

HORIBA HORIBA India Private Limited
Medical

HORIBA
Medical

**Installation Qualification, Performance,
Qualification and Operational
Qualification**

YUMIZEN H550
(Serial no: **210YAXH04009**)
Five Part Hematology Analyzer

For
LUPIN DIAGNOSTICS
MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034

#246, Okhla Industrial Estate, Phase III, New Delhi 110020, India, Tel: 011 4646 5000.
Visit us: <http://www.horiba.com/in/>

Table of Contents:

Section 1 General Instructions

Section 2 Installation Qualification

- I. Installation Qualification.
- II. Installation Procedure.
- III. Installation Certificate.

Section 3 Operational Qualification

- I. Operational Qualification.
- II. Operational Training Record.
- III. Operator Maintenance Protocol.
- IV. Operational Certificate.

Section 4 Performance Qualifications



- I. Performance Qualification.
- II. Performance Certificate.

Section 6 Attachments

General Instructions:

- HORIBA India Pvt. Ltd. is responsible for installation of YUMIZEN H550, Five Part Hematology Analyzer, at LUPIN DIAGNOSTICS, BENGALURU as per the attached protocol.
- An authorized HORIBA India Pvt. Ltd., representative will physically check the system and proceed for the installation.
- This installation protocol will be followed as specified by the manufacturer.
- Installation checks will also be performed to verify that the instrument has been installed with proper connections and utilities.
- After the installation of the system, Instrument calibration & QC will be performed by the authorized HORIBA India Pvt. Ltd. representative.
- An authorized HORIBA India Pvt. Ltd. representative will also perform the precision check on the system to check if it is as per the claim of the manufacturer.
- The results obtained for Calibration, QC & Precision checks will be verified by the qualified trained employee of LUPIN DIAGNOSTICS, BENGALURU along with an authorized HORIBA India Pvt. Ltd., representative.
- On completion of the Installation all the necessary documents of the System checks will be used to evaluate the instrument installation in accordance with the manufacturer's protocol and intended use.
- An authorized HORIBA India Pvt. Ltd., representative will verify the documents of the system checks and approve the same.
- Successful completion of this protocol will verify that this instrument has been installed in accordance with the intended usage.

Report Sign Off

Prepared by:	HORIBA Medical - HORIBA India Pvt. Ltd.		
Name:	Mr. MITHUN KRISHNA C U		
Title:	Sign:	Date: 27/03/2023	
ENGINEER-CUSTOMER SUPPORT			
Reviewed by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Sign:	Date: 27/03/23.	
Operations			
Approved by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh.		

HORIBA HORIBA India Private Limited
Medical

HORIBA

Medical

YUMIZEN H550
(Serial no: **210YAXH04009**)
Five Part Hematology Analyzer

Installation Qualification

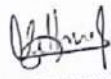
For

LUPIN DIAGNOSTICS
Maa Grace, 7th Main, Koramangala
Bengaluru 560034


#246, Okhla Industrial Estate, Phase III, New Delhi 110020, India, Tel: 011 4646 5000.
Visit us: <http://www.horiba.com/in/>

A. Installation Qualification

1. Installation Requirement :

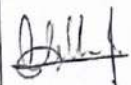
Sr. No.	Description	Compliance (Yes/No)	Verified by & Date
1.	Environmental conditions: Indoor Location not exposed to sunlight, water and vibration free platform. Temperature of 16°C to 34°C and maximum relative humidity of 80%.	Yes	 27/03/2023
2.	Physical Space Requirement: 36(W) x 36(D) x 53(H)cm with at least 20 cm space at the back of the instrument from the wall.	Yes	
3.	Electrical Requirements: Power supply - 100Vac- 240 Vac +/- 10%. Power consumption – Maximum 165 VA with earth less than 3 V.	Yes	
4.	UPS connection available.	Yes	

2. The instrument has been checked for the following:

Sr. No.	Verification	Provided (Yes/No)	Verified by & Date
1.	Instrument is identified Instrument Serial No.:210YAXH04009	Yes	 27/03/2023
2.	Manufacturer's specifications: Technical and Physical Requirement	Yes	
3.	Accessories / consumables are listed as per checklist (Provided along)	Yes	
4.	System checked for any External / physical damage.	Yes	
5.	Instrument User Manual (Soft Copy)	Yes	

