



NICOSH



ecatalogue



**CATALOGUE PRODUK
MODULAR OPERATING THEATER
(MOT)**

PT. NICOSH INDO MEDICAL

RUANG OPERASI KHUSUS MODULAR OPERATING THEATER (MOT) - BASIC (Pb)

NO	DESCRIPTION	QTY	
A	SISTEM TATA UDARA RUANG OPERASI		
	Dimensi Ruangan : 50 m2, Tinggi 3 m		
	Temperature : 20° c - 25° c		
	Kelembapan (RH) : 45% - 65%		
	Tekanan : 5 Pa s/d 10 Pa (Positif)		
A.1	HVAC SYSTEM (AHU)	1	Unit
1	Unit AHU (Air Handling Unit)		
	Meliputi : - Plug Fan		
	- Electric Heater		
	- UV Lamp		
	- Outdoor Unit		
	- Magnehelic		
	- Coil Evaporator		
A.2	AIR FILTER	1	Lot
1	Pre Filter		
2	Medium Filter		
3	Hepa Filter + Housing Hepa Filter(Ceilling)		
	Size : 2' x 4' x 1-1/2'	4	Unit
	Size : 2' x 3' x 1-1/2'	2	Unit
A.3	ACCESORIES & SUPPORT		
1	Ducting Supply & Return	1	Lot
2	Perforated Grilled	1	Lot
3	Dumper	1	Lot
4	Elektrikal Panel	1	Lot
5	Pengabelan	1	Lot
6	Support	1	lot
7	Canopy dan Pagar (Situasional)	1	lot
8	Pemipaan	1	lot
9	PLC (Programming Logic Control)	1	lot
10	LED Light	1	Set
11	Operating Timer	1	Set
12	Test Commissioning	1	lot
B	SANDWICH PANEL (RUANG OPERASI)		
	Dimensi Ruangan : 50 m2, Tinggi 3 m		
1	Sandwich Panel (Ceilling)	50	m2
2	Sandwich Panel (Wall)	63	m2
C	VINYL (RUANG OPERASI)		
	Dimensi Ruangan : 50 m2, Tinggi 3 m		
1	VINYL	50	m2
D	ALAT - ALAT PENUNJANG UNTUK RUANG OPERASI		
1	PASSBOX	1	Unit
2	Outlet Gas Medis	1	Set
3	Power Socket Box	1	Set
4	Manual Single Swing Hermetic Door with Timbal (Pb)	1	Set
5	Automatic Hermetic Sliding Door with Timbal (Pb)	1	Set
6	Cabinet	1	Unit
7	X - Ray Film Viewer	1	Set

Note : -Apabila ada pekerjaan di luar penawaran maka akan di masukkan kerja tambah

-Dimensi Ruangan bisa berubah tergantung penempatan Modul - Modul (± 40 s/d 60 cm)

RUANG OPERASI KHUSUS MODULAR OPERATING THEATER (MOT) - TOP GRADE (TIMBAL)

