

FEATURES

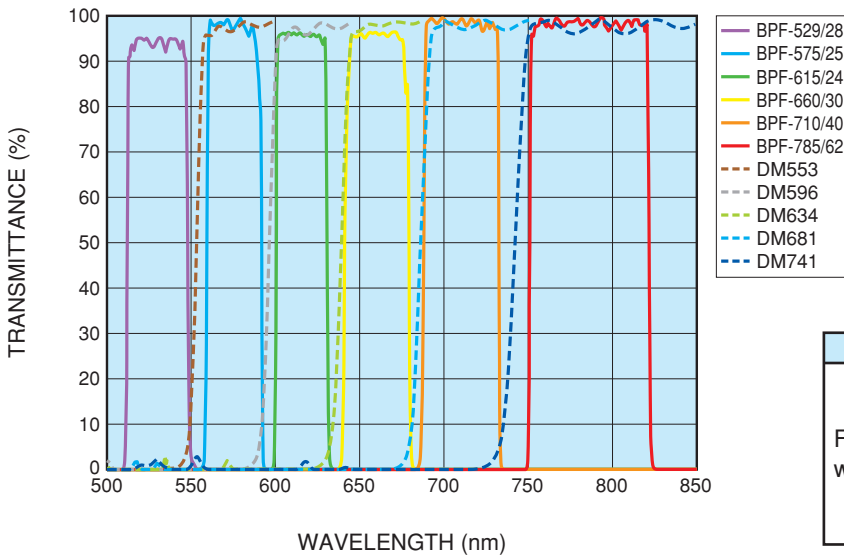
- 6-color measurement with one PMT module
- High efficiency filter optics
- Palm size
- Fiber optics input : SMA connector
(NA: less than 0.2, Core diameter: less than 1000 μm)

APPLICATIONS

- Biomedical fluorescence measurement
- Flow cytometer

CHARACTERISTICS

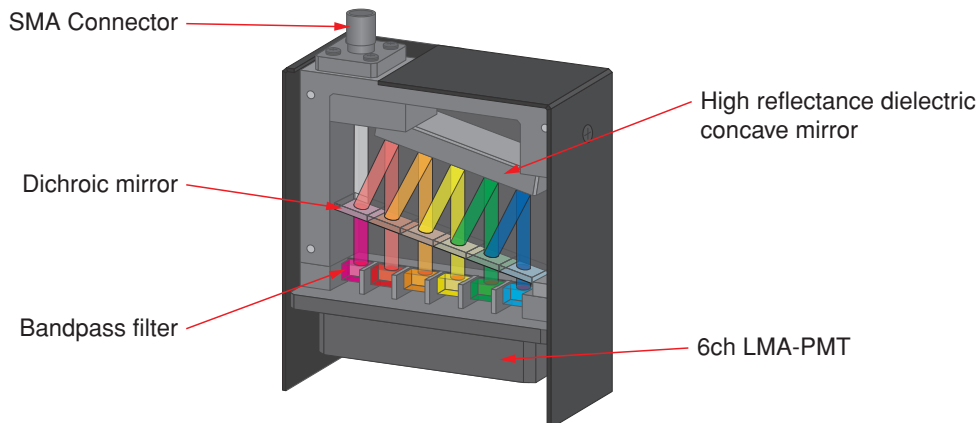
Figure 1: Standard bandpass filters and dichroic mirrors



Parameter	H15441-20	Unit
Filter center wavelength / width (FWHM)	CH1	785 (62)
	CH2	710 (40)
	CH3	660 (30)
	CH4	615 (24)
	CH5	575 (25)
	CH6	529 (28)
		nm

Choice of bandpass filters and dichroic mirrors for optical assembly

Besides the above standard setup of the optical system, we have a variety of bandpass filters and dichroic mirrors available in stock. Select the desired bandpass filters and dichroic mirrors needed to configure a PMT module with the optical assembly most ideal for your application. Moreover, if you provide us with your bandpass filters, we can use it to configure an optical system that matches your request. Please consult us for details.



