

**TEST REPORT**

**IEC 61056 – 1 : 2003**

**General purpose lead-acid batteries (valve regulated types) :**


**Part 1: General requirements, functional characteristics - Methods of test.**


Report Reference No. : NP-12Ah-01  
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Testing Laboratory : **TAIWAN YUASA BATTERY CO. LTD.**  
No.11 Lane 227, Fuying RD.,  
Address : Hsinchuang City, Taipei Hsien,  
TAIWAN

Test specification:  
Standard : IEC 61056 - 1 : 2003

Test item description : Valve Regulated Lead-Acid Industrial Battery  
Trade Mark : YUASA  
Manufacturer : TAIWAN YUASA BATTERY CO. LTD.  
Model/Type reference : NP12-12  
Ratings : 12Ah, 12V

Tested by (name & signature) :  150407

Approved by (name & signature) : 

## Report of Test Data

Battery Type NP12-12  
 Batteries tested to: Standard: IEC 61056-1: 2003

IEC 61056-1 Clause No.	Test Clause Title	SPC (Requirement)	Start Date (YY MM DD)	Times (Duration of test)	Number (No. of test samples)	Test Results					Determine (Conclusion)	
						Battery Test No.	NO.1	NO.2	NO.3	NO.4		NO.5
4.1 & 6.2	Capacity C <sub>20</sub> (12Ah)	C <sub>a</sub> ≥ C <sub>20</sub> (within 5 cycles)	2012.04.10	2 Days	5	Battery Test No.	NO.1	NO.2	NO.3	NO.4	NO.5	OK (Pass)
						Duration (H)	22.94	22.98	22.89	22.78	23.02	
4.6 & 6.3	High Rate Capacity (C1)	t ≥ 20 min	2012.04.13	1 Day	5	Battery Test No.	NO.1	NO.2	NO.3	NO.4	NO.5	OK (Pass)
						Duration (min)	49.54	49.35	49.85	48.85	48.96	
4.2.1 & 6.4	Endurance in cycles	Cycles ≥ 200	2012.04.17	1 Year	2	Battery Test No.	NO.1	NO.2				OK (Pass)
						No. Of cycles	752	802				
4.2.2 & 6.6	Float service endurance (40°C)	8.5 months	2012.04.18	2 Years	2	Battery Test No.	NO.3	NO.4				OK (Pass)
						Duration (months)	19.99	15.99				
4.3 & 6.7	Charge retention	≥ 75% C <sub>a</sub>	2012.04.19	125 Days	5	Battery Test No.	NO.6	NO.7	NO.8	NO.9	NO.10	OK (Pass)
						Charge Retained	85.19%	84.77%	85.16%	85.06%	84.90%	
4.4 & 6.8	Maximum permissible current	No damage, t ≥ 150 sec	2012.04.23	5 Days	2	Battery Test No.	NO.11	NO.12	NO.11	NO.12		OK (Pass)
						Duration (min:sec)	No damage	No damage	21:12	20:58		
4.5 & 6.9	Charge acceptance after deep discharge	C <sub>a</sub> ≥ 0.75 × C <sub>20</sub>	2012.04.24	20 Days	3	Battery Test No.	NO.13	NO.14	NO.15			OK (Pass)
						Charge Acceptance	99.18%	96.28%	98.12%			
4.7 & 6.10	Gas emission intensity	Gas Recombination Efficiency > 90%	2012.04.23	6 Days	1	Battery Test No.	NO.16					OK (Pass)
						Efficiency	98.68%					
4.8 & 6.11	Vibration resistance characteristic	No deformation; No damage; No leakage of electrolyte; V > 12V	2012.05.03	1 day	2	Battery Test No.	NO.11		NO.12			OK (Pass)
						Result	No deformation; No damage; No leakage of electrolyte; V > 12V		No deformation; No damage; No leakage of electrolyte; V > 12V			
4.9 & 6.12	Shock resistant characteristic	No deformation; No damage; No leakage of electrolyte; V > 12V	2012.05.21	1 day	2	Battery Test No.	NO.13		NO.14			OK (Pass)
						Result	No deformation; No damage; No leakage of electrolyte; V > 12V		No deformation; No damage; No leakage of electrolyte; V > 12V			