2. Equipment Description:

YUMIZEN H550, Five Part Hematology Analyzer

Instrument Identification	Verified Yes/No	Verified by / Date
Equipment Type: Hematology Analyzer	YES	 27/03/2023
Model: YUMIZEN H550	YES	
Manufacturer: HORIBA Medical, France	YES	
Marketed By: HORIBA Medical - HORIBA India Pvt. Ltd.	YES	
Equipment #: One	YES	
Serial Number :210YAXH04009	YES	
Dimensions :53(W) x 66.8(D) x 62.1(H)	YES	
Power Supply: 100Vac to 240Vac (+/-10%) 50Hz to 60Hz	YES	
Power Consumption: 165 VA	YES	

4. Accessories/Consumables:

The accessories were supplied with the instrument as per the check list. Check & verified in case they are found to be in order.

Qualified Trained employee name	Verified By	Date
Rajeesh.A	Rajeesh.	27/3/23
Yeshwanth Padashetty		
Sreesagar Deepak. B. N		
Mithun Krishna C U		

3. Preventive Maintenance:

The routine preventive maintenance of the system will be carried out by an authorized HORIBA India Pvt. Ltd., engineer at a specified time interval as recommended by the manufacturer.

4. Spare Parts:

HORIBA India Pvt. Ltd strongly recommends the end user to maintain a basic consumable parts onsite to minimize down time due to minor failures. Spare parts as provided in the installation kit.

B. Installation Procedure:

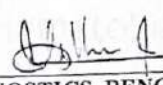


1. Putting the system at the predefined and pre inspected location (Having suitable Working Conditions).
2. Removal of the internal packing material of the system.
3. Place the Instrument on the bench top (Vibration free).
4. Connect the Power cord to the YUMIZEN H550.
6. Turn on the inbuilt Printer.
7. All the operating software has been loaded in to YUMIZEN H550.
8. Now from backside of the instrument turn the power switch ON. YUMIZEN H550 goes through its power up and self-test sequence.
9. The YUMIZEN H550 login menu is displayed after the Start up cycle is completed. Enter the credentials.

C. INSTALLATION CERTIFICATE:

HORIBA
Medical

HORIBA India Private Limited

Instrument Name : YUMIZEN H550.
Serial Number : 210YAXH04009
Customer Details : LUPIN DIAGNOSTICS,
With complete address : MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034
Installation Date : 27/03/2023
Warranty expires on :RR

Prepared by:	HORIBA Medical - HORIBA India Pvt. Ltd.		
Name:	Mr. MITHUN KRISHNA C U		
Title:	Sign:	Date: 27/03/2023	
Customer Support Engineer			
Reviewed by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Sign:	Date: 27/03/22.	
Operations			
Approved by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Sign:	Date: 27/03/23	
Operations			

Conclusion: Instrument has been qualified for Installation. Hence it has been taken for Operational Qualification.

HORIBA HORIBA India Private Limited
Medical

HORIBA
Medical

YUMIZEN H550
(Serial no: **210YAXH04009**)
Five Part Hematology Analyzer

Operational Qualification
For

LUPIN DIAGNOSTICS
MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034

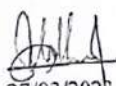
#246, Okhla Industrial Estate, Phase III, New Delhi 110020, India, Tel: 011 4646 5000.
Visit us: <http://www.horiba.com/in/>