SPECTRUM DETECTOR MODULE

H15441-20

SPECIFICATIONS

Parameter			Value	Unit	
Maximum ratings ^①	Input voltage	HVPS	+5.5	V	
		AMP	±5.5		
	-HV control voltage	+0.9	V		
	Individual gain adjustment voltage	+4.2	V		
	Output signal voltage ^②	DC output / ch	+0.5	V	
Pulse output / ch		+3.0			
General specifications	Input voltage range	HVPS	+4.5 to +5.5	V	
		AMP	±4.5 to ±5.5		
	Recommended individual gain adjustment voltage range	0 to +4.0	V		
	Gain adjustment range		1 to 0.01	/ch	
	Reference voltage output	-HV control	+1.25	V	
		Individual gain adjustment	+4.5		
	Wavelength range		400 to 900	nm	
	Overall dimensions		104 × 78 × 30	mm	
	Operating ambient temperature ^③		+5 to +45	°C	
	Storage temperature ^③		-15 to +45	°C	
	Weight	Typ.	281	g	
	Photomultiplier tube specifications	Cathode radiant sensitivity	at 785 nm	51.9	mA/W
			at 710 nm	69.5	
			at 660 nm	77.4	
at 615 nm			77.3		
at 575 nm			75.9		
at 529 nm			74.9		
Anode dark current / ch ^④ (after 30 min storage in darkness)		Typ.	5	nA	
Gain ^④	Typ.	1 × 10 ⁶	—		
Module/Amp specifications	Supply current	HVPS ^⑤	+80	mA	
		AMP ^⑥	±30		
	Frequency bandwidth	Min.	DC to 1 MHz	—	
	Current-to-voltage conversion factor ^②		0.02	V/μA	
	Ripple noise (p-p) ^⑦	Max.	1	mV	
Offset voltage	Typ.	±3	mV		

NOTE: ① Stresses above the maximum ratings may cause permanent damage to the device. Exposure to maximum conditions for extended periods may reduce device reliability.

