nm) 289.6(nm) 290.6(nm) 291.6(nm) 356.8(nm) 357.8(nm)	44 7/12/2022 9:19 PM 7/12/2022 9:18 PM 7/12/2022 9:18 PM 7/12/2022 9:19 PM 7/12/2022 9:19 PM (mV) 197 222 0 2335 4947 3749 891 32 114 (mV) 915 877 1115 1957 2472 1768 927 895 930 (mAbs) 0 0 163 180 83 92 45 8 (mAbs) 0 0 0	485.8(nm) 287.1(nm) 360.8(nm) 656.1(nm) *** *** *** *** *** *** ***	-0.2(nm) -0.5(nm) 0.0(nm)	(Pass) (Pass) (Pass) (Pass)

361.8(nm) 524 *************************362.8(nm) 238 ***********************************		
302.0(1111)		
262.0(nm) ****		
363.8(nm) 118 ****		
364.8(nm) 32 ***		
Maintenance Log No.1 5/27/2021 12:44 PM 228-34016	D2-Lamp	
Maintenance Log No.2 5/27/2021 12:44 PM 228-34410	W-Lamp	
Operation Log No.1 5/27/2021 12:43 PM Waveleng	th Calib. OK	
Operation Log No.2 5/27/2021 12:43 PM Acctime	Acctime Optimize	
Error Log No.1 5/3/2022 11:45 AM Command	Command Is Invalid	
Error Log No.2 5/3/2022 11:45 AM Command	Command Is Invalid	
Error Log No.3 5/3/2022 11:45 AM Command	Is Invalid	
Error Log No.4 12/20/2019 2:01 PM PC LAN T	meout	
Error Log No.5 10/26/2019 3:35 PM PC LAN T	meout	
Error Log No.6 10/9/2019 12:32 PM PC LAN T	meout	
Error Log No.7 10/4/2019 2:19 AM PC LAN T	PC LAN Timeout	
Error Log No.8 8/14/2019 2:25 AM PC LAN T	PC LAN Timeout	
Error Log No.9 7/10/2019 2:31 AM PC LAN T	PC LAN Timeout	
Error Log No.10 4/12/2017 2:26 AM PC LAN T	meout	