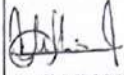
A. Operational Qualification

1. Instrument Identification:

Instrument Name : YUMIZEN H550
Serial Number : 210YAXH04009

2. Following is the list of actions performed and verified for running the system routinely.

Sr. No.	Test Name	Test Purpose	Method	Observation	Verified Sign/Date
1.	SYSTEM SWITCH ON	TO CHECK THE ERROR FREE POWER UP.	Switch on the main, switch on the system. Login into yumizen Application software. Start up cycle is performed .Login in as User and check for the Screen Errors.	Done	 27/03/2023
2.	STARTUP CYCLE	TO CHECK THE BACK GROUND IS OK.	Run a startup cycle from the main menu; check if the background is in the acceptable range.	Done	
3.	PRINTER TEST	TO CHECK STATUS OF THE PRINTER.	Initiate a self-test of printer or run a sample to check the print.	Done	
4.	REAGENT STATUS	TO CHECK ADEQUATE REAGENT IS AVAILABLE FOR ANALYSIS	Manually check in the reagent bottles or else change the reagent from the Status Menu.	Done	
5.	SAMPLE ANALYSIS	TO CHECK PROPER FUNCTIONING OF SAMPLE ANALYSIS	1. To run Stat/ Manual sample, press on sample identification and enter the sample ID and press on validate.	Done	
6.	ARCHIVE AND CURRENT REPORTS	TO RECOVER THE SAMPLE RESULT FROM ARCHIVE AND CURRENT REPORTS	Press on Results History icon and view the current results. To view archived reports, Select Archive results and select the date of the reports and view the report.	Done	

7.	QUALITY CONTROL DATA	TO RECOVER QUALITY CONTROL DATA AND LJ GRAPH	Press on QC Icon from the Main Menu and select the Lot No. and press on Print Icon to print LJ graph. To view on QC Runs ,Click on Datas .	Done	 27/03/2023
8.	FLAGS AND ALARMS	TO CHECK THE PROPER FLAGS AND ALARMS FOR SAMPLES	Run sample to verify alarms and flags.	Done	

B. Operational Training Record

Operator Training: The users responsible for the operation of this instrument will be trained on the proper usage of the system. Training will focus on the basic operation and maintenance of the system. The training of the operators will be documented and the training records will be filled as indicated below:

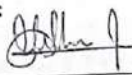


Sr. No.	Operators	Designation	Name & Sign of the Trainer.	Date
1.	Griendra	Sr. lab tech	Deepak	27/5/23
2.	Malikasin	lab tech	Deepak	27/5/23
3.	N. Sankar Ganesan	lab tech	Deepak	27/5/23
4.	A. Nagaraj	lab tech	Deepak	27/5/23
5.	Vinayak D.N	lab tech	Deepak	27/5/23
6.	Trupala	lab tech	Deepak	27/5/23
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				

C. Operator Maintenance Protocol

Maintenance and Troubleshooting: Perform Concentration Cleaning as advised by the HORIBA Medical Representative. Run a Shutdown cycle before switching off the analyzer.

D. OPERATIONAL CERTIFICATE:

Instrument Name : YUMIZEN H550.
Serial Number : 210YAXH04009
Customer Details : LUPIN DIAGNOSTICS,
With complete address : MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034
Installation Date : 27/03/2023
Warranty expires on :RR

Prepared by:	HORIBA Medical - HORIBA India Pvt. Ltd.	
Name:	Mr. MITHUN KRISHNA C U	
Title:	Sign: 	Date: 27/03/2023
Customer Support Engineer		
Reviewed by:	LUPIN DIAGNOSTICS, BENGALURU	
Name:	Swami Nath Singh	
Title:	Sign: 	Date: 27/3/23
Operations		
Approved by:	LUPIN DIAGNOSTICS, BENGALURU	
Name:	Swami Nath Singh	
Title:	Sign: 	Date: 27/3/23
Operations		

Conclusion: Instrument has been qualified for Operational. Hence it has been taken for Performance Qualification.

HORIBA HORIBA India Private Limited
Medical

HORIBA

Medical

YUMIZEN H550
(Serial no: **210YAXH04009**)
Five Part Hematology Analyzer

Design Qualification

For

LUPIN DIAGNOSTICS
Maa Grace, 7th Main, Koramangala
Bengaluru 560034

#246, Okhla Industrial Estate, Phase III, New Delhi 110020, India, Tel: 011 4646 5000.
Visit us: <http://www.horiba.com/in/>

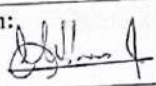


A. Design Qualification

This is to certify that Hematology analyzer specially designed for perform the following parameters.