② at 10 kΩ load

③ No condensation

④ at -800 V

⑤ +5 V input

⑥ ±5 V input

⑦ -HV control voltage = +0.8 V

Figure 2: Typical spectral response

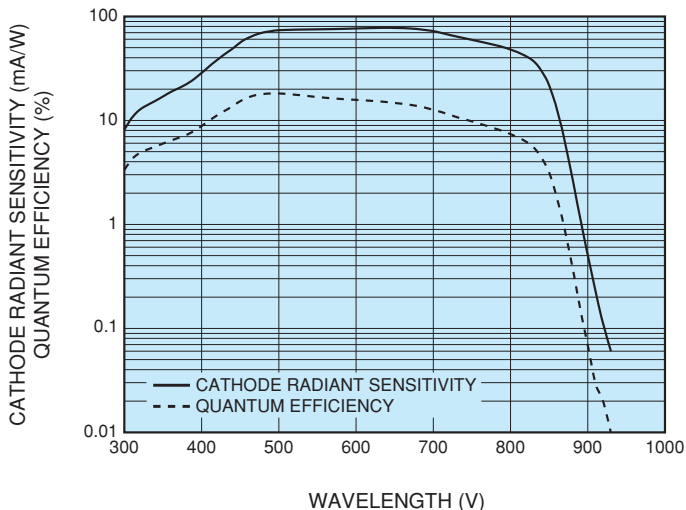


Figure 3: Individual gain adjustment voltage

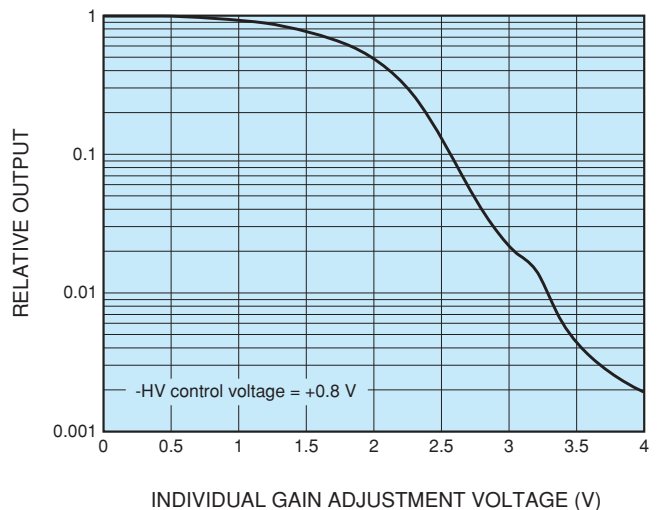
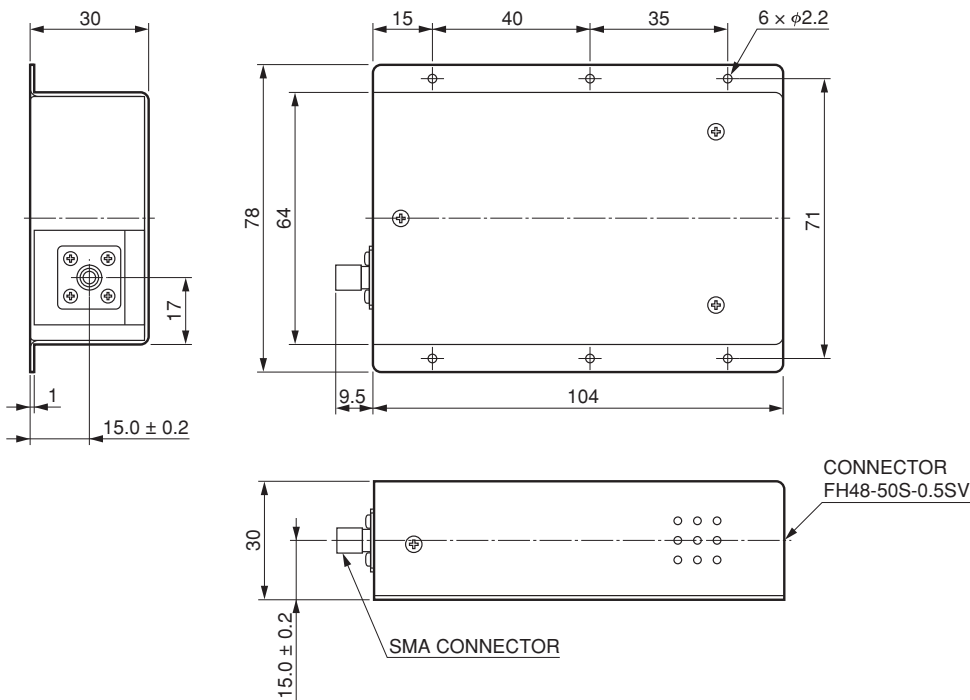


Figure 4: Dimensional outline (Unit: mm)



Flexible flat cable (Supplied)

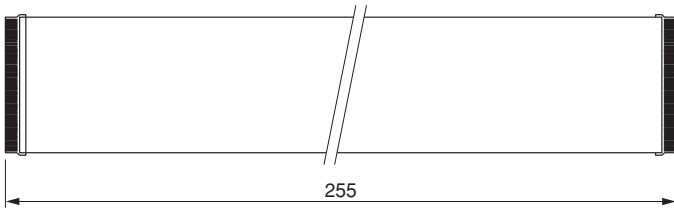
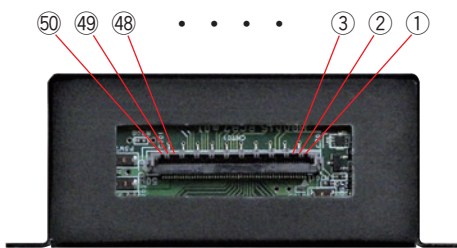