NO	DESCRIPTION	QTY	
A	SISTEM TATA UDARA RUANG OPERASI		
	Dimensi Ruangan : 49 m2, Tinggi 3 m		
	Temperature : 20° C - 25° C		
	Kelembapan (RH) : 45% - 65%		
	Tekanan : 5 Pa s/d 10 Pa (Positif)		
A.1	HVAC SYSTEM (AHU)	1	Unit
1	Unit AHU (Air Handling Unit)		
	- Plug Fan		
	- Electric Heater		
	- UV Lamp		
	-Outdoor Unit		
	- Magnehelic		
	- Coil Evaporator		
A.2	AIR FILTER	1	Lot
1	Pre Filter		
2	Medium Filter		
3	Hepa Filter + Housing Hepa Filter(Ceiling)		
	Size : 2' x 4' x 1-1/2'	4	Unit
	: 2' x 3' x 1-1/2'	2	Unit
A.3	ACCESSORIES & SUPPORT		
1	Ducting Supply & Return	1	Lot
2	Perforated Grilled	1	Lot
3	Dumper	1	Lot
4	Elektrikal Panel	1	Lot
5	Pengabelan	1	Lot
6	Support	1	lot
7	Canopy dan Pagar (Situasional)	1	lot
8	Pemipaan	1	lot
9	PLC (Programming Logic Control)	1	lot
8	LED Light	1	Set
9	Operating Timer	1	Set
10	STABILIZER	1	Set
11	Test Commissioning	1	lot
B	SANDWICH PANEL (RUANG OPERASI)		
	Dimensi Ruangan : 49 m2, Tinggi 3 m		
1	Sandwich Panel (Ceiling)	49	m2
2	Sandwich Panel (Wall)	63	m2
3	Timbal (Pb)	84	m2
C	VINYL (RUANG OPERASI)		
	Dimensi Ruangan : 49 m2, Tinggi 3 m		
1	VINYL	49	m2
D	ALAT - ALAT PENUNJANG UNTUK RUANG OPERASI		
1	PASSBOX	1	Unit
2	Scrub Station	1	Unit
3	Motorized Double Arm Pendant Surgery	1	Unit
4	Electric Double Arm Pendant Anesthesi	1	Unit
5	Outlet Gas Medis	1	Set
6	Power Socket Box	1	Set
7	Automatic Single Swing Hermetic Door with Timbal (Pb)	1	Set
8	Hermetic Sliding Door with Timbal (Pb)	1	Set
9	Cabinet	1	Unit
10	X - Ray Film Viewer	1	Set
11	Wall Glass Panel Printing Grafik	21	m2

Note :

- Apabila ada pekerjaan di luar penawaran maka akan di masukkan kerja tambah
- Dimensi Ruangan bisa berubah tergantung penempatan Modul - Modul (± 40 s/d 60 cm)

RUANG OPERASI MINOR MODULAR OPERATING THEATER (MOT) - PLUS

NO	DESCRIPTION	QTY	
A	SISTEM TATA UDARA RUANG OPERASI		
	Dimensi Ruangan : 36 m2, Tinggi 3 m		
	Temperature : 20° C - 25° C		
	Kelembapan (RH) : 45% - 65%		
	Tekanan : 5 Pa s/d 10 Pa (Positif)		
A.1	HVAC SYSTEM (AHU)	1	Unit
1	Unit AHU (Air Handling Unit)		
	- Plug Fan		
	- Electric Heater		
	- UV Lamp		
	-Outdoor Unit		
	- Magnehelic		
	- Coil Evaporator		
A.2	AIR FILTER	1	Lot
1	Pre Filter	2	pc
2	Medium Filter	2	pc
3	Hepa Filter + Housing Hepa Filter(Ceilling)		
	Size : 2' x 4' x 1-1/2'	4	pc
	: 2' x 3' x 1-1/2'	2	pc
A.3	ACCESSORIES & SUPPORT		
1	Ducting Supply & Return	1	Lot
2	Perforated Grilled	1	Lot
3	Dumper	1	Lot
4	Elektrikal Panel	1	Lot
5	Pengabelan	1	Lot
6	Support	1	lot
7	Pemipaan	1	lot
8	PLC (Programming Logic Control)	1	lot
9	LED Light	1	Set
10	Operating Timer	1	Set
11	Test Commissioning	1	lot
B	SANDWICH PANEL (RUANG OPERASI)		
	Dimensi Ruangan : 36 m2, Tinggi 3 m		
1	Sandwich Panel (Ceilling)	36	m2
2	Sandwich Panel (Wall)	80	m2
C	VINYL (RUANG OPERASI)		
	Dimensi Ruangan : 36 m2, Tinggi 3 m		
1	VINYL	36	m2
D	ALAT - ALAT PENUNJANG UNTUK RUANG OPERASI		
1	PASSBOX	1	Unit
2	Electric Single Arm Pendant Anestesi	1	Unit
3	Outlet Gas Medis	1	Set
4	Power Socket Box	1	Set
5	Automatic Single Swing Hermetic Door	1	Set
6	Automatic Single Sliding Hermetic Door	1	Set
7	X - Ray Film Viewer	1	Set