1. WBC = White Blood Cell Count
2. RBC = Red Blood Cell Count
3. HGB = Hemoglobin Concentration
4. HCT = Hematocrit
5. MCV = Mean Corpuscular Volume
6. MCH = Mean Corpuscular Hemoglobin
7. MCHC = Mean Cellular Hemoglobin Concentration
8. PLT = Platelet Count
9. RDW-CV = Red Cell Distribution Width (Coefficient of Variation)
10. RDW-SD = Red Cell Distribution Width (Standard Deviation)
11. PDW = Platelet Distribution Width
12. MPV = Mean Platelet Volume
13. PCT = Plateletcrit
14. P-LCC # = Platelet Large Cell Concentration
15. P-LCR % = Platelet Large Cell Ratio
16. NEUT# = Neutrophil Count
17. LYMPH# = Lymphocyte Count
18. MONO# = Monocyte Count
19. EOSI# = Eosinophil Count
20. BASO# = Basophil Count
21. NEUT% = Neutrophil Percent
22. LYMPH% = Lymphocyte Percent
23. MONO% = Monocyte Percent
24. EOSI% = Eosinophil Percent
25. BASO% = Basophil Percent
26. LIC# = Large Immature Cells Count
27. LIC% = Large Immature Cells Percent

B. DESIGN CERTIFICATE:

Instrument Name : YUMIZEN H550
Serial Number : 210YAXH04009
Customer Details : LUPIN DIAGNOSTICS,
With complete address : MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034
Installation Date : 27/03/2023
Warranty expires on : RR

Prepared by:	HORIBA Medical - HORIBA India Pvt. Ltd.		
Name:	Mr. MITHUN KRISHNA C U		
Title:	Sign:	Date: 27/03/2023	
Customer Support Engineer			
Reviewed by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Sign:	Date: 27/3/23	
Operations			
Approved by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Sign:	Date: 27/3/23	
Operations			

Conclusion: Instrument has been qualified for Operational. Hence it has been taken for Design Qualification.

HORIBA HORIBA India Private Limited
Medical

HORIBA
Medical

YUMIZEN H550
(Serial no: **210YAXH04009**)
Five Part Hematology Analyzer

Performance Qualification

For

LUPIN DIAGNOSTICS
MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034

#246, Okhla Industrial Estate, Phase III, New Delhi 110020, India, Tel: 011 4646 5000.
Visit us: <http://www.horiba.com/in/>

A. Performance Qualification

A. Instrument Identification:

Instrument Name : YUMIZEN H550.
Serial Number : 210YAXH04009

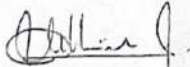
B. Following is the list of test to be performed and verified

- Blank Reference cycle: To verify the Startup Cycle of the instrument.

Serial No: 210YAXH04009

Parameters	Acceptable Range	Observed Value
WBC $10^3/\text{mm}^3$	$\leq 0.3 \times 10^3/\text{mm}^3$	$0.06 \times 10^3/\text{mm}^3$
RBC $10^6/\text{mm}^3$	$\leq 0.02 \times 10^6/\text{mm}^3$	$0.0 \times 10^6/\text{mm}^3$
HGB g/dL	$\leq 0.3 \text{ g/dl}$	0.0
PLT $10^3/\text{mm}^3$	$\leq 5 \times 10^3/\text{mm}^3$	$1 \times 10^3/\text{mm}^3$

MITHUN KRISHNA GU

Conducted By: 

Swami Nath Singh.
Verified By:

HORIBA

Explore the future

HORIBA India Private Limited

246, Okhla Industrial Estate Phase-III,
New Delhi 110020, India
Tel : +91 (11) 4546 5000 / 4549 5001
Fax : +91 (11) 4546 5020
Http : //www.horiba.com
GIN : U73100DL2006PTC150222

Date: 27/03/2023

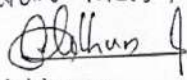
CALIBRATION CERTIFICATE

This is to state that the hematology cell counter model **HORIBA Medical: YUMIZEN H550**, bearing Serial no: **210YAXH04009** at **LUPIN DIAGNOSTICS, BANGALORE** was calibrated with Calibrator on **27th MARCH 2023**. Subsequently controls were processed and found them in respective range.

