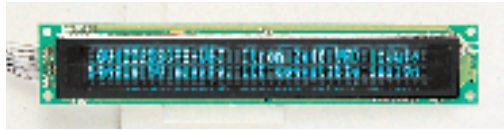


Vacuum Fluorescent Displays — Continued

Alphanumeric Modules NORITAKE-ITRON
LCD Compatible with 5mm Characters



These 5 7 dot-matrix VF displays are designed to be electrically and mechanically interchangeable with LCD modules. This allows customers high end products to provide a high quality display and wide operating temperature with virtually no re-design.

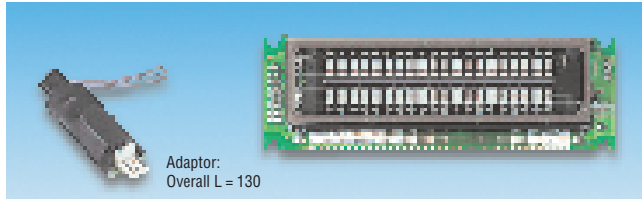
- 68 or 80 series MPU interface selection
- Optional external hardware reset input
- Single 5V input voltage
- Software power-down control <4mA
- Wide operating temperature range:- 20°C to +70°C

Format L C	Module Size H L D	Display Area H L	Fixing Centres H L	Typical 5V Current (mA)
2 16	80 36 12	11.5 51	31 75	230
2 20	36 115 15	11.5 71	29 108	130
4 20	60 98 17	20.9 71	55 93	300
2 40	33 182 17	11.5 139	26.5 175	300

OPT515

Format	Order Code	1+	3+	10+	25+
2 16	882-940				
2 20	882-951				
4 20	882-963				
2 40	882-987				

Alphanumeric Modules NORITAKE-ITRON



Adaptor: Overall L = 130

Alphanumeric 5 7 dot matrix vacuum fluorescent display modules featuring surface mount technology to permit compact size. The modules operate from a single 5V supply and CMOS LSI gives low power consumption.

S-Series Bi-directional Parallel Interface VFD Modules

The modules include control and interface logic, DC/DC converter, VF display and drivers. The interface connector is 26 way IDC.

Module Size H	W	D	Display Area H L	Fixing Centres H L	Order Code
44	176	28	16.0 100.2	36 157	947-842
52	242	20	16.0 188.6	42 3 2	280-495

Mounting hole dia. = 3.5

Format Char Lines	Character Size W H	I _{cc} (max) @ V _{cc} = 5V	User Definable Fonts	Mfrs. List No.	Order Code
2 0 2	3.3 5.0	400mA	5	PCS20026SCP-B-S20A	947-842
4 0 2	3.3 5.0	850mA	2	CU40026SCP-B-S26A2	280-495

OPT223

Format	Character Height	Order Code	1+	5+	10+	25+
2 0 2	5mm	947-842				
4 0 2	5mm	280-495				

T-Series Parallel and Serial Input Interface VFD Modules

The modules include DC/DC convertor, refresh memory, character generator and all control logics. Choice of high speed parallel interface or TTL level serial interface is available on most modules. The serial input rate is variable, covering levels from 300 bps to 19200 bps.

Power and serial data connection is through a 3 way connector (mating connector supplied). Parallel data connections are through standard IDC connectors, these are 16 way except for the 40 6 module which is 34 way. For suitable mating connectors see Order Code 208-802 (16 way) and 208- 838 (34 way).

An in-line adaptor, RS232 to TTL serial adaptor is available and is suitable for all modules in this range.

Module Size (overall) H	W	D	Display Area H L	Fixing Centres H L	Order Code
32	129	24.5	5 94	92 140	265-512
34	164	26.5	9 120	26 160	232-464
40	124	24.5	15 78	36.5 116	232-476
47	205	31.5	24 162	43.5 195.0	481-646
64	150	25.5	26 90	54 140	232-488
74	222	36.5	42 164	64.0 212.0	481-658
43	240	26.5	16 188	16.5 230	232-490
110	270	45	46 188	96 260	232-506