Figure 5: Pin assignment



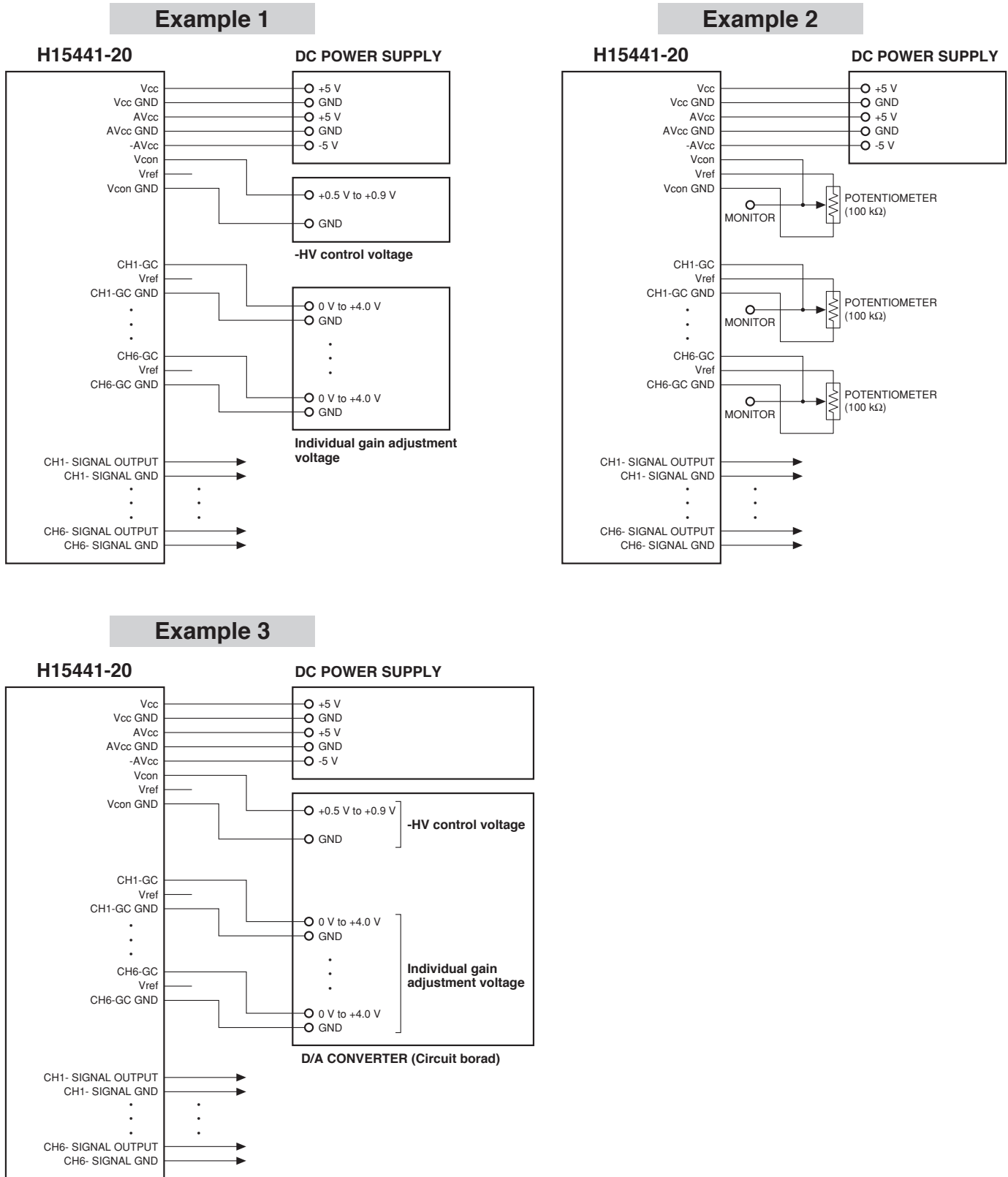
High voltage	-HV control voltage (Vcon)
-500 V	+0.5 V
-600 V	+0.6 V
-700 V	+0.7 V
-800 V	+0.8 V

No.	NAME	No.	NAME	No.	NAME
1	Vcc (+5 V INPUT)	18	CH6- SIGNAL GND	35	CH4-GC GND
2	Vcc (+5 V INPUT)	19	CH5- SIGNAL OUTPUT	36	CH3-GC (0 to +4.0 V INPUT)
3	Vcc GND	20	CH5- SIGNAL GND	37	CH3-GC GND
4	Vcc GND	21	CH4- SIGNAL OUTPUT	38	CH2-GC (0 to +4.0 V INPUT)
5	Vcon (+0.5 V to +0.9 V INPUT)	22	CH4- SIGNAL GND	39	CH2-GC GND
6	Vcon GND	23	CH3- SIGNAL OUTPUT	40	CH1-GC (0 to +4.0 V INPUT)
7	Vref (+1.25 V OUTPUT)	24	CH3- SIGNAL GND	41	CH1-GC GND
8	Vref GND	25	CH2- SIGNAL OUTPUT	42	AVcc (+5 V INPUT)
9	Vref (+4.5 V OUTPUT)	26	CH2- SIGNAL GND	43	AVcc (+5 V INPUT)
10	Vref GND	27	CH1- SIGNAL OUTPUT	44	AVcc (+5 V INPUT)
11	Do not use	28	CH1- SIGNAL GND	45	AVcc GND
12	GND	29	GND	46	AVcc GND
13	Do not use	30	CH6-GC (0 to +4.0 V INPUT)	47	AVcc GND
14	Do not use	31	CH6-GC GND	48	-AVcc (-5 V INPUT)
15	GND	32	CH5-GC (0 to +4.0 V INPUT)	49	-AVcc (-5 V INPUT)
16	GND	33	CH5-GC GND	50	-AVcc (-5 V INPUT)
17	CH6- SIGNAL OUTPUT	34	CH4-GC (0 to +4.0 V INPUT)		

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Figure 6: Sensitivity adjustment method



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