Note : - Apabila ada pekerjaan di luar penawaran maka akan di masukkan kerja tambah
 -Dimensi Ruangan bisa berubah tergantung penempatan Modul - Modul (± 40 s/d 60 cm)

RUANG OPERASI KHUSUS MODULAR OPERATING THEATER (MOT) - TOP GRADE

NO	DESCRIPTION	QTY	SAT
A	SISTEM TATA UDARA RUANG OPERASI KHUSUS		
	Dimensi Ruangan : 49 m2, Tinggi 3 m		
	Temperature : 20° c - 26° c		
	Kelembapan (RH) : 45% - 65%		
	Index Angka Kuman : < 10 Cfu/m ³		
	Tekanan : 5 Pa s/d 10 Pa (+)		
	Permenkes No. 7 Tahun 2019 tentang Persyaratan Teknis Bangunan Rumah Sakit (Ruang Operasi)		
	Permenkes No. 24 Tahun 2016 tentang Persyaratan Teknis Bangunan Rumah Sakit (Ruang Operasi)		
A.1	MAIN EQUIPMENT		
1	Unit AHU (Air Handling Unit)	1	Unit
2	Unit EXHAUST	1	Lot
	- Plug Fan		
	- UV Lamp		
	- Magnehelic		
	- Pre Filter (G-4)		
	- Hepa Filter (H-13)		
3	Elektrikal Panel	1	Lot
4	Pengabelan (Main Cable)	1	Lot
A.2	AIR FILTER		
1	Pre Filter		
2	Medium Filter		
3	Hepa Filter (Ceilling)		
4	Housing Hepa Filter (Ceilling)		
A.3	ACCESSORIES & SUPPORT		
1	Ducting Supply & Return	1	Lot
2	Ducting / Partisi (Low Return)	1	Lot
3	Perforated Grilled	1	Lot
4	Dumper	1	Lot
5	Support	1	lot
6	Pemipaan	1	lot
7	PLC (Programming Logic Control)	1	Set
8	STABILIZER	1	Unit
9	Test Commissioning	1	lot
B	SANDWICH PANEL (RUANG OPERASI)		
	Dimensi Ruangan : 49 m2, Tinggi 3 m		
1	Sandwich Panel (Ceilling)	49	m2
2	Sandwich Panel (Wall)	84	m2
C	VINYL (RUANG OPERASI)		
1	VINYL	49	m2
D	ALAT - ALAT PENUNJANG UNTUK RUANG OPERASI		
1	PASSBOX STATIC	1	Unit
2	Mechanical Single Arm Pendant Surgery	1	Unit
3	Electric Single Arm Pendant Anesthesie	1	Unit
4	Hermetic Auto Door		
5	Single Sliding Hermetic Auto Door	1	Unit
6	Single Swing Hermetic Auto Door	1	Unit
7	Instrument Cabinet	1	Unit
8	Scrub Sink 2 Bay	1	Unit
9	Wall Glass Panel	1	lot

NOTES :

- Apabila ada pekerjaan di luar penawaran maka akan di masukkan kerja tambah
- Dimensi Ruangan bisa berubah tergantung penempatan Modul - Modul (± 40 s/d 60 cm)