Calibrator Used: **ABX MINOCAL**
Lot No.: **CX 481**
Expiry Date: **0505/2023**

SL. No.	Tested Parameter	Remarks
1	Repeatability/ Precision	Passed
2	Start up/Blank Cycle	Passed
3	Calibration	Passed
4	Quality Control	Passed

Next calibration Cycle is due on **26rd MARCH 2024**.

MITHUN KRISHNA

Mithun krishna c u



Customer Support Engineer,
Horiba Medical.

- **Calibration:** To calibrate the Instrument using calibrator (ABX Minocal) and verify the same.

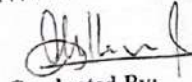
Procedure: Go to Quality Assurance icon on main screen and then Calibration icon. Run Calibrator (ABX Minocal) 6 times without taking the values of first run, calibrate the instrument using average of the last 5 runs.

Lot: CX 481; **Expiry:** 05/05/2023.

Serial No: 210YAXH04009

Parameter	Target Value (As per Kit Insert)	Mean Value	Observed CV%	Acceptance CV%	Comments
WBC	8.80	8.85	1.26	<3%	PASSED
RBC	4.42	4.42	0.57	<2%	PASSED
HGB	12.5	12.7	0.26	<1%	PASSED
HCT	36.5	34.1	0.63	<2%	PASSED
PLT	248	234	0.95	<5%	PASSED

MITHUN KRISHNA (C.U)


Conducted By:

Swami Nath Singh.
Verified By:

- Control Runs: The quality of the analyzer is checked by running three levels of Controls & getting the values in the range as per the kit insert.

Lot: ABX DIFFTROL PX440L; **Exp:** 5/05/2023
Serial No: 210YAXH04009
Level I: Low Control

Parameters	Target	Tolerance	Observed Value Dated 27/03/2023	Comments
RBC 10 ⁶ /mm ³	2.27	0.16	2.27	Passed
HGB g/dL	6.0	0.40	5.9	Passed
HCT %	18.4	1.50	18.5	Passed
MCV μm ³	81.0	5.00	81.5	Passed
MCH pg	26.4	2.00	25.8	Passed
MCHC g/dL	32.6	3.00	31.7	Passed
RDW %	15.5	4.00	12.0	Passed
PLT 10 ³ /mm ³	77	20.0	72	Passed
MPV μm ³	9.2	2.00	9.4	Passed
WBC 10 ³ /mm ³	2.90	0.40	2.99	Passed
NEU %	41.8	10.0	44.8	Passed
NEU#	1.21	0.35	1.34	Passed
LYM%	40.4	12.0	38.4	Passed
LYM #	1.17	0.33	1.15	Passed
MON %	7.3	7.3	7.2	Passed
MON #	0.21	0.21	0.21	Passed
EOS%	6.7	6.4	9.2	Passed
EOS#	0.19	0.19	0.28	Passed
BAS%	3.8	3.8	0.4	Passed
BAS#	0.11	0.11	0.01	Passed

Level II: Normal Control

Parameters	Target	Tolerance	Observed Value Dated 27/03/2023	Comments
RBC 10 ⁶ /mm ³	4.52	0.20	4.49	Passed
HGB g/dL	13.2	0.50	12.8	Passed
HCT %	40.2	2.00	40.6	Passed
MCV μm ³	89.0	5.00	90.3	Passed
MCH pg	29.2	2.00	28.6	Passed
MCHC g/dL	32.8	3.00	31.6	Passed
RDW %	14.5	4.00	10.7	Passed
PLT 10 ³ /mm ³	261	30.0	254	Passed