Mounting slot or hole dia. = 3.5

Format Char. Line	Character Size W H	I _{cc} (max.) @ V _{cc} = 5V	User Definable Fonts	Mfrs. List No.	Order Code
2 0 1	3.3 5.0	200mA	2	CU205SCP-B-T21A	265-512
2 0 1	4.45 8.8	500mA	2	CU209SCP-B-T20A	232-464
2 0 2	2.55 4.65	420mA	8	CU20025SCP-B-T20A	232-476
2 0 2	6.2 9.5	700mA(typ)	2	CU20029SCP-B-T20A	481-646
2 0 4	3.0 5.0	500mA	2	CU20045SCP-B-T23A	232-488
2 0 4	6.4 9.1	400mA	2	CU20049SCP-B-T20A	481-658
4 0 2	3.3 5.05	800mA	2	CU40026SCP-B-T20A	232-490
4 0 6	3.5 5.0	2100mA	12	CU40066SCP-B-T20A	232-506

RS232 Adaptor

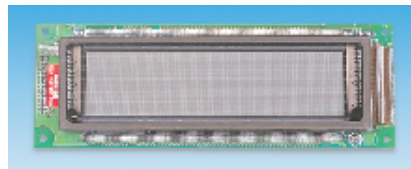
Supply voltage 5V

Supply current 20 to 30mA

OPT223a

Format	Character Height	Order Code	1+	3+	10+	25+
2 0 1	5.0mm	265-512				
2 0 1	8.8mm	232-464				
2 0 2	4.7mm	232-476				
2 0 2	9.0mm	481-646				
2 0 4	5.0mm	232-488				
2 0 4	9.0mm	481-658				
4 0 2	5.1mm	232-490				
4 0 6	5.0mm	232-506				
RS232 Adaptor		265-524				

Graphic NORITAKE-ITRON



Graphic module with 256 64 dot matrix configuration, designed to operate from a single +5V supply and utilizing surface mount technology. The module simultaneously displays characters and graphics with flicker free scroll and flash. It consists of a driver, 8 kbyte refresh RAM, character generator, DC/DC converter, display controller and necessary logic. The module has an 8 bit parallel bus interface. 4 different display combinations are possible with memory capacity of 4 screen pages at graphic mode, 8 screen pages at character mode.

The module requires a 3 way mating power connection Order Code 143-158 and a standard 26 way IDC connector for data connection Order Code 208-826.

Module Size H	W	D	Display Area H L	Fixing Centres H L	Font Format	Pixel Size	I _{cc} (max) @ V _{cc} = 5V
38.5	200	70	140 35	190 60	6 8	0.4 0.4	1500mA

Mounting hole dia. = 3.5

OPT258

Mfrs. List No.	Order Code	Price Each 1+
GU256X64-332	481-713	

Cold Cathode Fluorescent Tubes (CCFL)

Straight, 'L' & 'U' Shaped 1.8mm, 2.2mm, 2.6mm Diameters SLI



This is a range of cold cathode fluorescent tubes in various shapes and brightness. There is an inverter available to drive all of the variations. Among other things these small diameter tubes are for the backlighting of LCD displays but they may be used for other applications as well.

Type	Dia. (mm)	Glass Length ±1.0mm	Lamp Current ±10%	Lamp Voltage rms nom.	Brightness cd/M ² ±15%	Life (hours)	Mfrs. List No.	Order Code
Straight	1.8	205	5.0mA	535V	57,000	10,000	HMBSM18205	316-8591
Straight	2.2	205	5.0mA	515V	44,500	25,000	HMBSM22205	316-8608
Straight	2.6	205	5.0mA	500V	38,000	25,000	HMBSM26205	316-8610
'L' Shaped	2.6	90 120	5.0mA	520V	44,000	25,000	HMLSM2690-120	316-8621
'U' Shaped	2.6	120 90 120	5.0mA	780V	44,000	25,000	HMCMSM2690-120	316-8633

Input voltage min.	Input voltage max.	Input Current typ.	Input Current max.	Frequency min.	Frequency max.	Output Current min.	Output Current typ.	Output Current max.	Order Code		
Inverter 9.0V	9.5V	10.0V	480mA	560mA	35kHz	43kHz	51kHz	3.5mA	4.5mA	5.5mA	313-7879

OPT688

Style	Diameter	Order Code	1+	5+	10+	25+
Straight	1.8	316-8591				
Straight	2.2	316-8608				
Straight	2.6	316-8610				
'L' Shaped	2.6	316-8621				
'U' Shaped	2.6	316-8633				
Inverter		313-7879				