RUANG OPERASI UMUM MODULAR OPERATING THEATER (MOT) - TOP GRADE

NO	DESCRIPTION	QTY	SAT
A	SISTEM TATA UDARA RUANG OPERASI UMUM		
	Dimensi Ruangan : 42 m2, Tinggi 3 m		
	Temperature : 20° C - 26° C		
	Kelembapan (RH) : 45% - 65%		
	Index Angka Kuman : < 10 Cfu/m ³		
	Tekanan : 5 Pa s/d 10 Pa (+)		
	Permenkes No. 7 Tahun 2019 tentang Persyaratan Teknis Bangunan Rumah Sakit (Ruang Operasi)		
	Permenkes No. 24 Tahun 2016 tentang Persyaratan Teknis Bangunan Rumah Sakit (Ruang Operasi)		
A.1	MAIN EQUIPMENT		
1	Unit AHU (Air Handling Unit)	1	Unit
2	Unit EXHAUST	1	Lot
3	Elektrikal Panel	1	Lot
4	Pengabelan (Main Cable)	1	Lot
A.2	AIR FILTER		
1	Pre Filter		
2	Medium Filter		
3	Hepa Filter (Ceilling)		
	Size : 24" x 48" x 3"	4	Pcs
	: 24" x 36" x 3"	2	Pcs
4	Housing Hepa Filter (Ceilling)		
	Size : 2' x 4' x 1-1/2'	4	unit
	: 2' x 3' x 1-1/2'	2	unit
A.3	ACCESSORIES & SUPPORT		
1	Ducting Supply & Return	1	Lot
2	Ducting / Partisi (Low Return)	1	Lot
3	Perforated Grilled	1	Lot
4	Dumper	1	Lot
5	Support	1	lot
6	Pemipaan	1	lot
7	PLC (Programming Logic Control)	1	lot
8	STABILIZER	1	Unit
9	Test Commissioning	1	lot
B	SANDWICH PANEL (RUANG OPERASI)		
	Dimensi Ruangan : 42 m2, Tinggi 3 m		
1	Sandwich Panel (Ceilling)	42	m2
1	Sandwich Panel (Wall)	84	m2
C	VINYL (RUANG OPERASI)		
	Dimensi Ruangan : 42 m2, Tinggi 3 m		
1	VINYL	42	m2
D	ALAT - ALAT PENUNJANG UNTUK RUANG OPERASI		
1	PASSBOX STATIC	1	Unit
2	Mechanical Single Arm Pendant Surgery	1	Unit
3	Electric Single Arm Pendant Anesthesie	1	Unit
4	Single Sliding Hermetic Auto Door	1	Unit
5	Single Swing Hermetic Auto Door	1	Unit
6	Instrument Cabinet	1	Unit
7	Scrub Sink 2 Bay	1	Unit
8	Wall Glass Panel	1	lot

NOTES :

- Apabila ada pekerjaan di luar penawaran maka akan di masukkan kerja tambah
- Dimensi Ruangan bisa berubah tergantung penempatan Modul - Modul (± 40 s/d 60 cm)

■ SISTEM TATA UDARA RUANG OPERASI

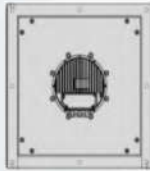
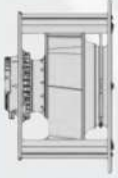
UNIT AHU

AHU Capacity		
Power Supply		380-415V, 50Hz, 3 Phase
Cooling Capacity	Btu/h	100.000 - 150.000
Body Colour		White
Airflow Rate	cfm	3.000 - 4.500
Static Pressure	inwg	4
Fan Type		Plug Fan Centrifugal
Cooling Coil Type		DX Coil
Refrigerant		R410A



PLUG FAN

Merk / Brand : Rosenberg - Made By Germany
Type : GKHM 450
Power : 4,5 Kw / 380 V / 3 P / 50 Hz

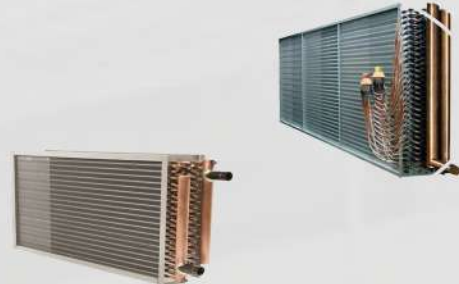


ELECTRIC HEATER



Type : STRAIGHT
Material Tube : SS 304
Material Finned : SS 304

COIL EVAPORATOR



Cooling Capacity : 100.000 - 150.000 Btu/h
Fin Material : Aluminium
End Sheet Material : Galvanis Steel