HORIBA HORIBA India Private Limited
Medical

MPV μm^3	9.3	2.00	9.3	Passed
WBC $10^3/\text{mm}^3$	8.30	1.00	8.53	Passed
NEU %	45.6	10.0	49.4	Passed
NEU #	3.78	0.90	4.22	Passed
LYM %	42.0	8.00	41.6	Passed
LYM #	3.49	0.70	3.54	Passed
MON %	4.4	4.4	3.9	Passed
MON #	0.37	0.37	0.33	Passed
EOS%	3.7	3.7	4.4	Passed
EOS#	0.31	0.31	0.38	Passed
BAS%	4.2	4.2	0.7	Passed
BAS#	0.35	0.35	0.06	Passed

Level III: High Control

Parameters	Target	Tolerance	Observed Value Dated 27/03/2023	Comments
RBC $10^6/\text{mm}^3$	5.25	0.25	5.14	Passed
HGB g/dL	16.4	0.60	16	Passed
HCT %	49.4	2.50	48	Passed
MCV μm^3	94	5.00	93	Passed
MCH pg	31.2	2.50	31.2	Passed
MCHC g/dL	32.8	3.00	33.4	Passed
RDW %	14.5	4.00	11.3	Passed
PLT $10^3/\text{mm}^3$	509	50.0	490	Passed
MPV μm^3	10.3	2.00	10.3	Passed
WBC $10^3/\text{mm}^3$	17.90	2.20	17.91	Passed
NEU %	65.8	10.0	70.2	Passed
NEU #	12.05	1.90	12.57	Passed
LYM %	22.1	8.00	21.9	Passed
LYM #	4.04	1.50	3.92	Passed
MON %	3.6	3.6	3.3	Passed
MON #	0.66	0.66	0.59	Passed
EOS%	4.0	4.0	4.1	Passed
EOS#	0.73	0.73	0.74	Passed
BAS%	4.5	4.5	0.5	Passed
BAS#	0.82	0.81	0.09	Passed

MITHUN KRISHNA (U)

Conducted By:

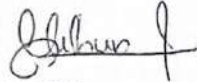
Swami Nath Singh.
Verified By:

- Precision Study: Precision is checked by running blood sample in 10 replicates & getting CV% in within acceptance.

Serial No: 210YAXH04009

Parameters	CV % Acceptance	CV % Observed	Comments
RBC $10^6/\text{mm}^3$	< 2.0	1.45	PASS
HGB g/dL	< 1.5	1.25	PASS
HCT %	< 2.0	1.66	PASS
PLT $10^3/\text{mm}^3$	< 5.0	2.48	PASS
WBC $10^3/\text{mm}^3$	< 2.5	1.45	PASS

MITHUN KRISHNA C.U



Conducted By:

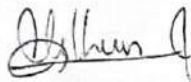
Swami Nath Singh.
Verified By:

- Carryover Study: Carryover is checked by running quality controls (Low & high) in 3 replicates & getting CV% in within acceptance.
- Carry Over % = $(L1-L3) * 100 / (H3-L3)$.

Serial No: 210YAXH04009

Parameters	WBC $10^3/mm^3$	RBC $10^6/mm^3$	HGB g/dL	PLT $10^3/mm^3$
Carry Over (%)	-2.6	-2.4	0.0	0.2
Manufacturer acceptable CV%	<2%	<2%	<2%	<2%
Status	Passed	Passed	Passed	Passed

MITHUN KRISHNA (U)

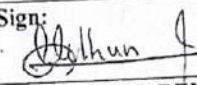




Conducted By:

Swami Navu Singh.
Verified By:

B. PERFORMANCE CERTIFICATE:

Instrument Name : YUMIZEN H550.
Serial Number : 210YAXH04009
Customer Details : LUPIN DIAGNOSTICS,
With complete address : MAA Grace12/1,7th Main,Koramangala
Bengaluru 560034
Installation Date : 27/03/2023
Warranty expires on :RR

Prepared by:	HORIBA Medical - HORIBA India Pvt. Ltd.		
Name:	Mr. MITHUN KRISHNA C U		
Title:	Deputy Service Manager	Sign:	
Reviewed by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Operations	Sign:	 Date: 27/3/23
Approved by:	LUPIN DIAGNOSTICS, BENGALURU		
Name:	Swami Nath Singh		
Title:	Operations	Sign:	 Date: 27/3/23

Conclusion: Instrument has been qualified for Performance.