

5.3. C28x IQmath Library Benchmarks

Function Name	IQ Format	Execution Cycles	Accuracy (in bits)	Program Memory (words)	Input format	Output format	Remarks
Trigonometric Functions							
IQNasin	1-29	154		82 words	IQN	IQN	Note A
IQNsin	1-29	46	30 bits	49 words	IQN	IQN	
IQNsinPU	1-30	40	30 bits	41 words	IQN	IQN	
IQNacos	1-29	170		93 words	IQN	IQN	Note A
IQNcos	1-29	44	30 bits	47 words	IQN	IQN	
IQNcosPU	1-30	38	29 bits	39 words	IQN	IQN	
IQNatan2	1-29	109	26 bits	123 words	IQN	IQN	
IQNatan2PU	1-29	117	27 bits	136 words	IQN	IQN	
IQatan	1-29	109	25 bits	123 words	IQN	IQN	
Mathematical Functions							
IQNexp	1-30	190		61 words	IQN	IQN	Note A
IQNlog	1-29	148		157 words	IQN	IQN	
IQNsqr	1-30	63	29 bits	66 words	IQN	IQN	
IQNisqr	1-30	64	29 bits	69 words	IQN	IQN	
IQNmag	1-30	86	29 bits	96 words	IQN	IQN	
Arithmetic Functions							
IQNmpy	1-30	~ 6	32 bits	NA	IQN*IQN	IQN	INTRINSIC
IQNrmpy	1-30	17	32 bits	13 words	IQN*IQN	IQN	
IQNrsmPy	1-30	21	32 bits	21 words	IQN*IQN	IQN	
IQNmpyl32	1-30	~ 4	32 bits	NA	IQN*long	IQN	C-MACRO
IQNmpyl32int	1-30	22	32 bits	16 words	IQN*long	long	
IQNmpyl32frac	1-30	24	32 bits	20 words	IQN*long	IQN	
IQNmpylQX		~ 7	32 bits	NA	IQN*IQN	IQN	INTRINSIC
IQNdiv	1-30	63	28 bits	71 words	IQN/IQN	IQN	
Format Conversion Utilities							
IQN	1-30	NA	N/A	NA	Float	IQN	C-MACRO
IQNtoF	1-30	22	N/A	20 words	IQN	Float	
IQNtoa	1-30	N/A	N/A	210 words	IQN	string	
atoiQN	1-30	N/A	N/A	143 words	char *	IQN	
IQNint	1-30	14	32 bits	8 words	IQN	long	
IQNfrac	1-30	17	32 bits	12 words	IQN	IQN	
IQtoIQN	1-30	~4	N/A	N/A	GLOBAL_Q	IQN	C-MACRO
IQNtoIQ	1-30	~4	N/A	N/A	IQN	GLOBAL_Q	C-MACRO
IQtoQN	1-15	~4	N/A	N/A	GLOBAL_Q	QN	C-MACRO
QNtoIQ	1-15	~4	N/A	N/A	QN	GLOBAL_Q	C-MACRO
Miscellaneous							
IQsat	1-30	~7	N/A	N/A	IQN	IQN	INTRINSIC
IQNabs	1-30	~2	N/A	N/A	IQN	IQN	INTRINSIC