UV LAMP



Merk / Brand : Philips

MAGNEHELIC



Merk / Brand : Dwyer

OUTDOOR UNIT

Merk / Brand : Daikin
Kapasitas : 100.000 Btu/h - 150.000 Btu/h
Power : 380 V / 3 P / 50 Hz



• AIR FILTER

PRE FILTER

Type : G4 (Disposable)
Efficiency : 90% Based On 10 μm



MEDIUM FILTER

Type : F-8
Efficiency : 90% Based On 1 μm



HEPA FILTER + HOUSING

Type : H-13
Efficiency : 99.95% Based On 0.3 μm
Include : Isolasi, Perforated (SS) dan Tee Bar
Size : 2' x 4' x 1-1/2'
 : 2' x 3' x 1-1/2'



• ACCESSORIES & SUPPORT

Ducting Supply & Return

Material : Polyurethane (PU) 20 mm
Density : 50 +/- 2 Kg/m³
Thermal Conductivity : 0,019 W/m.C
Mencakup : Acc Pendukung (Bayonet, Infsible Flange, Covering Angle dll)



Perforated Grilled

Material : Stainless Steel



Dumper

Material : Zincalume & Powder Coating / Aluminium

Canopy dan Pagar (Situasional)



ELEKTRIKAL

Meliputi :

- ~ Box Panel berikut Part elektrik di dalamnya.
- ~ Pengabelan (dari panel utama ke Unit AHU)
- ~ Kabel - kabel sensor
- ~ Main kabel



PLC (Programming Logic Control)

Mencakup :

- ~ Digital dan display petunjuk suhu, RH dan tekanan ruangan
- ~ Program setting
- ~ Monitoring dan indikator kerja Sistem
- ~ Monitoring sistem error HVAC
- ~ Monitoring dan alarm setting pada suhu, RH dan Tekanan
- ~ History / rekam parameter HVAC (suhu, RH dan tekanan)
- ~ Monitor Touch Screen 32"



STABILIZER

Power (Tergantung kebutuhan / Situasional)

- Input Voltage : 3 Phase
- Output Voltage : 240 V - 310 V
- Frequency : 380 V
- Cooling System : 50 Hz / 60 Hz
- Control System : Convection - Cooled



OPERATING TIMER

Operating Timer with Hours, Temperature and Humidity :
size 850 x 400 mm

Display screen : LED

Adjustment calibration

Monitoring and countdown, Temperature, Humidity system



LED Light

Slim LED light 40 watt :
1200 x 300 x 22,5 mm



TEST COMMISSIONING

mencakup :

- Testing (Uji Fungsi)
- Adjusting (Temperature, RH & Pressure)
- Balancing (mengatur Speed & Pola aliran udara)
- Test Angka Kuman

■ SANDWICH PANEL (RUANG OPERASI)

Sandwich Panel (Ceilling)

Anti Bacterial
 Water Resistance
 Fire Retardant
 Noise Reduction
 Material : PIR (Polyisocyanurate)
 Thickness : 50 mm
 c.w : Accessories & Support

Sandwich Panel (Wall)

Anti Bacterial
 Water Resistance
 Fire Retardant
 Noise Reduction
 Material : PIR (Polyisocyanurate)
 Thickness : 50 mm
 c.w : Accessories & Support

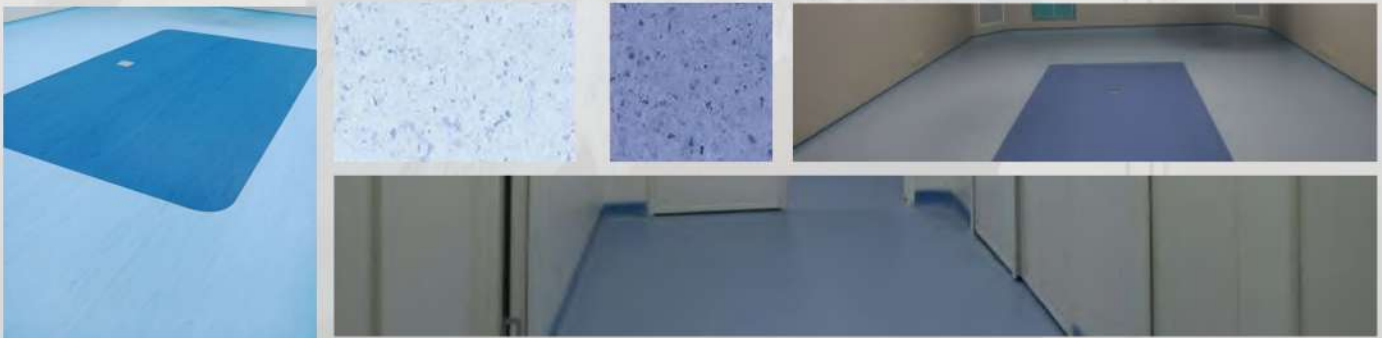
Wall Glass Panel Printing Grafik

Tempered glass
 Photo High Resolution
 Thickness 10 mm



■ VINYL (RUANG OPERASI)

Brand / Type : Armstrong
 Anti Bacterial, Anti Staining, Anti Static, Anti Scuffing, Anti Iodine
 Thickness (2 mm)
 c/w :
 - Accessories & Support
 - Leveling dan Pemerataan Lantai



Tough as Diamond
 - Unique formulation with industrial diamond
 - More compacted and tougher coating to protect the vinyl flooring



Easy to Clean
 - Water/oil-based pollutants are difficult to penetrate into flooring
 - More economic and quicker cleaning maintenance



More Durable
 - Superior anti-scratching capability
 - Double the average coating thickness of competitors
 - Excellent user experience in durability



Anti-Chemical
 - Prevent kinds of medication and strong acid/alkali from damage to flooring
 - Tolerate to daily repeated detergent treatment

ALAT-ALAT PENUNJANG RUANG OPERASI

PASSBOX

- Material : SS 304
Mencakup : - UV Lamp
- Magnetic Interlock System
- Window Glass
- Indicator Lamp



OUTLET GAS MEDIS

- Outlet Gas Medis : Oxygen, Nitrogen,
Air fresh, Vacuum
c/w : Valve dan aksesoris
tambahan lainnya



POWER SOCKET BOX

- Material : Zincalume / Mild Steel
+ Powder Coating
c/w : Aksesoris



AUTOMATIC SINGLE SLIDING HERMATIC DOOR

- Dimensi : 1400/1500 x 2100 x 50 mm
c/w : Support dan Aksesoris pendukung



AUTOMATIC SINGLE SWING HERMATIC DOOR

- Dimensi : 800 - 1000 x 2100 x 50 mm
c/w : Support dan Aksesoris pendukung



X - Ray Film Viewer

Pendant

Spesifikasi Teknis

Nama Produk	NC 2283-SAP	NC 2285-SAP
Jenis Penggerak	Mekanis	Elektrik
Rentang Putar (Sudut)	342	342
Penyesuaian ketinggian vertikal (mm)		600
Kapasitas Beban Baki (kg)	80	80
Ukuran kotak (mm)	220X220	300X300

Semua Pendant memiliki dua lengan. Konfigurasi parameter dapat disesuaikan secara fleksibel sesuai kebutuhan



NC 2283-SAP
Single Arm Mechanical
Pendant Surgery



NC 2285-SAP
Single Arm Electric
Pendant Anestesi.

Scrub Sink 2 Bay

Spesifikasi

- Dimensi : 1800 x 650 x 1450 mm (LxDxH)
- Bahan : Stainless Steel SUS 304 with thickness 1,2 mm
- Automatic sensor system and manually for emergency use
- RTI system
- Hand dryer, auto soap system
- Sterilized Ultra Violet Lamp System
- Filtering system for 5 micron or can be custom (optional)
- 2 Bay faucet automatic system and 2 foot system for manual used
- Water heater 15 L - Titanium porcelain enamel electricity



CABINET

Bahan : Stainless Steel SS 304

